BREC
A Stratus Team Company

October 20, 2025

Dear Bidders – Please see below Addendum #1

Please see attached Structural Drawings and Erosion Control Plans.

NOTE: The Bid DUE DATE has Changed to November 7th at 1:00 PM in the Watauga County Commissioners Board Room.

The MANDATORY PREBID MEETING Date and Place remains the same.

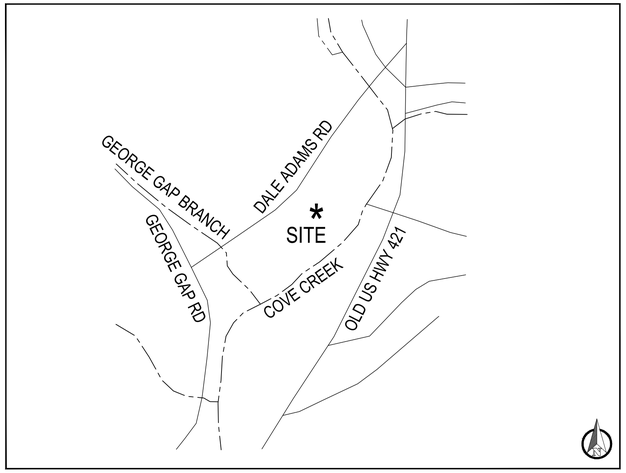
For any questions, please contact BREC, PA at (336) 844-4088.

Sincerely,

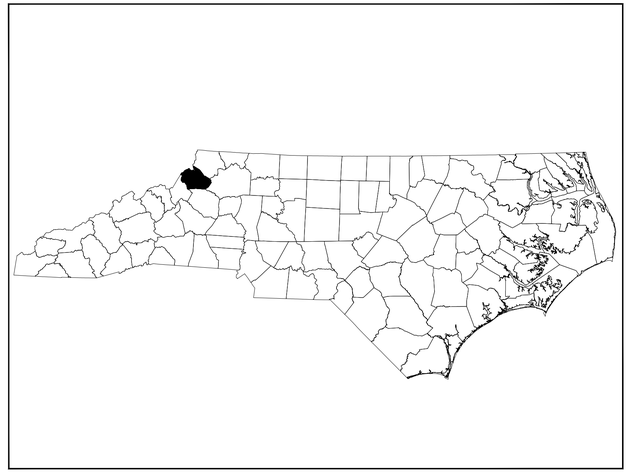
Derek Goddard
BREC, PA – President
1520 Meadowview Dr.
Wilkesboro, NC 28697
336-844-4088

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COVE CREEK PARK
SUGAR GROVE, NC



VICINITY MAP (NTS)



NORTH CAROLINA COUNTY MAP
(WATAUGA COUNTY)

ENGINEER & SURVEYOR
BREC, PA
1605 CURTIS BRIDGE RD - SUITE 1
WILKESBORO, NC 28697
LICENSE: C-3448

ARCHITECT
STRATUS
1605 CURTIS BRIDGE RD - SUITE 1
WILKESBORO, NC 28697

CLIENT
WATAUGA COUNTY
126 POPLAR GROVE CONNECTOR
SUITE 201
BOONE, NC 28607

SHEET INDEX

C000	COVER SHEET
C002	EXISTING CONDITIONS
C003	DEMOLITION PLAN
C100	OVERALL SITE PLAN
C101	ENLARGED SITE PLAN
C102	ENLARGED SITE PLAN
C200	OVERALL GRADING PLAN
C201	GRADING PLAN
C202	GRADING PLAN
C203	STREAM PROFILE & TABLES
C300	PHASE 1 ESC PLAN
C301	PHASE 2 ESC PLAN
C302	PHASE 3 ESC PLAN
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C400	UTILITY PLAN
G100	LANDSCAPE PLAN
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C903	DETAILS
C904	DETAILS
C905	DETAILS

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A103	PAVILION ROOF PLAN & DETAILS
A104	RESTROOM FLOOR & CEILING PLANS
A201	PICNIC SHELTER ELEVATIONS
A202	PAVILION ELEVATIONS
A301	PICNIC SHELTER SECTIONS
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A401	RESTROOM INTERIOR ELEVATIONS
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P-001	PLUMBING NOTES AND SCHEDULES
P-101	PLUMBING PLANS AND RISERS
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M-001	MECHANICAL NOTES
M-101	MECHANICAL PLAN & SCHEDULES
E-001	ELECTRICAL NOTES
E-101	LIGHTING & POWER PLAN
E-301	ELECTRICAL SCHEDULES & DETAILS
E-302	ELECTRICAL PANEL SCHEDULES & RISER

CITY/TOWN: SUGAR GROVE, NC

SITE COORDINATES: LATITUDE = 36.26334° N LONGITUDE = -81.78478° W

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PHONE : 336.844.4088
www.brec.biz

SEALS

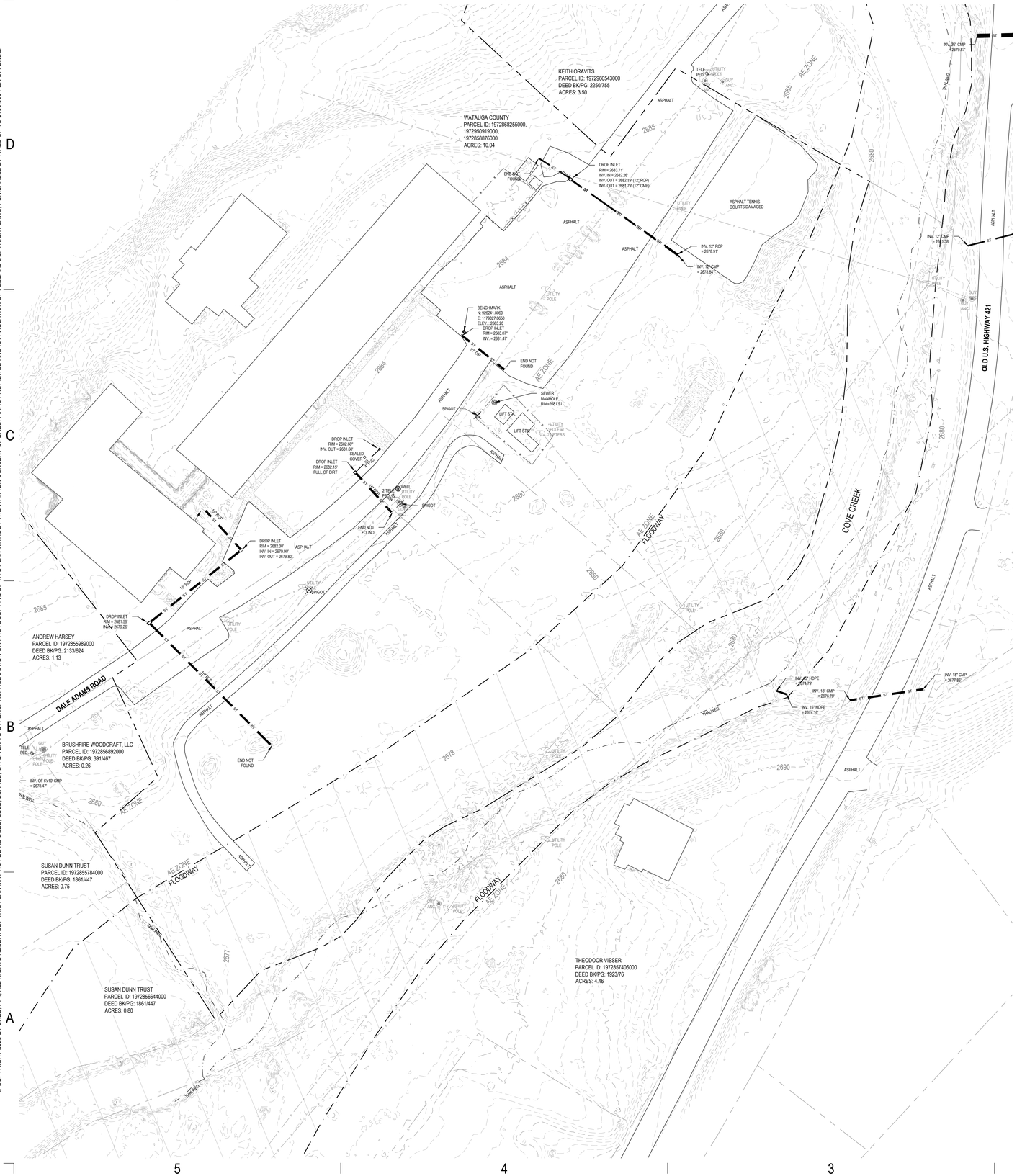
COVE CREEK PARK
SUGAR GROVE, NC

REVISIONS
10/15/25 1 - ADDENDUM #1

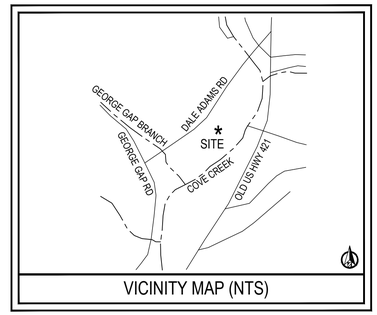
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APPROVED BY:

COVER SHEET

C000



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SEALS

10/20/25

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SUGAR GROVE, NC

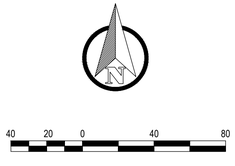
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10/15/25 1 - ADDENDUM #1

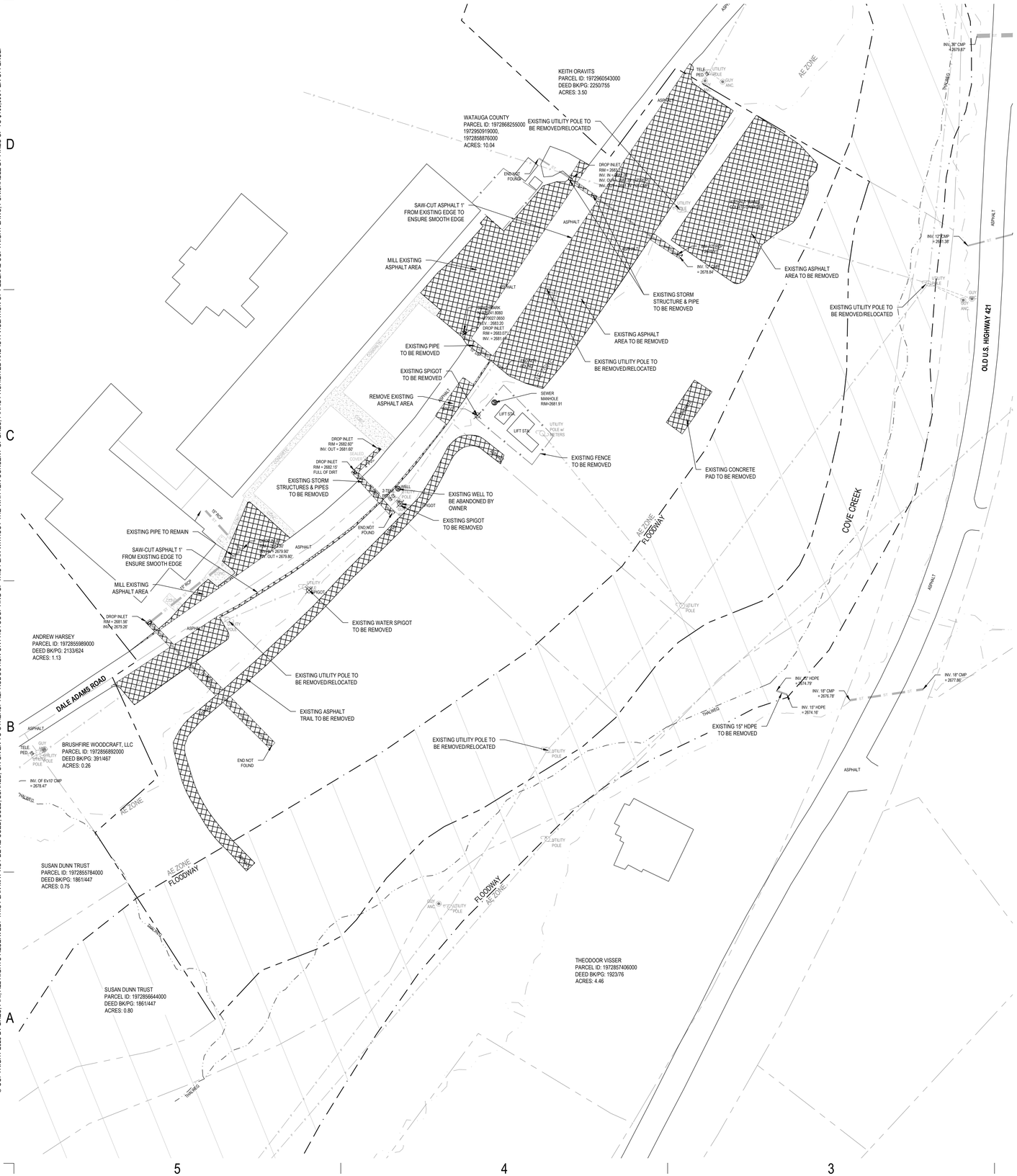
SHEET SIZE: 24"x36"
PROJECT NUMBER: 0980062025
DRAWN BY: J. EDWARDS
APPROVED BY: J.CHURCH

EXISTING CONDITIONS

C002

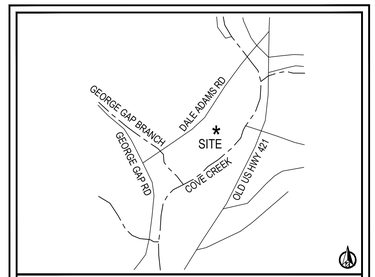


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GENERAL NOTES

1. CONTRACTOR IS TO VERIFY ALL UTILITY LOCATIONS PRIOR TO BEGINNING WORK.
2. ALL WORK IS TO BE IN ACCORDANCE WITH ALL STATE AND LOCAL REGULATIONS.
3. ALL PERMITS ARE TO BE OBTAINED BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION.
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7. ALL WORK PERFORMED WITHIN THE PUBLIC ROW SHALL BE PER DOT SPECS AND SHALL BE INSPECTED FOR COMPLIANCE BY STATE INSPECTORS AT THEIR DISCRETION.



VICINITY MAP (NTS)

LEGEND

- PROPERTY LINE
- 100 EXISTING CONTOURS
- 100 PROPOSED CONTOURS
- P EX. OVERHEAD ELECTRIC

ALL FLOOD DEBRIS & WASTE SHALL BE REMOVED TO AN APPROVED SITE.



40 20 0 40 80

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PHONE : 336.844.4088
www.brec.biz

SEALS

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 041 REVIEW JOSHUA C. CHURCH

10/20/25

COVE CREEK PARK
SUGAR GROVE, NC

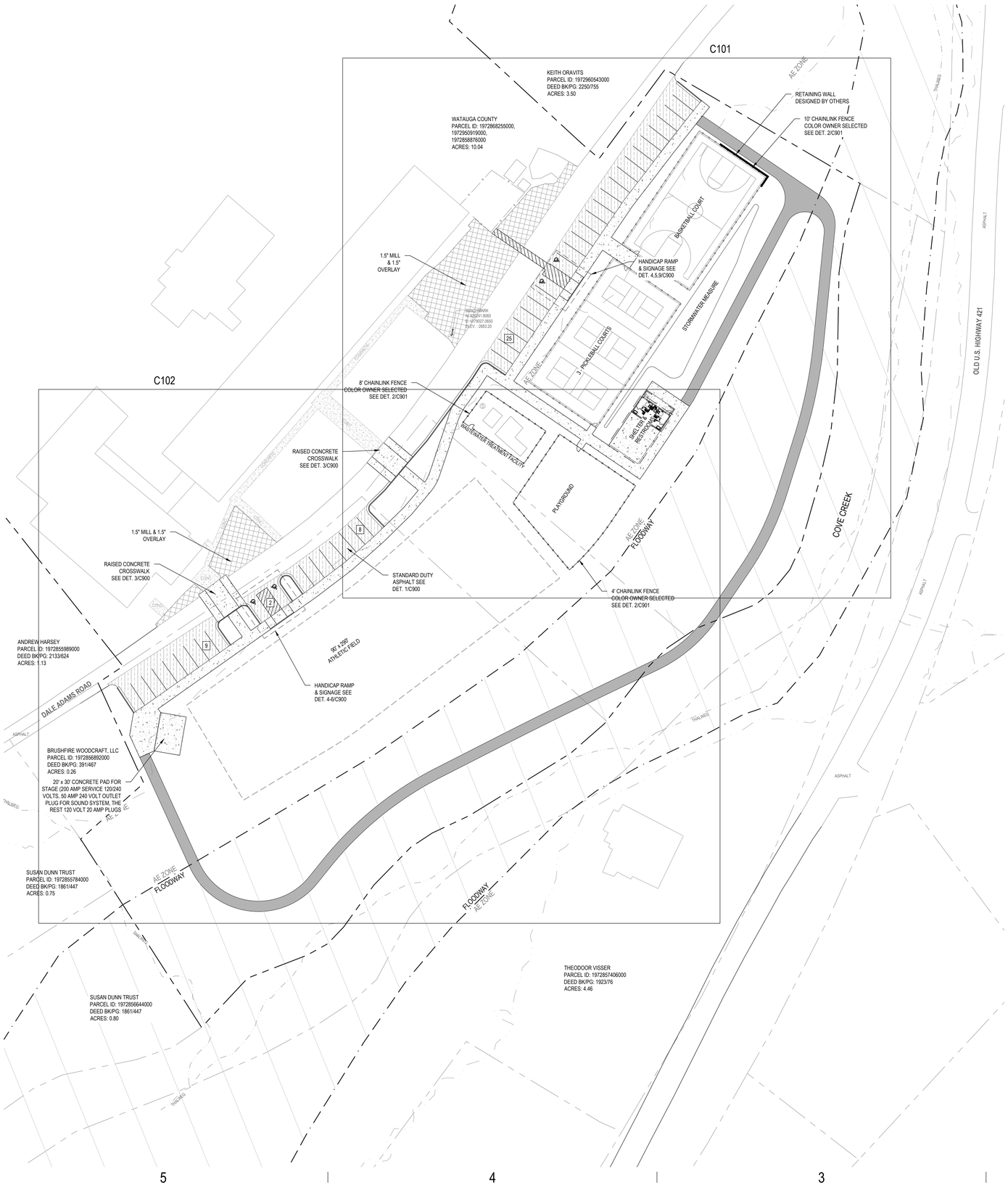
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10/15/25 1 - ADDENDUM #1

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PROJECT NUMBER: 0980062025
DRAWN BY: J. EDWARDS
APPROVED BY: J.CHURCH

DEMOLITION PLAN

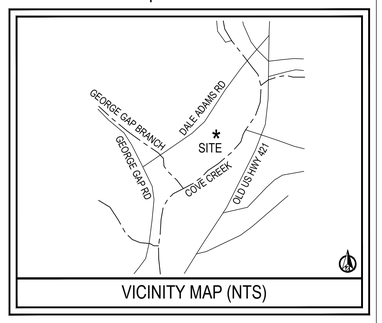
C003



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PARKING AND PAVEMENT NOTES
1. ALL SIGNS, PAVEMENT MARKINGS, AND OTHER TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC DEVICES, 2012 EDITION AS AMENDED.
2. ALL DOT PAVEMENT SYMBOLS SHALL BE THERMOPLASTIC PAINT.
3. ALL DOT PAVEMENT LINES SHALL BE POLYREA PAINT.
4. ALL DIMENSIONS ARE TO FACE-OF-CURB UNLESS INDICATED OTHERWISE.
5. ALL CURB RADII ARE 5' UNLESS OTHERWISE INDICATED.
6. CONTRACTOR SHALL FURNISH AND INSTALL PAVEMENT MARKINGS AS SHOWN ON THE PLANS.
7. CONTRACTOR SHALL COORDINATE THE INSTALLATION OF ALL SIGNS, PAVEMENT MARKINGS, AND OTHER TRAFFIC CONTROL DEVICES WITH OTHER CONTRACTORS ON SITE.
8. JOINTS OR SCORE MARKS ARE TO BE SHARP AND CLEAN WITHOUT SHOWING EDGES OF JOINTING TOOLS.
9. CONTRACTOR SHALL SAW-CUT TIE-INS AT EXISTING CURBS AS NECESSARY TO INSURE SMOOTH TRANSITIONS. CONTRACTOR SHALL SAW-CUT AND TRANSITION TO MEET EXISTING PAVEMENT AS NECESSARY AND AS DIRECTED BY INSPECTOR TO INSURE POSITIVE DRAINAGE (TYPICAL AT ALL INTERSECTIONS).
10. CONTRACTOR SHALL COMPLY WITH ALL PERTINENT PROVISIONS OF THE "MANUAL OF ACCIDENT PREVENTION IN CONSTRUCTION" ISSUED BY AGC OF AMERICA, INC. AND THE HEALTH AND SAFETY REGULATIONS FOR CONSTRUCTION ISSUED BY THE US DEPARTMENT OF LABOR.
11. CONTRACTOR SHALL FULLY COMPLY WITH THE REQUIREMENTS OF THE SOILS ENGINEER.
12. ALL EXISTING ON-SITE STRUCTURES SHALL BE REMOVED PER LOCAL CODES AND DISPOSED OF OFF-SITE, INCLUDING ALL ATTACHED UTILITIES AND APPURTENANCES. ANY AND ALL WELLS ON-SITE SHALL BE IDENTIFIED TO THE ENGINEER BEFORE CONSTRUCTION AND CAPPED PER HIS INSTRUCTIONS.
13. ALL AREAS NOT IDENTIFIED AS STANDARD DUTY PAVING SHALL BE CONSTRUCTED AS HEAVY DUTY PAVING (SEE DETAILS FOR STANDARD AND HEAVY DUTY PAVING REQUIREMENTS).
14. ALL SIGNS, WHETHER FREE-STANDING OR ATTACHED REQUIRE SEPARATE APPLICATION FOR EACH INDIVIDUAL SIGN. ALL SIGNS SHALL MEET LOCAL REQUIREMENTS. A SIGN PERMIT IS REQUIRED PRIOR TO INSTALLATION OF ANY SIGN.



VICINITY MAP (NTS)

LEGEND
- PROPERTY LINE
- 100 EXISTING CONTOURS
- 100 PROPOSED CONTOURS
- P EX. OVERHEAD ELECTRIC
- STANDARD DUTY ASPHALT
- 1.5" MILL & 1.5" OVERLAY

BASE BIDS	
LINE ITEM	DESCRIPTION
1	FENCE - ALL
2	PICNIC SHELTER ONLY
3	DEMOLITION
4	GRADING & SITE WORK
5	SEEDING & EROSION CONTROL
6	MULTI-USE-PATH - ASPHALT - 5' WIDE
7	ATHLETIC FIELD - SOD
8	PLAYGROUND - FENCED AREA ONLY (EQUIPMENT PROVIDED BY OWNER)
9	BASKETBALL COURT AND MARKINGS
10	PICKLEBALL COURTS AND MARKINGS
11	STREAM RESTORATION/BANK STABLIZATION
12	STORMWATER NETWORK
ALTERNATES	
LINE ITEM	DESCRIPTION
1	MULTI-USE-PATH - ASPHALT- OPTION TO EXTEND TO 8' WIDE
2	STAGE AREA - CONCRETE PAD & ASSOCIATED CONCRETE
3	RESTROOM FACILITY
4	PARKING AREAS/ASPHALT RESURFACING/ADDITIONAL ASPHALT & STONE BASE
5	ELECTRICAL SERVICE FOR STAGE
6	CURB & GUTTER
7	LANDSCAPING
8	CROSSWALKS & STRIPING
9	SIDEWALKS
10	WELL COVER

SITE INFORMATION	
PROPERTY SIZE	10.04± ACRES
PROVIDED PARKING	44
STRIPING LEGEND	
YELLOW CURBING AND BOLLARDS - PARKING LOT	SURFACES SHOULD BE CLEAN, DRY AND METAL SURFACES FREE OF HEAVY RUST. 2 COATS SHERWIN WILLIAMS - KEM 4000 ACRYLIC ALKYD ENAMEL SAFETY YELLOW B55Y300
STRIPING - PARKING LOT	SURFACES SHOULD BE CLEAN, DRY. TOP COAT SHERWIN WILLIAMS - PROMAR TRAFFIC MARKING PAINT WHITE TM5494
HANDICAP STRIPING - PARKING LOT	SURFACES SHOULD BE CLEAN, DRY. TOP COAT SHERWIN WILLIAMS - PROMAR TRAFFIC MARKING PAINT "H.C." BLUE

40 20 0 40 80

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1605 CURTIS BRIDGE ROAD - SUITE 1
WILKESBORO, NC 28697
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SEALS

NORTH CAROLINA PROFESSIONAL ENGINEER VIRGIN C. CHURCH FOR REVIEW ONLY

10/20/25

COVE CREEK PARK
SUGAR GROVE, NC

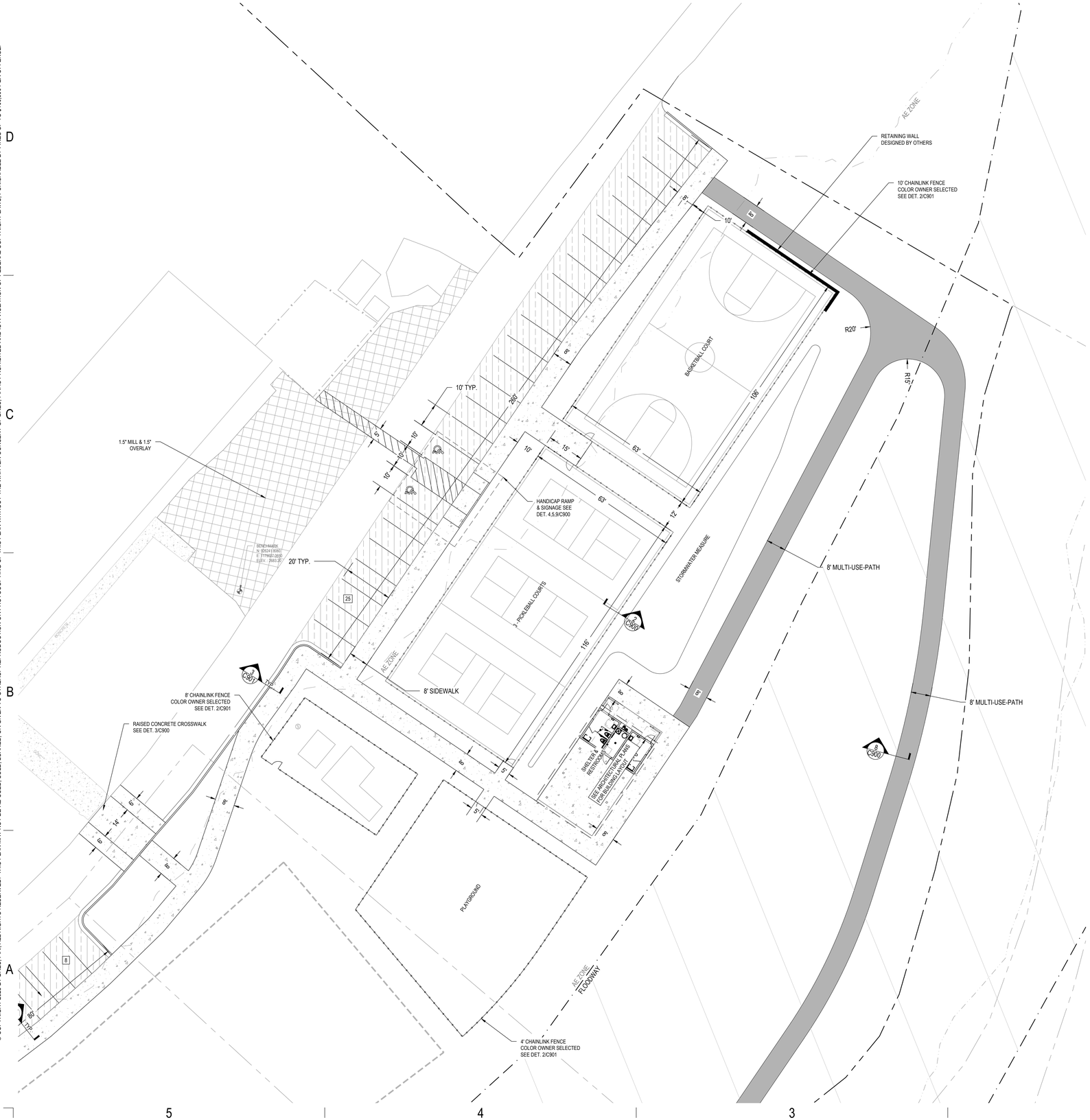
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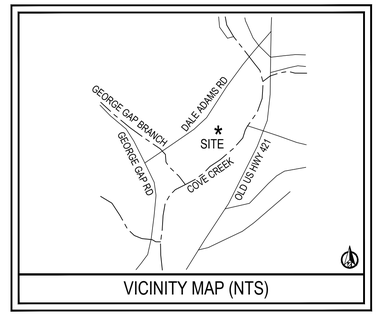
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OVERALL SITE PLAN

C100

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VICINITY MAP (NTS)

LEGEND

- PROPERTY LINE
- 100 EXISTING CONTOURS
- 100 PROPOSED CONTOURS
- P EX. OVERHEAD ELECTRIC
- STANDARD DUTY ASPHALT
- 1.5" MILL & 1.5" OVERLAY

STRIPING LEGEND	
YELLOW CURBING AND BOLLARDS - PARKING LOT	SURFACES SHOULD BE CLEAN, DRY AND METAL SURFACES FREE OF HEAVY RUST. 2 COATS SHERWIN WILLIAMS - KEM 4000 ACRYLIC ALKYD ENAMEL SAFETY YELLOW B55Y300
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FOR REVIEW ONLY

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COVE CREEK PARK
SUGAR GROVE, NC

REVISIONS

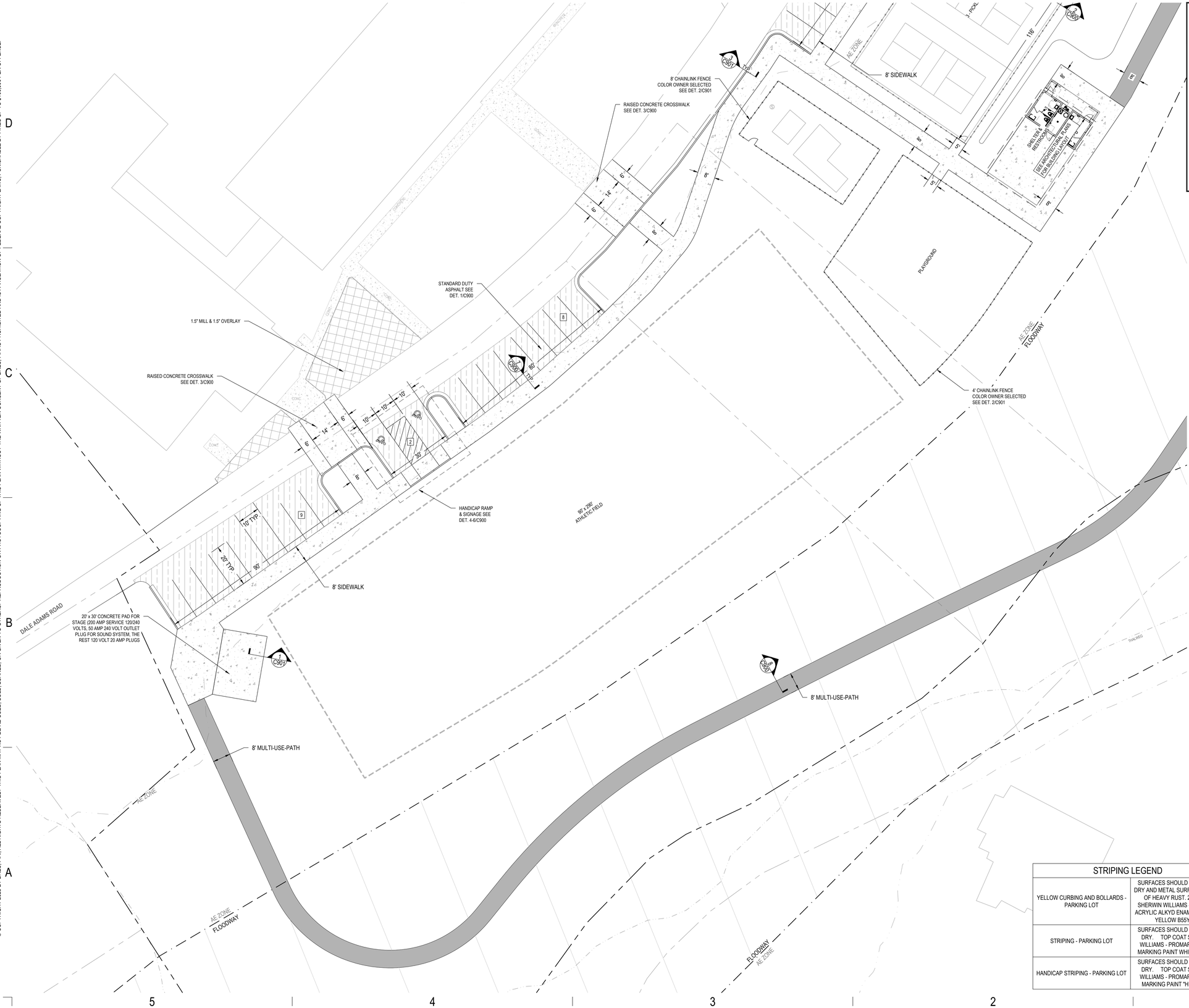
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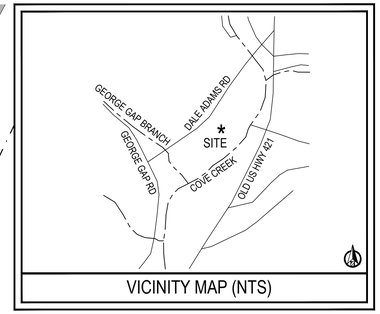
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ENLARGED SITE PLAN

C101

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SEALS

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL REVIEW VIRGIN C. CHURCH

10/20/25

COVE CREEK PARK
SUGAR GROVE, NC

REVISIONS

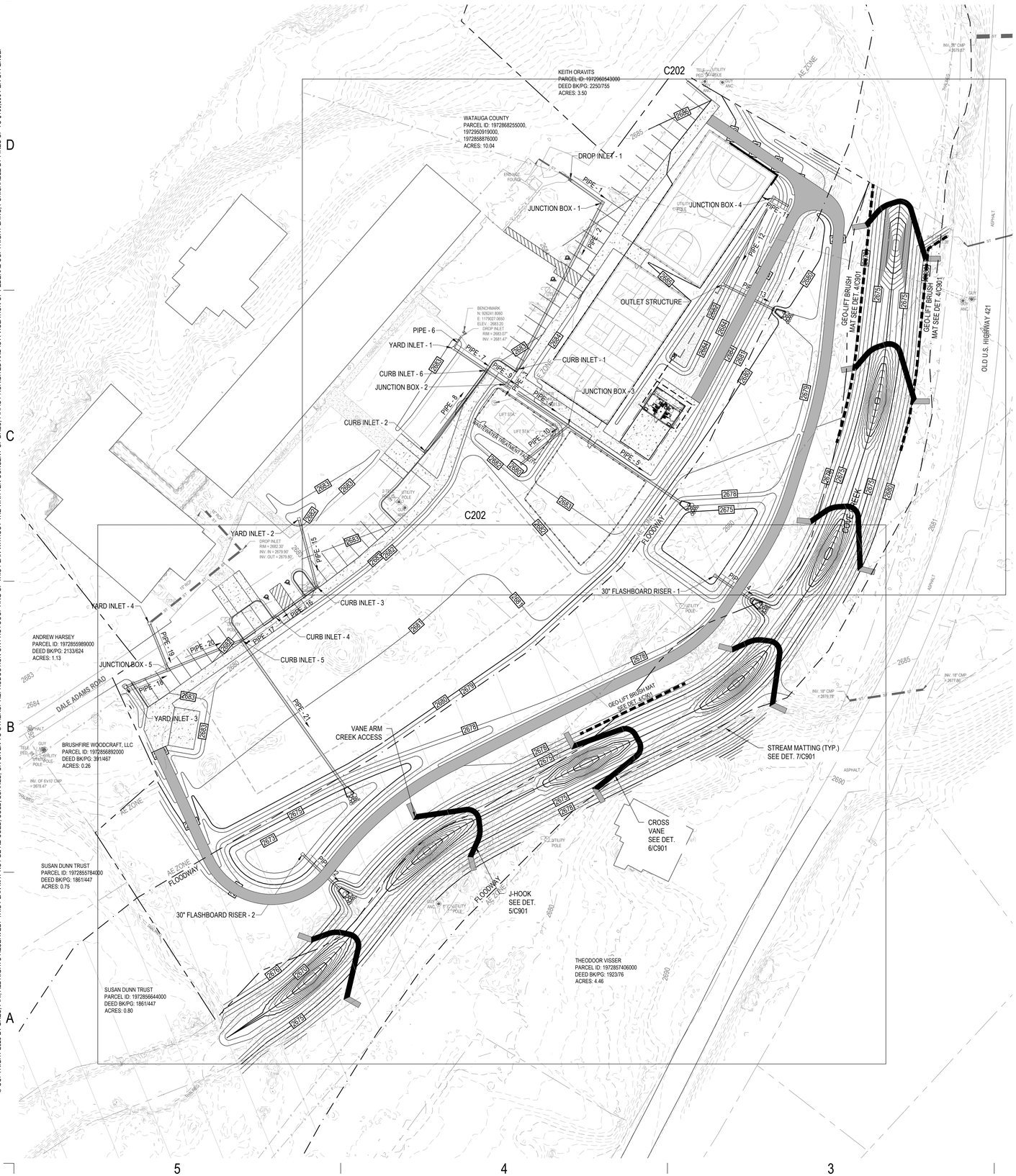
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ENLARGED SITE PLAN

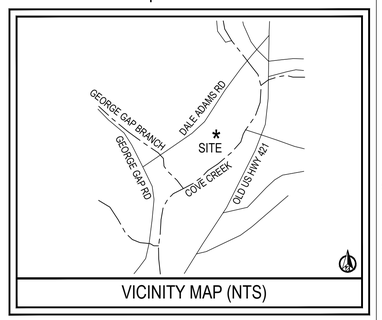
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GRADING NOTES
1. PROPOSED CONTOURS SHOWN ARE TOP OF FUTURE PAVING/GRAVEL IN AREAS TO RECEIVE PAVEMENT/GRAVEL AND TOP OF TOPSOIL IN AREAS TO BE SEEDED AND/OR LANDSCAPED.
2. AREAS OUTSIDE OF THE PARKING LOT PERIMETERS SHOWN TO BE SEEDED AND/OR LANDSCAPED.
3. CONTRACTOR SHALL NOTIFY AND COOPERATE WITH ALL UTILITY COMPANIES OR FIRMS HAVING FACILITIES ON OR ADJACENT TO THE SITE BEFORE DISTURBING, ALTERING, REMOVING, RELOCATING, ADJUSTING, OR CONNECTING TO SAID FACILITIES. CONTRACTOR SHALL PAY ALL COSTS IN CONNECTION WITH ALTERATION OF OR RELOCATION OF THE FACILITY.
4. ALL CATCH BASIN GRATE AND FRAMES ARE TO BE BY US FOUNDRY OR APPROVED EQUAL (U.O.N.) SEE SPECIFICATIONS.
5. ALL AREAS NOT COVERED BY BUILDING OR PAVING ARE TO BE GRASSED.
6. UNUSABLE EXCAVATED MATERIALS AND ALL WASTE RESULTING FROM CLEARING AND GRUBBING SHALL BE DISPOSED TO AN APPROVED OFF SITE LOCATION BY CONTRACTOR.
7. ALL EXCAVATING IS UNCLASSIFIED AND SHALL INCLUDE ALL MATERIALS ENCOUNTERED.
8. BEFORE ANY MACHINE WORK IS DONE, CONTRACTOR SHALL STAKE-OUT AND MARK OUT THE ITEMS ESTABLISHED BY THE SITE PLAN. CONTROL POINTS SHALL BE PRESERVED AT ALL TIMES DURING THE COURSE OF CONSTRUCTION. LACK OF PROPER WORKING POINTS AND GRADE STAKES MAY REQUIRE CESSATION OF OPERATIONS UNTIL SUCH POINTS AND GRADES HAVE BEEN PLACED TO THE OWNER'S SATISFACTION.
9. CONTRACTOR IS RESPONSIBLE FOR DETERMINING EARTHWORK QUANTITIES. ENGINEER MAKES NO STATEMENT EITHER IMPLIED OR EXPRESSED REGARDING CUT/FILL QUANTITIES.
10. ALL CORRUGATED METAL PIPE IS TO BE ALUMINIZED OR APPROVED EQUAL WITH RE-ROLLED ENDS. ALL BANDS ARE TO BE HUGGER TYPE.
11. ALL STORM DRAINAGE PIPES SHALL HAVE 12" MINIMUM COVER.
12. ALL GROUND ELEVATIONS ADJACENT TO BUILDING STRUCTURES ARE TO BE A MINIMUM OF 6" BELOW THE FINISHED FLOOR ELEVATION.
13. ALL HDPE IS TO BE ADS N-12 ST IB DUAL WALL WITH WATER TIGHT JOINTS AND DUAL WALL FITTINGS OR APPROVED EQUAL.
14. ALL PIPE LENGTHS GIVEN ARE TO THE CENTER OF STRUCTURES.
15. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ANY BENCHMARKS SUPPLIED AS PART OF THESE PLANS.
16. CONTRACTOR RESPONSIBLE FOR IDENTIFYING AND PERMITTING WASTE AND BORROW SITES AS NECESSARY. WASTE AND BORROW SITES MUST BE APPROVED LOCATIONS.



VICINITY MAP (NTS)

LEGEND
- PROPERTY LINE
- 100 EXISTING CONTOURS
- 100 PROPOSED CONTOURS
- P EX. OVERHEAD ELECTRIC

STRUCTURE TABLE	
STRUCTURE NAME	DETAILS
30" FLASHBOARD RISER - 1	RIM = 2678.00' INV OUT = 2674.50'
30" FLASHBOARD RISER - 2	RIM = 2676.00' INV OUT = 2672.50'
CURB INLET - 1	RIM = 2682.75' INV IN = 2679.45' INV OUT = 2679.35'
CURB INLET - 2	RIM = 2683.30' INV OUT = 2680.30'
CURB INLET - 3	RIM = 2682.50' INV IN = 2678.40' INV OUT = 2678.30'
CURB INLET - 4	RIM = 2682.15' INV IN = 2678.10' INV OUT = 2678.00'
CURB INLET - 5	RIM = 2681.80' INV IN = 2677.85' INV IN = 2677.85' INV OUT = 2677.55'
CURB INLET - 6	RIM = 2682.14' INV IN = 2679.70' INV IN = 2679.70' INV OUT = 2679.60'
DROP INLET - 1	RIM = 2683.75' INV OUT = 2680.90'
JUNCTION BOX - 1	RIM = 2684.15' INV IN = 2680.70' INV OUT = 2680.60'
JUNCTION BOX - 2	RIM = 2683.10' INV IN = 2679.25' INV IN = 2679.50' INV OUT = 2679.15'
JUNCTION BOX - 3	RIM = 2683.75' INV IN = 2678.85' INV IN = 2679.10' INV OUT = 2678.75'
JUNCTION BOX - 4	RIM = 2684.25' INV IN = 2680.00' INV OUT = 2679.90'
JUNCTION BOX - 5	RIM = 0.00' INV IN = 2678.30' INV IN = 2678.30' INV OUT = 2678.20'
OUTLET STRUCTURE	RIM = 2683.00' INV IN = 2679.10' INV OUT = 2679.00'
YARD INLET - 1	RIM = 2682.40' INV IN = 2680.00' INV OUT = 2679.90'
YARD INLET - 2	RIM = 2681.50' INV OUT = 2678.70'
YARD INLET - 3	RIM = 2681.75' INV OUT = 2678.78'
YARD INLET - 4	RIM = 2681.50' INV OUT = 2678.50'

PIPE TABLE				
PIPE NAME	SIZE	LENGTH	SLOPE	INVERTS
PIPE - 1	18 INCH CONCRETE PIPE	26.87'	0.74%	INV. IN = 2680.90 INV. OUT = 2680.70
PIPE - 2	18 INCH CONCRETE PIPE	141.65'	0.81%	INV. IN = 2680.60 INV. OUT = 2679.45
PIPE - 3	18 INCH CORRUGATED HDPE PIPE	10.01'	1.00%	INV. IN = 2679.35 INV. OUT = 2679.25
PIPE - 4	18 INCH CORRUGATED HDPE PIPE	53.39'	0.57%	INV. IN = 2679.15 INV. OUT = 2678.85
PIPE - 5	18 INCH CORRUGATED HDPE PIPE	103.87'	1.68%	INV. IN = 2678.75 INV. OUT = 2677.00
PIPE - 6	10.0 INCH PVC PIPE	8.92'	16.33%	INV. IN = 2681.47 INV. OUT = 2680.00
PIPE - 7	15 INCH CONCRETE PIPE	26.90'	0.74%	INV. IN = 2679.90 INV. OUT = 2679.70
PIPE - 8	15 INCH CONCRETE PIPE	74.58'	0.80%	INV. IN = 2680.30 INV. OUT = 2679.70
PIPE - 9	15 INCH CONCRETE PIPE	15.25'	0.67%	INV. IN = 2679.60 INV. OUT = 2679.50
PIPE - 10	15 INCH CORRUGATED HDPE PIPE	45.39'	0.89%	INV. IN = 2679.50 INV. OUT = 2679.10
PIPE - 11	15 INCH CORRUGATED HDPE PIPE	11.04'	0.91%	INV. IN = 2680.10 INV. OUT = 2680.00
PIPE - 12	15 INCH CORRUGATED HDPE PIPE	74.08'	1.08%	INV. IN = 2679.90 INV. OUT = 2679.10
PIPE - 13	15 INCH CORRUGATED HDPE PIPE	43.97'	0.57%	INV. IN = 2679.00 INV. OUT = 2678.75
PIPE - 14	18 INCH CORRUGATED METAL PIPE	33.39'	0.76%	INV. IN = 2674.50 INV. OUT = 2674.25
PIPE - 15	15 INCH CONCRETE PIPE	50.63'	0.59%	INV. IN = 2678.70 INV. OUT = 2678.40
PIPE - 16	15 INCH CORRUGATED HDPE PIPE	36.01'	0.56%	INV. IN = 2678.30 INV. OUT = 2678.10
PIPE - 17	15 INCH CORRUGATED HDPE PIPE	27.53'	0.54%	INV. IN = 2678.00 INV. OUT = 2677.85
PIPE - 18	15 INCH CORRUGATED HDPE PIPE	33.70'	1.41%	INV. IN = 2678.78 INV. OUT = 2678.30
PIPE - 19	15 INCH CONCRETE PIPE	36.96'	0.54%	INV. IN = 2678.50 INV. OUT = 2678.30
PIPE - 20	15 INCH CORRUGATED HDPE PIPE	59.34'	0.59%	INV. IN = 2678.20 INV. OUT = 2677.85
PIPE - 21	18 INCH CORRUGATED HDPE PIPE	138.43'	1.85%	INV. IN = 2677.55 INV. OUT = 2675.00
PIPE - 22	18 INCH CORRUGATED METAL PIPE	37.82'	0.66%	INV. IN = 2672.50 INV. OUT = 2672.25

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SEALS

NORTH CAROLINA PROFESSIONAL ENGINEER JOSHUA C. CHURCH SEAL 049141 REVIEW

10/20/25

COVE CREEK PARK
SUGAR GROVE, NC

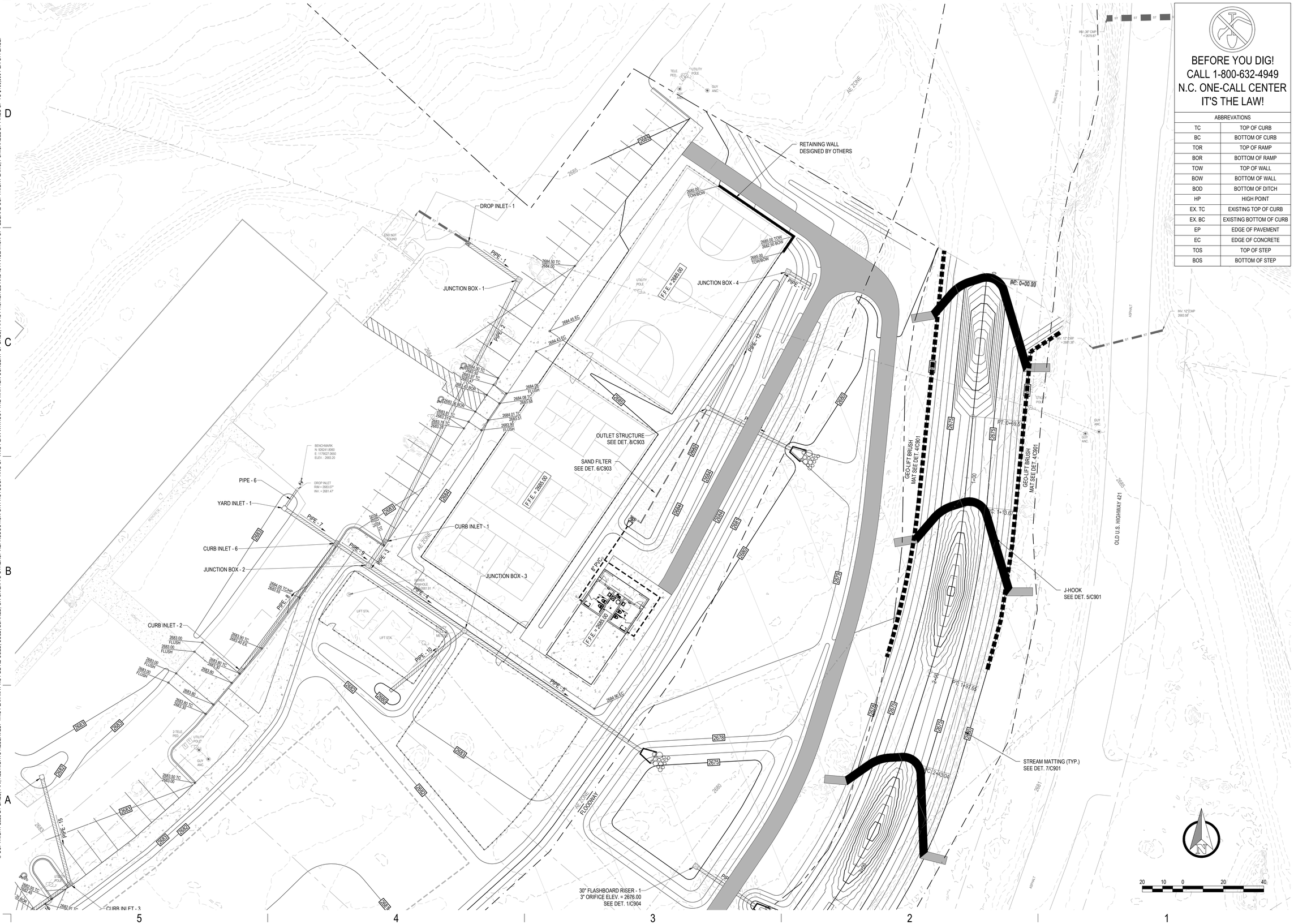
REVISIONS
10/15/25 1 - ADDENDUM #1

SHEET SIZE: 24"x36"
PROJECT NUMBER: 09800062025
DRAWN BY: J. EDWARDS
APPROVED BY: J.CHURCH

OVERALL GRADING PLAN

C200

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ABBREVATIONS	
TC	TOP OF CURB
BC	BOTTOM OF CURB
TOR	TOP OF RAMP
BOR	BOTTOM OF RAMP
TOW	TOP OF WALL
BOW	BOTTOM OF WALL
BOD	BOTTOM OF DITCH
HP	HIGH POINT
EX. TC	EXISTING TOP OF CURB
EX. BC	EXISTING BOTTOM OF CURB
EP	EDGE OF PAVEMENT
EC	EDGE OF CONCRETE
TOS	TOP OF STEP
BOS	BOTTOM OF STEP

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VIRGINIA CHURCH

10/20/25

COVE CREEK PARK
SUGAR GROVE, NC

REVISIONS

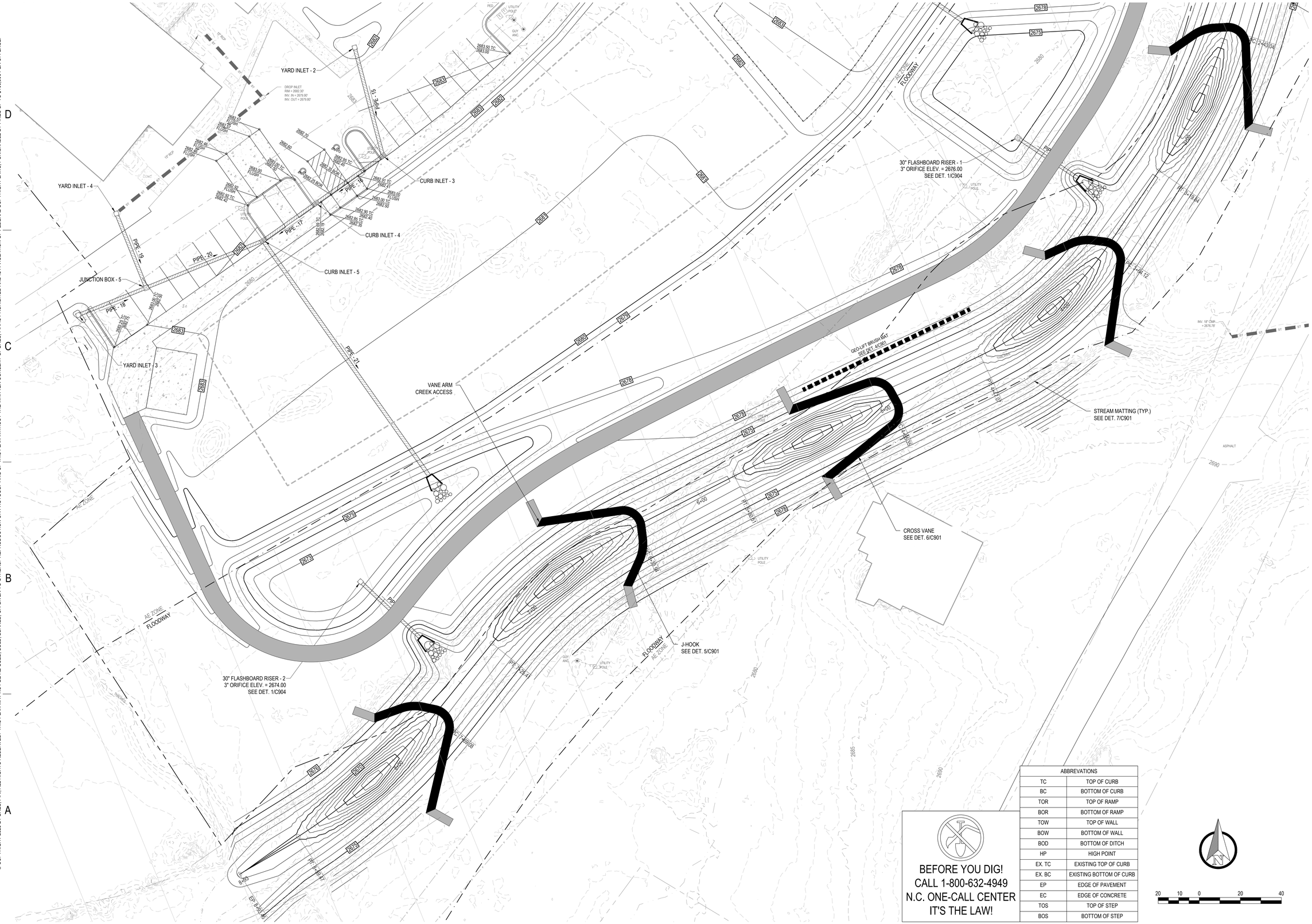
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SHEET SIZE:	24"x36"
PROJECT NUMBER:	0980062025
DRAWN BY:	J. EDWARDS
APPROVED BY:	J.CHURCH

GRADING PLAN

C201

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ABBREVATIONS	
TC	TOP OF CURB
BC	BOTTOM OF CURB
TOR	TOP OF RAMP
BOR	BOTTOM OF RAMP
TOW	TOP OF WALL
BOW	BOTTOM OF WALL
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EX. TC	EXISTING TOP OF CURB
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EP	EDGE OF PAVEMENT
EC	EDGE OF CONCRETE
TOS	TOP OF STEP
BOS	BOTTOM OF STEP

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SEALS

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 049141 REVIEW JUSTIN C. CHURCH

10/20/25

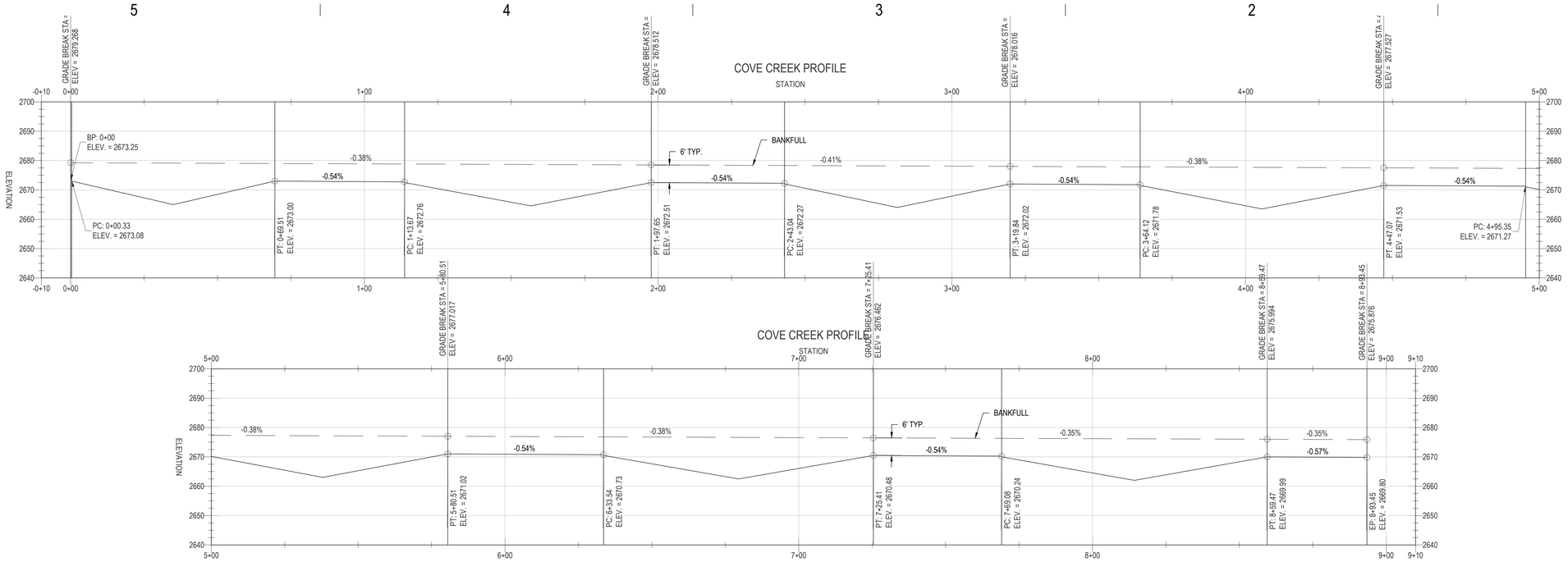
COVE CREEK PARK
SUGAR GROVE, NC

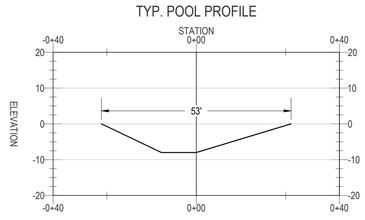
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10/15/25	1 - ADDENDUM #1

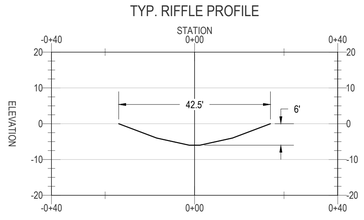
SHEET SIZE: 24"x36"
PROJECT NUMBER: 0980062025
DRAWN BY: J. EDWARDS
APPROVED BY: J.CHURCH

GRADING PLAN

C202







STATION	STRUCTURE	ELEVATION
0+00.00	BEGINNING	2673.25
0+00.34	HEAD OF POOL	2673.00
0+69.51	HEAD OF RIFFLE	2673.00
1+13.67	HEAD OF POOL	2672.76
1+97.65	HEAD OF RIFFLE	2672.51
2+43.04	HEAD OF POOL	2672.27
3+19.84	HEAD OF RIFFLE	2672.02
3+64.12	HEAD OF POOL	2671.78
4+47.07	HEAD OF RIFFLE	2671.53
4+95.35	HEAD OF POOL	2671.27
5+80.51	HEAD OF RIFFLE	2671.02
6+33.54	HEAD OF POOL	2670.73
7+25.41	HEAD OF RIFFLE	2670.48
7+69.08	HEAD OF POOL	2670.24
8+59.47	HEAD OF RIFFLE	2669.99
8+93.45	END	2669.80

20 10 0 20 40

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SEALS

NORTH CAROLINA PROFESSIONAL ENGINEER JOSHUA C. CHURCH SEAL 049141 REVIEW

10/20/25

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SUGAR GROVE, NC

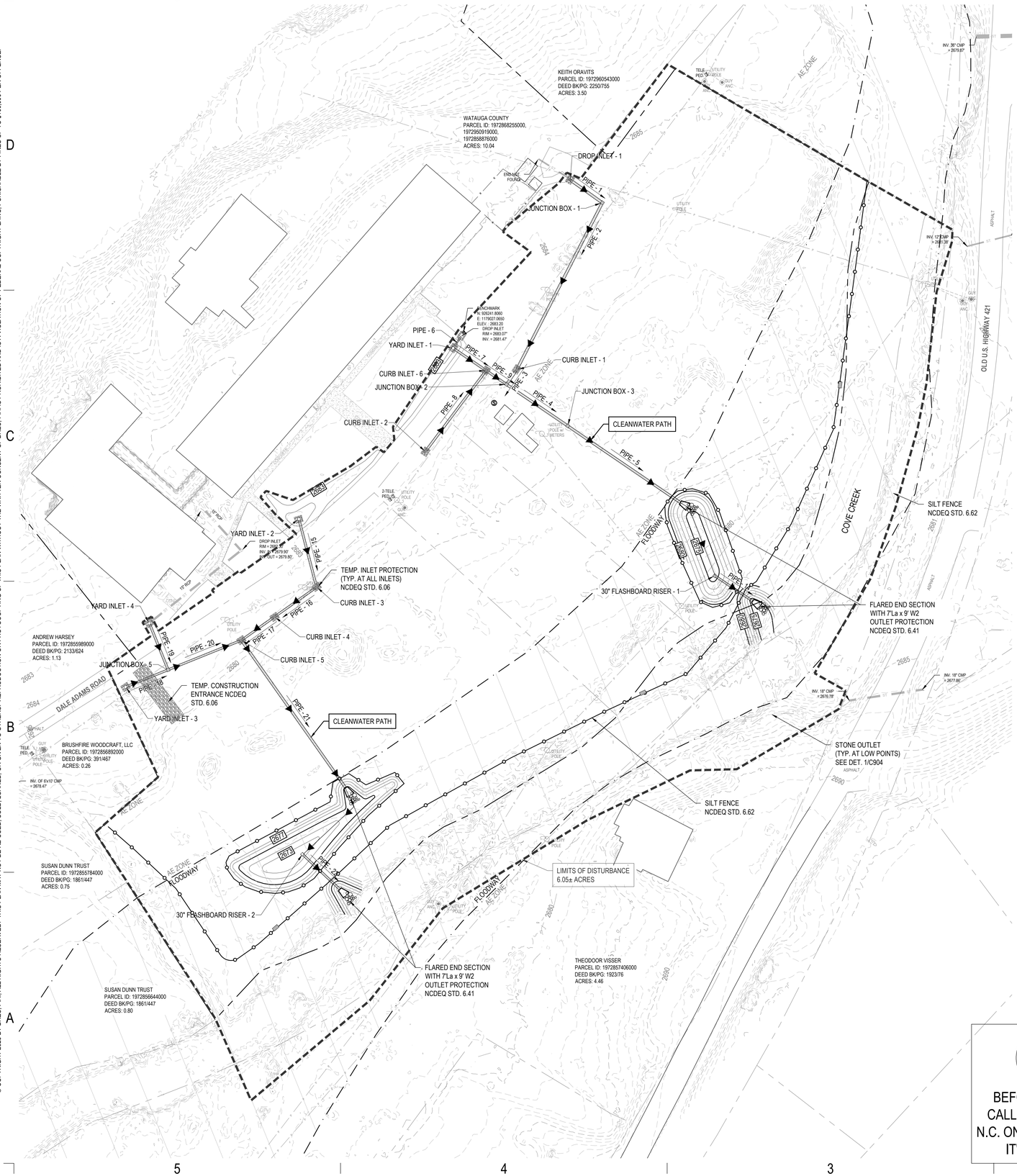
REVISIONS

10/15/25 1 - ADDENDUM #1

SHEET SIZE: 24"x36"
PROJECT NUMBER: 0980062025
DRAWN BY: J. EDWARDS
APPROVED BY: J.CHURCH

STREAM PROFILES & STRUCTURE TABLE

C203



GENERAL NOTES

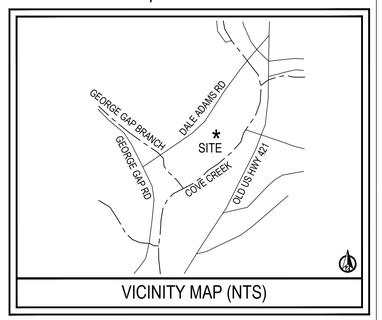
1. CONTRACTOR IS TO VERIFY ALL UTILITY LOCATIONS PRIOR TO BEGINNING WORK.
2. ALL WORK IS TO BE IN ACCORDANCE WITH ALL STATE AND LOCAL REGULATIONS.
3. ALL PERMITS ARE TO BE OBTAINED BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION.
4. CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH ALL PERMIT CONDITIONS.
5. EXISTING UTILITIES ON SITE SHALL BE RELOCATED AS REQUIRED. CONTRACTOR SHALL PAY ALL COSTS ASSOCIATED WITH RELOCATION.
6. CONTRACTORS ARE TO FULLY ACQUAINT THEMSELVES WITH ALL UTILITIES WITHIN THE CITY AND STATE ROW AND WITHIN THE PROPERTY BOUNDARIES WHICH WILL REQUIRE RELOCATION. ALL COSTS ASSOCIATED WITH RELOCATION SHALL BE INCLUDED IN THE BASE BID.
7. ALL WORK PERFORMED WITHIN THE PUBLIC ROW SHALL BE PER DOT SPECS AND SHALL BE INSPECTED FOR COMPLIANCE BY STATE INSPECTORS AT THEIR DISCRETION.

MAINTENANCE PLAN

1. EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO ANY EXISTING BUILDING DEMOLITION.
2. CONTRACTOR IS RESPONSIBLE FOR ALL EROSION AND SEDIMENTATION CONTROL REQUIREMENTS AND SHALL COMPLY WITH THE LATEST EDITION OF THE NORTH CAROLINA EROSION AND SEDIMENTATION CONTROL MANUAL.
3. PER NPDES REQUIREMENTS, CHECK ALL EROSION AND SEDIMENTATION CONTROL DEVICES AND STORMWATER RUNOFF DISCHARGES FROM EACH OUTFALL SHOULD BE INSPECTED EVERY SEVEN DAYS AND WITHIN 24 HOURS AFTER ANY STORM EVENT. A RAINFALL GAUGE SHALL BE KEPT ON SITE, AND A RECORD OF RAINFALL AMOUNTS AND DATES MUST BE RECORDED AND KEPT ON SITE. RECORDS OF INSPECTIONS OF DEVICES AND OUTFALLS SHOULD BE KEPT AND VISIBLE SEDIMENTATION OUTSIDE THE DISTURBED LIMITS SHOULD BE NOTED. ANY ACTIONS TO CONTROL FUTURE RELEASES AND CLEANUP OF SEDIMENT MUST BE RECORDED. A SAMPLE LOG FOR RECORD KEEPING IS AVAILABLE FROM NCDEQ DIVISION OF WATER QUALITY, STORMWATER AND GENERAL PERMITS UNIT.
4. CHECK ALL EROSION CONTROL DEVICES WEEKLY AND AFTER EACH RUNOFF PRODUCING STORM EVENT AND MAKE ANY NECESSARY REPAIRS AS NEEDED TO ENSURE DEVICES ARE FUNCTIONING AS INTENDED.
5. REMOVE SEDIMENT DEPOSITS FROM SILT FENCE AND STONE OUTLETS WHEN DEPOSITS REACH HALF CAPACITY, REPAIR ANY BREAKS IMMEDIATELY.
6. REPLACE GRAVEL CONSTRUCTION ENTRANCE AS NECESSARY.
7. CONTRACTOR WILL BE FINANCIALLY RESPONSIBLE FOR ANY AND ALL FINES LEVIED DUE TO NOT MAINTAINING PROPER EROSION CONTROL MEASURES AT ALL TIMES.
8. IS IS THE CONTRACTORS RESPONSIBILITY TO MAINTAIN STABILITY AND PREVENT EROSION IN ALL DITCHES/SWALES. UTILIZE RECP OR STONE LINERS AS NEEDED IF PERMANENT GROUND COVER WILL NOT BE INSTALLED IMMEDIATELY AFTER GRADING.

EROSION CONTROL CONSTRUCTION SEQUENCE

1. OBTAIN NECESSARY PERMITS FROM ALL REGULATORY AUTHORITIES. CONTRACTOR RESPONSIBLE FOR ALL DEMO PERMITS AS WELL AS WASTE OR BORROW SITE SELECTION AND PERMITTING.
2. CONTRACTOR SHALL LOCATE ALL UNDERGROUND UTILITIES PRIOR TO ANY EXCAVATION. SOFT DIG ALL UTILITIES WITHIN GRADING AREA TO IDENTIFY POTENTIAL CONFLICTS.
3. SCHEDULE PRE-CONSTRUCTION MEETING WITH WATAUGA COUNTY EROSION CONTROL PRIOR TO CONSTRUCTION.
4. STAKE-OUT ALL PHASE 1 EROSION CONTROL MEASURES PRIOR TO STARTING CONSTRUCTION.
5. MAINTAIN NPDES TEMPORARY SEEDING SCHEDULE (SHEET C001) FOR ALL EXPOSED SOILS FOR THE DURATION OF CONSTRUCTION.
6. INSTALL TEMPORARY GRAVEL CONSTRUCTION ENTRANCE TO PROVIDE ACCESS FROM DALE ADAMS ROAD. MAINTAIN GRAVEL CONSTRUCTION ENTRANCE TO PREVENT SEDIMENTATION ONTO PUBLIC ROAD UNTIL SITE IS STABILIZED.
7. PERFORM THE MINIMUM DEMO NECESSARY TO INSTALL THE PIPE NETWORK SEGMENTS INCLUDING INLET AND OUTLET PROTECTION NEEDED TO ESTABLISH BOTH CLEAN WATER DIVERSION PATHS THROUGH THE CONSTRUCTION AREA.
8. INSTALL SILT FENCE AND STONE OUTLET(S) AT INDICATED AREAS.
9. PROCEED WITH STREAM RESTORATION PORTION OF THE PROJECT ACCORDING TO PERMIT CONDITIONS INCLUDING BUT NOT LIMITED TO:
   - 9.1. NATIVE RIPARIAN SEED ONLY. NO FERTILIZER WITHIN TROUT BUFFER. 100% BIODEGRADABLE STABILIZATION MATTING MUST BE USED WITHIN THE TROUT BUFFER. TEMPORARY SEED MIX NOT SUITABLE FOR BUFFER PLANTINGS.
   - 9.2. CONTRACTOR SHALL CEASE WORK IMMEDIATELY IF STREAM TURBIDITY EXCEEDS 10 NTU.
   - 9.3. ALL WORK WITHIN TROUT BUFFER TO BE STABILIZED AT THE END OF EACH WORK DAY.
   - 9.4. WORK MUST BE PERFORMED DURING BASE FLOW CONDITIONS. NO WORK DURING OR IMMEDIATELY PRIOR TO EXPECTED PRECIPITATION.
   - 9.5. CONTRACTOR SHALL WORK FROM THE BANK TO THE MAXIMUM EXTENT POSSIBLE.
   - 9.6. CONTRACTOR SHALL CLEAN TRACKS OF ALL EQUIPMENT AT THE END OF EACH DAY ON HIGH GROUND OUTSIDE THE 25' STREAM BUFFER.
   - 9.7. ONLY MODERN EQUIPMENT IN WORKING ORDER SHALL BE USED.
   - 9.8. NO EQUIPMENT FUELING OR MAINTENANCE SHALL BE COMPLETED WITHIN THE 25' STREAM BUFFER.
10. INSTALL SKIMMER BASIN - 1 WITH FAIRCLOTH SKIMMER. SKIMMER BASIN - 1 TO REMAIN IN PLACE UNTIL ALL AREAS HAVE BEEN ADEQUATELY STABILIZED AND APPROVAL TO REMOVE MEASURE HAS BEEN RECEIVED BY WATAUGA COUNTY EROSION CONTROL.
11. REMOVE SURFACE ORGANICS AND OTHER UNUSABLE SOIL MATERIAL WITHIN THE PHASE 3 GRADING AREA TO AN APPROVED SITE.
12. BEGIN PHASE 3 GRADING AT THE DIRECTION OF THE GEOTECHNICAL ENGINEER TO ESTABLISH SUBGRADE ELEVATIONS.
13. DURING GRADING, INSTALL PIPE NETWORK WITH INLET AND OUTLET PROTECTIONS AND ALL UNDERGROUND UTILITIES INSIDE THE PHASE 3 GRADING AREA. ANY RUNOFF COLLECTED IN UTILITY TRENCHES MUST BE DEWATERED TO SKIMMER BASIN - 1 THROUGH AN EFFLUENT BAG.
14. WHEN SUBGRADE ELEVATIONS ARE ESTABLISHED, INSTALL STONE BASE IN HARDSCAPE AREAS AND SEEDING OR PERMANENT LANDSCAPING IN ALL OTHER AREAS TO PROTECT EXPOSED SOILS.
15. INSTALL SKIMMER BASIN - 2 WITH FAIRCLOTH SKIMMER. SKIMMER BASIN - 2 TO REMAIN IN PLACE UNTIL ALL AREAS HAVE BEEN ADEQUATELY STABILIZED AND APPROVAL TO REMOVE MEASURE HAS BEEN RECEIVED BY WATAUGA COUNTY ERCSION CONTROL.
16. REMOVE SURFACE ORGANICS AND OTHER UNUSABLE SOIL MATERIAL WITHIN THE PHASE 4 GRADING AREA TO AN APPROVED SITE.
17. BEGIN PHASE 4 GRADING AT THE DIRECTION OF THE GEOTECHNICAL ENGINEER TO ESTABLISH SUBGRADE ELEVATIONS.
18. DURING GRADING, INSTALL PIPE NETWORK WITH INLET AND OUTLET PROTECTIONS AND ALL UNDERGROUND UTILITIES INSIDE THE PHASE 4 GRADING AREA. ANY RUNOFF COLLECTED IN UTILITY TRENCHES MUST BE DEWATERED TO SKIMMER BASIN - 2 THROUGH AN EFFLUENT BAG.
19. WHEN SUBGRADE ELEVATIONS ARE ESTABLISHED, INSTALL STONE BASE IN HARDSCAPE AREAS AND SEEDING OR PERMANENT LANDSCAPING IN ALL OTHER AREAS TO PROTECT EXPOSED SOILS.
20. AFTER SITE STABILIZATION AND APPROVAL BY WATAUGA COUNTY EROSION CO NTROL, REMOVE SKIMMER BASINS TO COMPLETE FINE GRADING. ENSURE REMOVAL IS COMPLETED DURING A PERIOD WITH NO EXPECTED PRECIPITATION TO ELIMINATE SEDIMENT LOSS.
21. INSTALL REMAINING PERMANENT LANDSCAPING.
22. DO NOT REMOVE REMAINING EROSION CONTROL MEASURES UNTIL APPROVAL IS RECEIVED FROM WATAUGA COUNTY EROSION CONTROL.
23. AFTER FINAL MEASURES ARE REMOVED, COORDINATE CLOSEOUT INSPECTION WITH WATAUGA COUNTY EROSION CONTROL TO VERIFY SITE STABILIZATION.



VICINITY MAP (NTS)

LEGEND

- PROPERTY LINE
- EXISTING CONTOURS
- PROPOSED CONTOURS
- EX. OVERHEAD ELECTRIC
- SILT FENCE
- LIMITS OF DISTURBANCE
- RIPRAP INLET PROTECTION
- OUTLET PROTECTION
- HARDWARE CLOTH INLET PROTECTION
- STONE OUTLET

ANY OFF-SITE BORROW AND WASTE REQUIRED FOR THIS PROJECT MUST COME FROM A SITE WITH AN APPROVED EROSION CONTROL PLAN, A SITE REGULATED UNDER THE MINING ACT OF 1971, OR A LANDFILL REGULATED BY THE DIVISION OF SOLID WASTE MANAGEMENT. TRASH/DEBRIS FROM DEMOLITION ACTIVITIES OR GENERATED BY ANY ACTIVITIES ON SITE MUST BE DISPOSED OF AT A FACILITY REGULATED BY THE DIVISION OF SOLID WASTE MANAGEMENT OR PER DIVISION OF SOLID WASTE MANAGEMENT OR DIVISION OF WATER RESOURCES RULES AND REGULATIONS.

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STABILIZATION TIMEFRAMES

SITE AREA DESCRIPTION		STABILIZATION	TIMEFRAME EXCEPTIONS
	PERIMETER DIKES, SWALES, DITCHES, SLOPES	7 DAYS	NONE
	HIGH QUAILTY WATER (HQW) ZONES	7 DAYS	NONE
	SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS AREA ALLOWED.
	SLOPES 3:1 OR FLATTER	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50' LENGTH
	ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE, EXCEPT FOR PERIMETERS AND HQW ZONES

SEE SHEET C001 FOR COMPLETE NDPES PERMIT INFORMATION

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1605 CURTIS BRIDGE ROAD - SUITE 1
WILKESBORO, NC 28697
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SEALS

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL REVIEW VIRGIN C CHURCH

10/20/25

COVE CREEK PARK
SUGAR GROVE, NC

REVISIONS

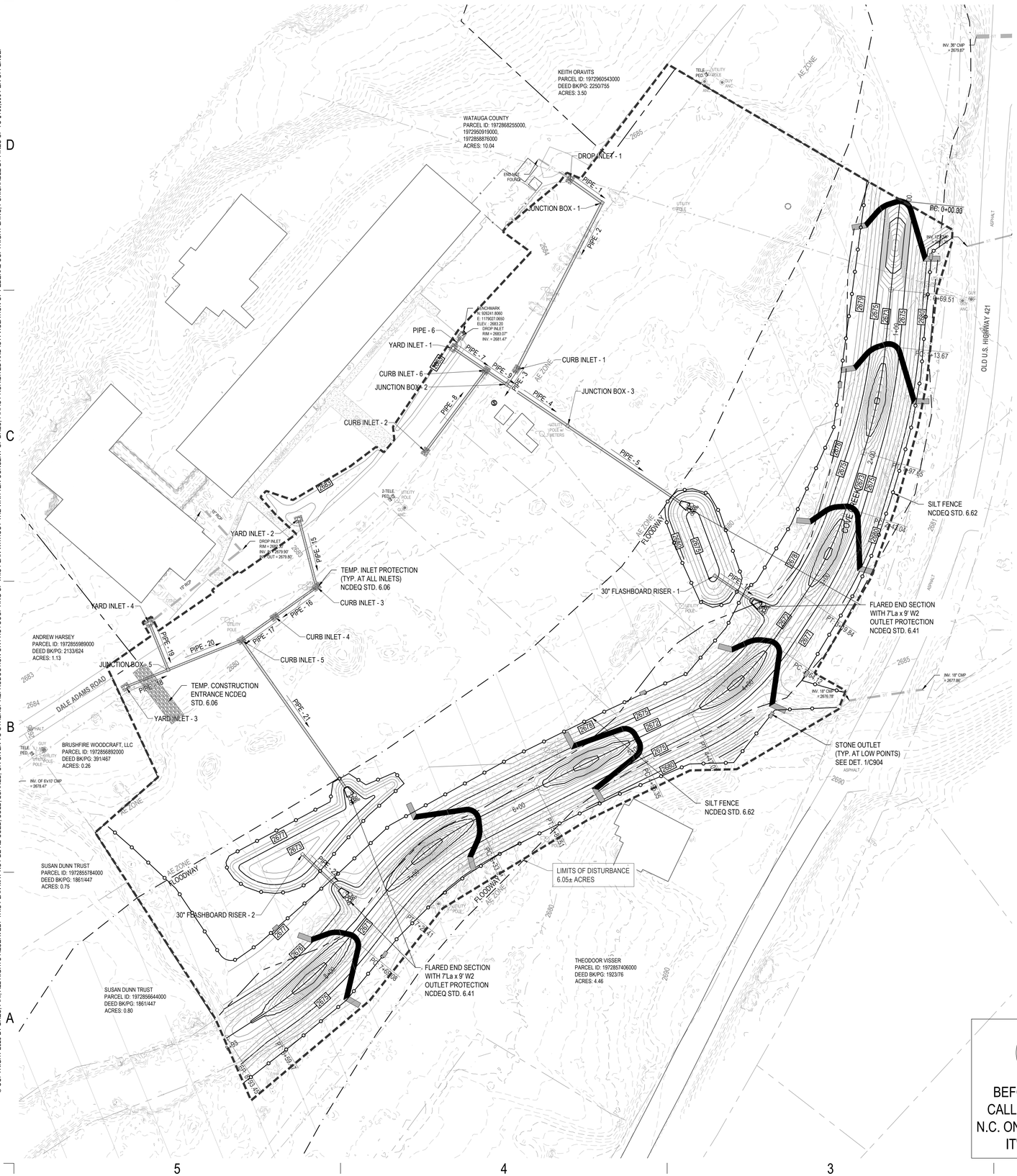
10/15/25 1 - ADDENDUM #1

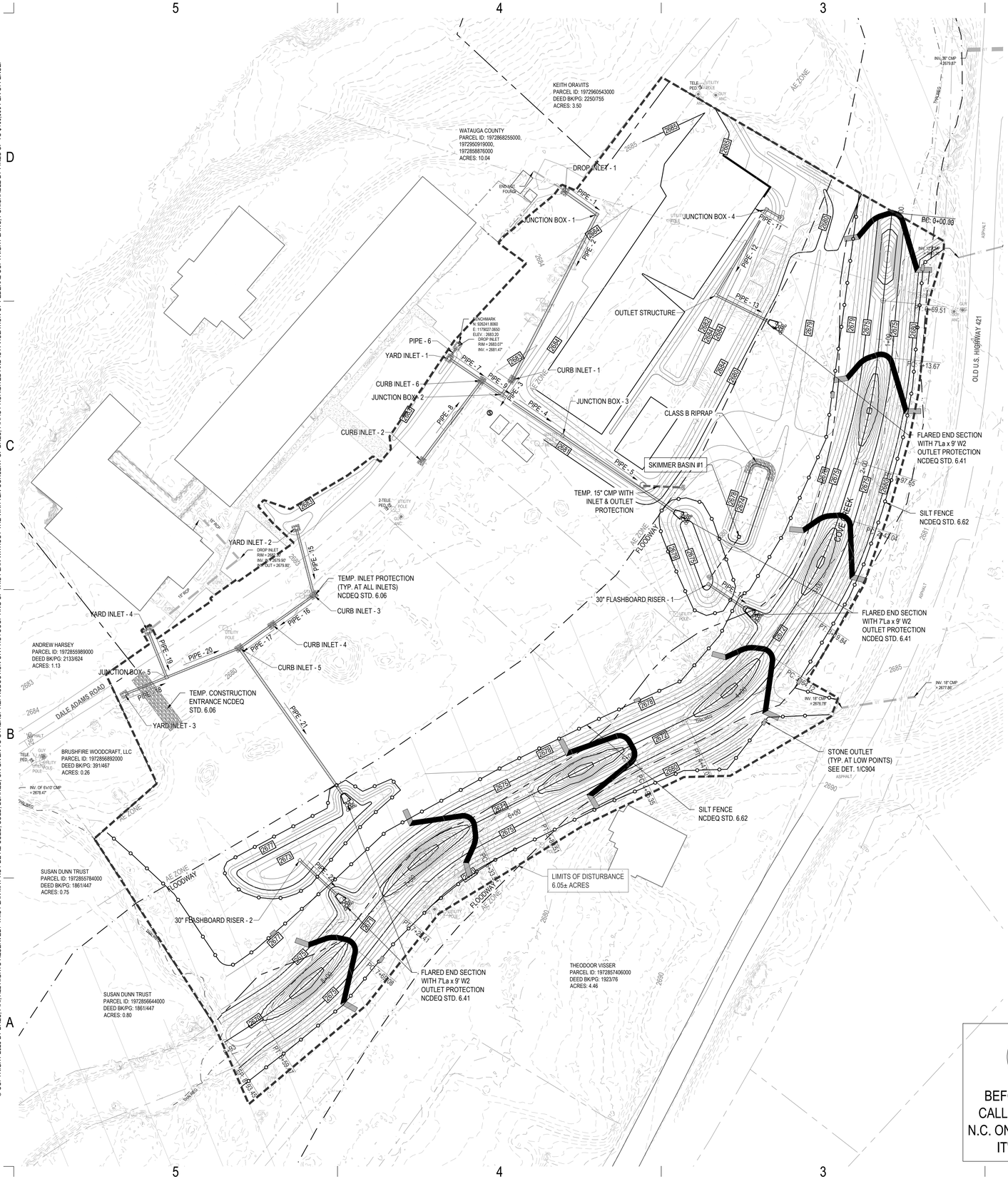
SHEET SIZE: 24"x36"
PROJECT NUMBER: 0980062025
DRAWN BY: J. EDWARDS
APPROVED BY: J.CHURCH

PHASE 1 ESC PLAN

C300

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KEITH ORAVITS
PARCEL ID: 1972960543000
DEED BK/PG: 2250/755
ACRES: 3.50
WATAUGA COUNTY
PARCEL ID: 1972868255000, 1972959919000, 1972858876000
ACRES: 10.04
ANDREW HARSEY
PARCEL ID: 1972855989000
DEED BK/PG: 2133/624
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BRUSHFIRE WOODCRAFT, LLC
PARCEL ID: 1972856892000
DEED BK/PG: 391/467
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PARCEL ID: 1972856644000
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ACRES: 0.80
THEODOOR VISSER
PARCEL ID: 1972857406000
DEED BK/PG: 1923/76
ACRES: 4.46
DALE ADAMS ROAD
OLD U.S. HIGHWAY 421
COVE CREEK
DROP INLET - 1
JUNCTION BOX - 1
JUNCTION BOX - 2
JUNCTION BOX - 3
JUNCTION BOX - 5
CURB INLET - 1
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30" FLASHBOARD RISER - 1
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TEMP. INLET PROTECTION (TYP. AT ALL INLETS) NCDEQ STD. 6.06
TEMP. CONSTRUCTION ENTRANCE NCDEQ STD. 6.06
FLARED END SECTION WITH 7'La x 9' W2 OUTLET PROTECTION NCDEQ STD. 6.41
SILT FENCE NCDEQ STD. 6.62
STONE OUTLET (TYP. AT LOW POINTS) SEE DET. 1/C904
LIMITS OF DISTURBANCE 6.05± ACRES
BENCHMARK #1 N: 926241.8060 E: 1179027.0650 ELEV.: 2683.20
DROP INLET RIM = 2683.07' INV. = 2681.47'
DROP INLET RIM = 2679.90' INV. IN = 2679.40' INV. OUT = 2679.80'
INV. OF 6'x10' CMP = 2678.47'
INV. 36" CMP = 2678.87'
INV. 18" CMP = 2677.86'
INV. 18" CMP = 2676.78'
PC: 0+00.88
PT: 1+13.67
PC: 1+69.51
PT: 2+97.65
PC: 3+04.84
PT: 3+39.84
PC: 3+46.04
PT: 4+48.06
PC: 4+54.17
PT: 5+49.17
AE ZONE
AE ZONE FLOODWAY
ASPHALT
UTILITY POLE
GUY ANC.
TELE PED.
2-TELE PEDS
UTILITY POLE w/ 3 METERS
10' RCD
15' RCD
2684
2685
2686
2687
2688
2689
2690
2691
2692
2693
2694
2695
2696
2697
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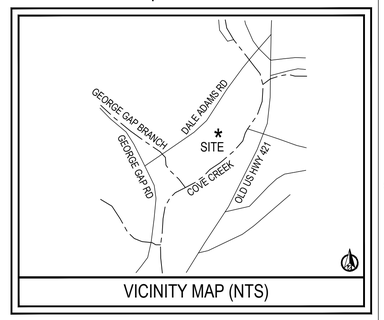
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2. ALL WORK IS TO BE IN ACCORDANCE WITH ALL STATE AND LOCAL REGULATIONS.
3. ALL PERMITS ARE TO BE OBTAINED BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION.
4. CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH ALL PERMIT CONDITIONS.
5. EXISTING UTILITIES ON SITE SHALL BE RELOCATED AS REQUIRED. CONTRACTOR SHALL PAY ALL COSTS ASSOCIATED WITH RELOCATION.
6. CONTRACTORS ARE TO FULLY ACQUAINT THEMSELVES WITH ALL UTILITIES WITHIN THE CITY AND STATE ROW AND WITHIN THE PROPERTY BOUNDARIES WHICH WILL REQUIRE RELOCATION. ALL COSTS ASSOCIATED WITH RELOCATION SHALL BE INCLUDED IN THE BASE BID.
7. ALL WORK PERFORMED WITHIN THE PUBLIC ROW SHALL BE PER DOT SPECS AND SHALL BE INSPECTED FOR COMPLIANCE BY STATE INSPECTORS AT THEIR DISCRETION.

MAINTENANCE PLAN

1. EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO ANY EXISTING BUILDING DEMOLITION.
2. CONTRACTOR IS RESPONSIBLE FOR ALL EROSION AND SEDIMENTATION CONTROL REQUIREMENTS AND SHALL COMPLY WITH THE LATEST EDITION OF THE NORTH CAROLINA EROSION AND SEDIMENTATION CONTROL MANUAL.
3. PER NPDES REQUIREMENTS, CHECK ALL EROSION AND SEDIMENTATION CONTROL DEVICES AND STORMWATER RUNOFF DISCHARGES FROM EACH OUTFALL SHOULD BE INSPECTED EVERY SEVEN DAYS AND WITHIN 24 HOURS AFTER ANY STORM EVENT. A RAINFALL GAUGE SHALL BE KEPT ON SITE, AND A RECORD OF RAINFALL AMOUNTS AND DATES MUST BE RECORDED AND KEPT ON SITE. RECORDS OF INSPECTIONS OF DEVICES AND OUTFALLS SHOULD BE KEPT AND VISIBLE SEDIMENTATION OUTSIDE THE DISTURBED LIMITS SHOULD BE NOTED. ANY ACTIONS TO CONTROL FUTURE RELEASES AND CLEANUP OF SEDIMENT MUST BE RECORDED. A SAMPLE LOG FOR RECORD KEEPING IS AVAILABLE FROM NCDEQ DIVISION OF WATER QUALITY, STORMWATER AND GENERAL PERMITS UNIT.
4. CHECK ALL EROSION CONTROL DEVICES WEEKLY AND AFTER EACH RUNOFF PRODUCING STORM EVENT AND MAKE ANY NECESSARY REPAIRS AS NEEDED TO ENSURE DEVICES ARE FUNCTIONING AS INTENDED.
5. REMOVE SEDIMENT DEPOSITS FROM SILT FENCE AND STONE OUTLETS WHEN DEPOSITS REACH HALF CAPACITY, REPAIR ANY BREAKS IMMEDIATELY.
6. REPLACE GRAVEL CONSTRUCTION ENTRANCE AS NECESSARY.
7. CONTRACTOR WILL BE FINANCIALLY RESPONSIBLE FOR ANY AND ALL FINES LEVIED DUE TO NOT MAINTAINING PROPER EROSION CONTROL MEASURES AT ALL TIMES.
8. IS IS THE CONTRACTORS RESPONSIBILITY TO MAINTAIN STABILITY AND PREVENT EROSION IN ALL DITCHES/SWALES. UTILIZE RECP OR STONE LINERS AS NEEDED IF PERMANENT GROUND COVER WILL NOT BE INSTALLED IMMEDIATELY AFTER GRADING.

EROSION CONTROL CONSTRUCTION SEQUENCE

1. OBTAIN NECESSARY PERMITS FROM ALL REGULATORY AUTHORITIES. CONTRACTOR RESPONSIBLE FOR ALL DEMO PERMITS AS WELL AS WASTE OR BORROW SITE SELECTION AND PERMITTING.
2. CONTRACTOR SHALL LOCATE ALL UNDERGROUND UTILITIES PRIOR TO ANY EXCAVATION. SOFT DIG ALL UTILITIES WITHIN GRADING AREA TO IDENTIFY POTENTIAL CONFLICTS.
3. SCHEDULE PRE-CONSTRUCTION MEETING WITH WATAUGA COUNTY EROSION CONTROL PRIOR TO CONSTRUCTION.
4. STAKE-OUT ALL PHASE 1 EROSION CONTROL MEASURES PRIOR TO STARTING CONSTRUCTION.
5. MAINTAIN NPDES TEMPORARY SEEDING SCHEDULE (SHEET C001) FOR ALL EXPOSED SOILS FOR THE DURATION OF CONSTRUCTION.
6. INSTALL TEMPORARY GRAVEL CONSTRUCTION ENTRANCE TO PROVIDE ACCESS FROM DALE ADAMS ROAD. MAINTAIN GRAVEL CONSTRUCTION ENTRANCE TO PREVENT SEDIMENTATION ONTO PUBLIC ROAD UNTIL SITE IS STABILIZED.
7. PERFORM THE MINIMUM DEMO NECESSARY TO INSTALL THE PIPE NETWORK SEGMENTS INCLUDING INLET AND OUTLET PROTECTION NEEDED TO ESTABLISH BOTH CLEAN WATER DIVERSION PATHS THROUGH THE CONSTRUCTION AREA.
8. INSTALL SILT FENCE AND STONE OUTLET(S) AT INDICATED AREAS.
9. PROCEED WITH STREAM RESTORATION PORTION OF THE PROJECT ACCORDING TO PERMIT CONDITIONS INCLUDING BUT NOT LIMITED TO:
   - 9.1. NATIVE RIPARIAN SEED ONLY. NO FERTILIZER WITHIN TROUT BUFFER. 100% BIODEGRADABLE STABILIZATION MATTING MUST BE USED WITHIN THE TROUT BUFFER. TEMPORARY SEED MIX NOT SUITABLE FOR BUFFER PLANTINGS.
   - 9.2. CONTRACTOR SHALL CEASE WORK IMMEDIATELY IF STREAM TURBIDITY EXCEEDS 10 NTU.
   - 9.3. ALL WORK WITHIN TROUT BUFFER TO BE STABILIZED AT THE END OF EACH WORK DAY.
   - 9.4. WORK MUST BE PERFORMED DURING BASE FLOW CONDITIONS. NO WORK DURING OR IMMEDIATELY PRIOR TO EXPECTED PRECIPITATION.
   - 9.5. CONTRACTOR SHALL WORK FROM THE BANK TO THE MAXIMUM EXTENT POSSIBLE.
   - 9.6. CONTRACTOR SHALL CLEAN TRACKS OF ALL EQUIPMENT AT THE END OF EACH DAY ON HIGH GROUND OUTSIDE THE 25' STREAM BUFFER.
   - 9.7. ONLY MODERN EQUIPMENT IN WORKING ORDER SHALL BE USED.
   - 9.8. NO EQUIPMENT FUELING OR MAINTENANCE SHALL BE COMPLETED WITHIN THE 25' STREAM BUFFER.
10. INSTALL SKIMMER BASIN - 1 WITH FAIRCLOTH SKIMMER. SKIMMER BASIN - 1 TO REMAIN IN PLACE UNTIL ALL AREAS HAVE BEEN ADEQUATELY STABILIZED AND APPROVAL TO REMOVE MEASURE HAS BEEN RECEIVED BY WATAUGA COUNTY EROSION CONTROL.
11. REMOVE SURFACE ORGANICS AND OTHER UNUSABLE SOIL MATERIAL WITHIN THE PHASE 3 GRADING AREA TO AN APPROVED SITE.
12. BEGIN PHASE 3 GRADING AT THE DIRECTION OF THE GEOTECHNICAL ENGINEER TO ESTABLISH SUBGRADE ELEVATIONS.
13. DURING GRADING, INSTALL PIPE NETWORK WITH INLET AND OUTLET PROTECTIONS AND ALL UNDERGROUND UTILITIES INSIDE THE PHASE 3 GRADING AREA. ANY RUNOFF COLLECTED IN UTILITY TRENCHES MUST BE DEWATERED TO SKIMMER BASIN - 1 THROUGH AN EFFLUENT BAG.
14. WHEN SUBGRADE ELEVATIONS ARE ESTABLISHED, INSTALL STONE BASE IN HARDSCAPE AREAS AND SEEDING OR PERMANENT LANDSCAPING IN ALL OTHER AREAS TO PROTECT EXPOSED SOILS.
15. INSTALL SKIMMER BASIN - 2 WITH FAIRCLOTH SKIMMER. SKIMMER BASIN - 2 TO REMAIN IN PLACE UNTIL ALL AREAS HAVE BEEN ADEQUATELY STABILIZED AND APPROVAL TO REMOVE MEASURE HAS BEEN RECEIVED BY WATAUGA COUNTY EROSION CONTROL.
16. REMOVE SURFACE ORGANICS AND OTHER UNUSABLE SOIL MATERIAL WITHIN THE PHASE 4 GRADING AREA TO AN APPROVED SITE.
17. BEGIN PHASE 4 GRADING AT THE DIRECTION OF THE GEOTECHNICAL ENGINEER TO ESTABLISH SUBGRADE ELEVATIONS.
18. DURING GRADING, INSTALL PIPE NETWORK WITH INLET AND OUTLET PROTECTIONS AND ALL UNDERGROUND UTILITIES INSIDE THE PHASE 4 GRADING AREA. ANY RUNOFF COLLECTED IN UTILITY TRENCHES MUST BE DEWATERED TO SKIMMER BASIN - 2 THROUGH AN EFFLUENT BAG.
19. WHEN SUBGRADE ELEVATIONS ARE ESTABLISHED, INSTALL STONE BASE IN HARDSCAPE AREAS AND SEEDING OR PERMANENT LANDSCAPING IN ALL OTHER AREAS TO PROTECT EXPOSED SOILS.
20. AFTER SITE STABILIZATION AND APPROVAL BY WATAUGA COUNTY EROSION CO NTROL, REMOVE SKIMMER BASINS TO COMPLETE FINE GRADING. ENSURE REMOVAL IS COMPLETED DURING A PERIOD WITH NO EXPECTED PRECIPITATION TO ELIMINATE SEDIMENT LOSS.
21. INSTALL REMAINING PERMANENT LANDSCAPING.
22. DO NOT REMOVE REMAINING EROSION CONTROL MEASURES UNTIL APPROVAL IS RECEIVED FROM WATAUGA COUNTY EROSION CONTROL.
23. AFTER FINAL MEASURES ARE REMOVED, COORDINATE CLOSEOUT INSPECTION WITH WATAUGA COUNTY EROSION CONTROL TO VERIFY SITE STABILIZATION.



VICINITY MAP (NTS)

LEGEND

- PROPERTY LINE
- EXISTING CONTOURS
- PROPOSED CONTOURS
- EX. OVERHEAD ELECTRIC
- SILT FENCE
- LIMITS OF DISTURBANCE
- RIPRAP INLET PROTECTION
- OUTLET PROTECTION
- HARDWARE CLOTH INLET PROTECTION
- STONE OUTLET

SKIMMER BASIN #1 CALCULATIONS

1. DA = 1.16 ACRES
2. DU = 1.16 ACRES
3. t_c = 5 minutes
4. $i = 7.08 \frac{in}{hr}$
5. $C = 0.6$
6. $Q_{25} = CiDA = (0.6)(7.08)(1.16) = 4.93\ ft^3/s$
7. $SA_{req} = 325Q_{25} = (325)(4.93) = 1,603\ ft^2$
8. $V_{req} = 1800DU = (1800)(1.16) = 2,088\ ft^3$
9. $L:W = 3.0$
10. $depth = 3.0$
11. $W = 24\ ft \rightarrow L = 72\ ft$
12. $SA_{prov} = 1,728\ ft^2$
13. $V_{prov} = 3,600\ ft^3$
14. $L_{WEIR} = 10'$
15. $V_{req} = 2,088\ ft^3$
16. $T_{drawdn} = 3$ days
17. $Q_{drawdn} = V_{@\ top\ 2}\ /\ T_{drawdn} = 696\ ft^3/d$
18. Faircloth Skimmer = 1.5" w/ 1.0" Knockout Orifice

ANY OFF-SITE BORROW AND WASTE REQUIRED FOR THIS PROJECT MUST COME FROM A SITE WITH AN APPROVED EROSION CONTROL PLAN, A SITE REGULATED UNDER THE MINING ACT OF 1971, OR A LANDFILL REGULATED BY THE DIVISION OF SOLID WASTE MANAGEMENT. TRASH/DEBRIS FROM DEMOLITION ACTIVITIES OR GENERATED BY ANY ACTIVITIES ON SITE MUST BE DISPOSED OF AT A FACILITY REGULATED BY THE DIVISION OF SOLID WASTE MANAGEMENT OR PER DIVISION OF SOLID WASTE MANAGEMENT OR DIVISION OF WATER RESOURCES RULES AND REGULATIONS.

BEFORE YOU DIG!
CALL 1-800-632-4949
N.C. ONE-CALL CENTER
IT'S THE LAW!

STABILIZATION TIMEFRAMES

SITE AREA DESCRIPTION		STABILIZATION	TIMEFRAME EXCEPTIONS
	PERIMETER DIKES, SWALES, DITCHES, SLOPES	7 DAYS	NONE
	HIGH QUAILTY WATER (HQW) ZONES	7 DAYS	NONE
	SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS AREA ALLOWED.
	SLOPES 3:1 OR FLATTER	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50' LENGTH
	ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE, EXCEPT FOR PERIMETERS AND HQW ZONES

SEE SHEET C001 FOR COMPLETE NDPES PERMIT INFORMATION

40 20 0 40 80

BREC
A Stratus Team Company
1605 CURTIS BRIDGE ROAD - SUITE 1
WILKESBORO, NC 28697
PHONE : 336.844.4088
www.brec.biz

SEALS

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 049241 REVIEW VIRGIN C. CHURCH

10/20/25

COVE CREEK PARK
SUGAR GROVE, NC

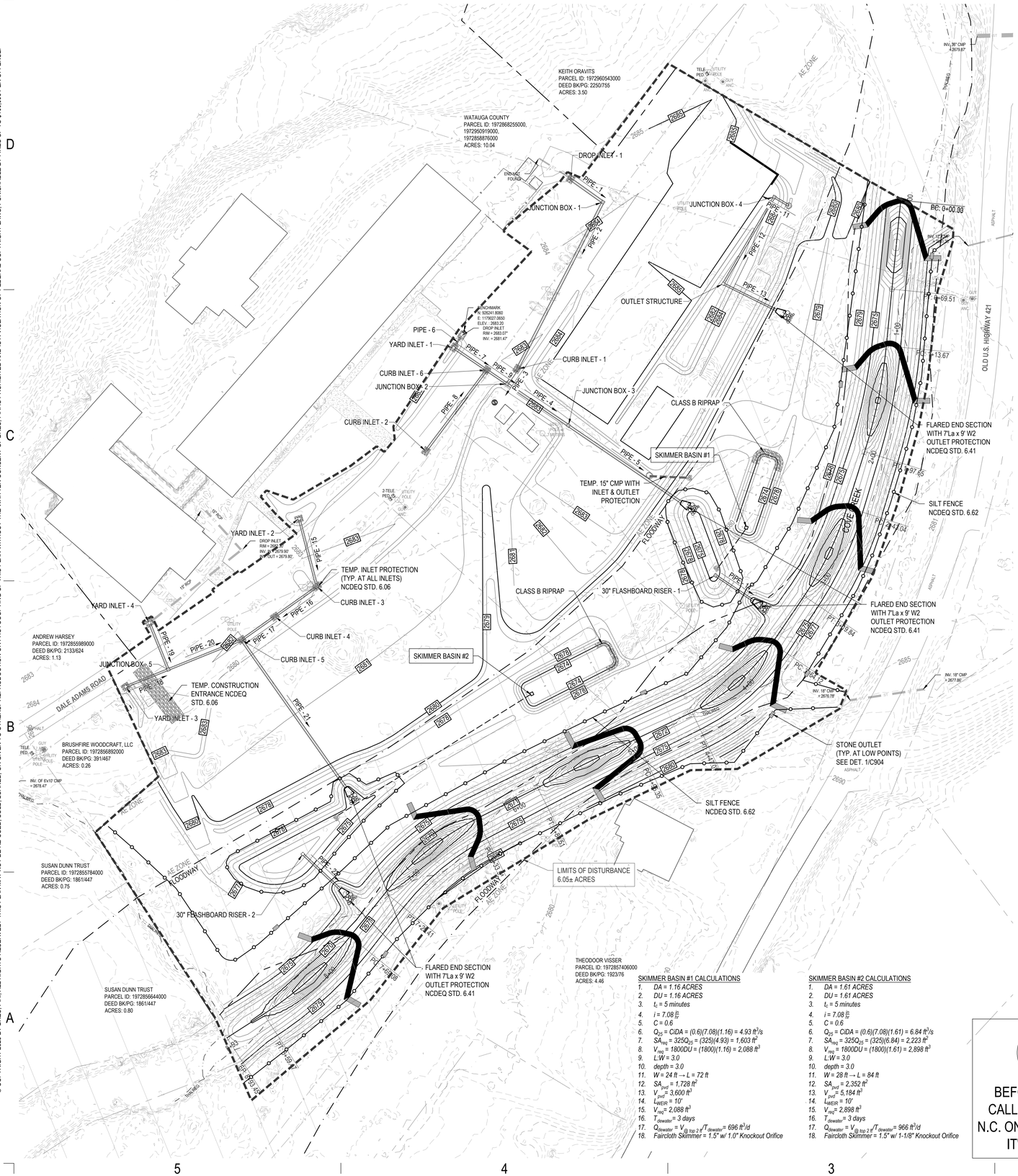
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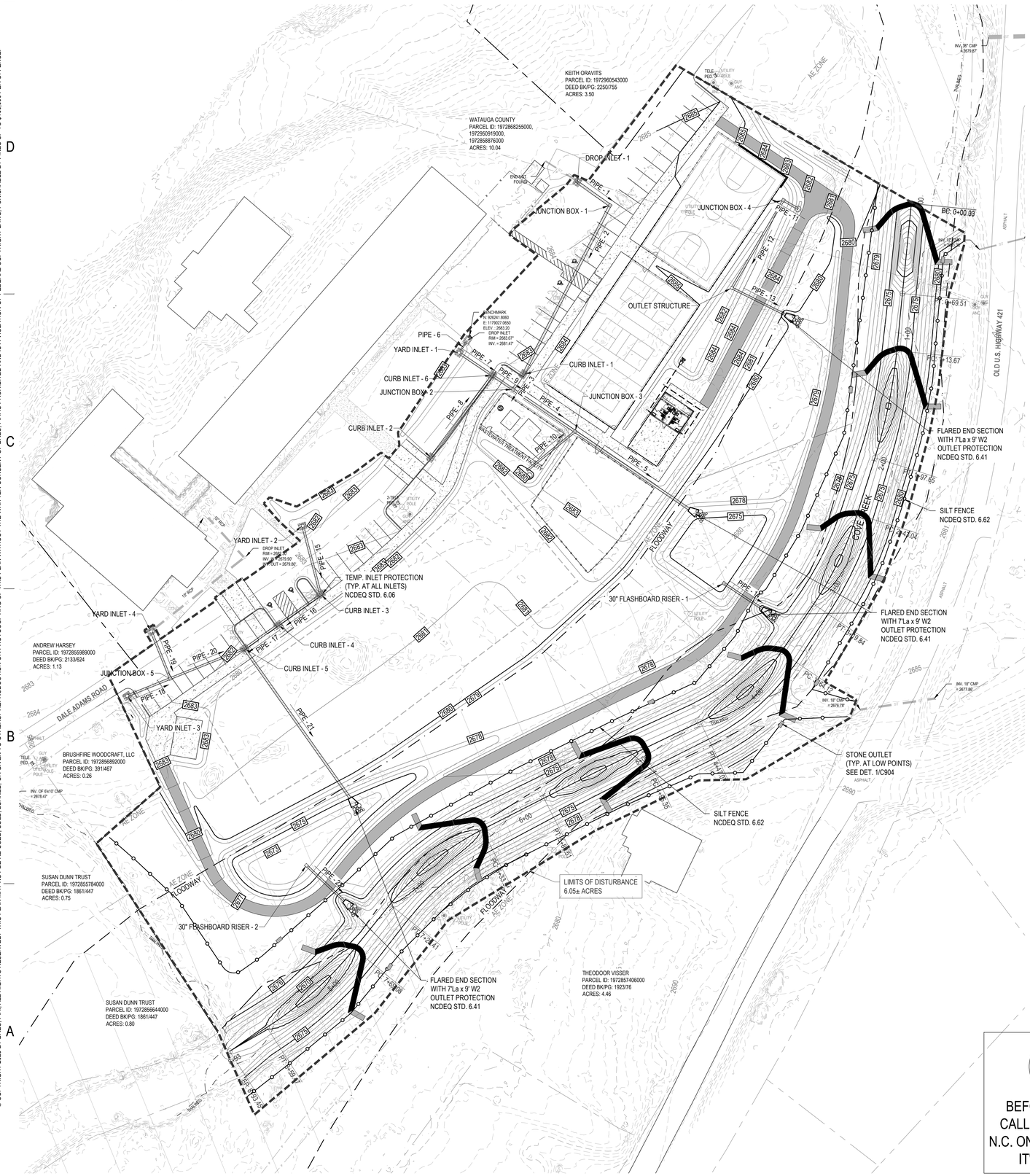
10/15/25	1 - ADDENDUM #1

SHEET SIZE: 24"x36"
PROJECT NUMBER: 0980062025
DRAWN BY: J. EDWARDS
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PHASE 3 ESC PLAN

C302


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PARCEL ID: 1972960543000
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ACRES: 3.50
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CURB INLET - 4
CURB INLET - 5
CURB INLET - 6
OUTLET STRUCTURE
CLASS B RIPRAP
SKIMMER BASIN #1
SKIMMER BASIN #2
30" FLASHBOARD RISER - 1
30" FLASHBOARD RISER - 2
TEMP. 15" CMP WITH INLET & OUTLET PROTECTION
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STONE OUTLET
(TYP. AT LOW POINTS)
SEE DET. 1/C904
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6.05± ACRES
WASTEWATER TREATMENT PLANT
AE ZONE
FLOODWAY
AE ZONE
PC: 0+00.88
PT: 0+13.67
PC: 0+69.51
PT: 0+97.65
PC: 1+09.84
PT: 1+23.04
PC: 1+49.84
PT: 1+63.04
PC: 1+89.84
PT: 2+03.04
PC: 2+29.84
PT: 2+43.04
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PC:

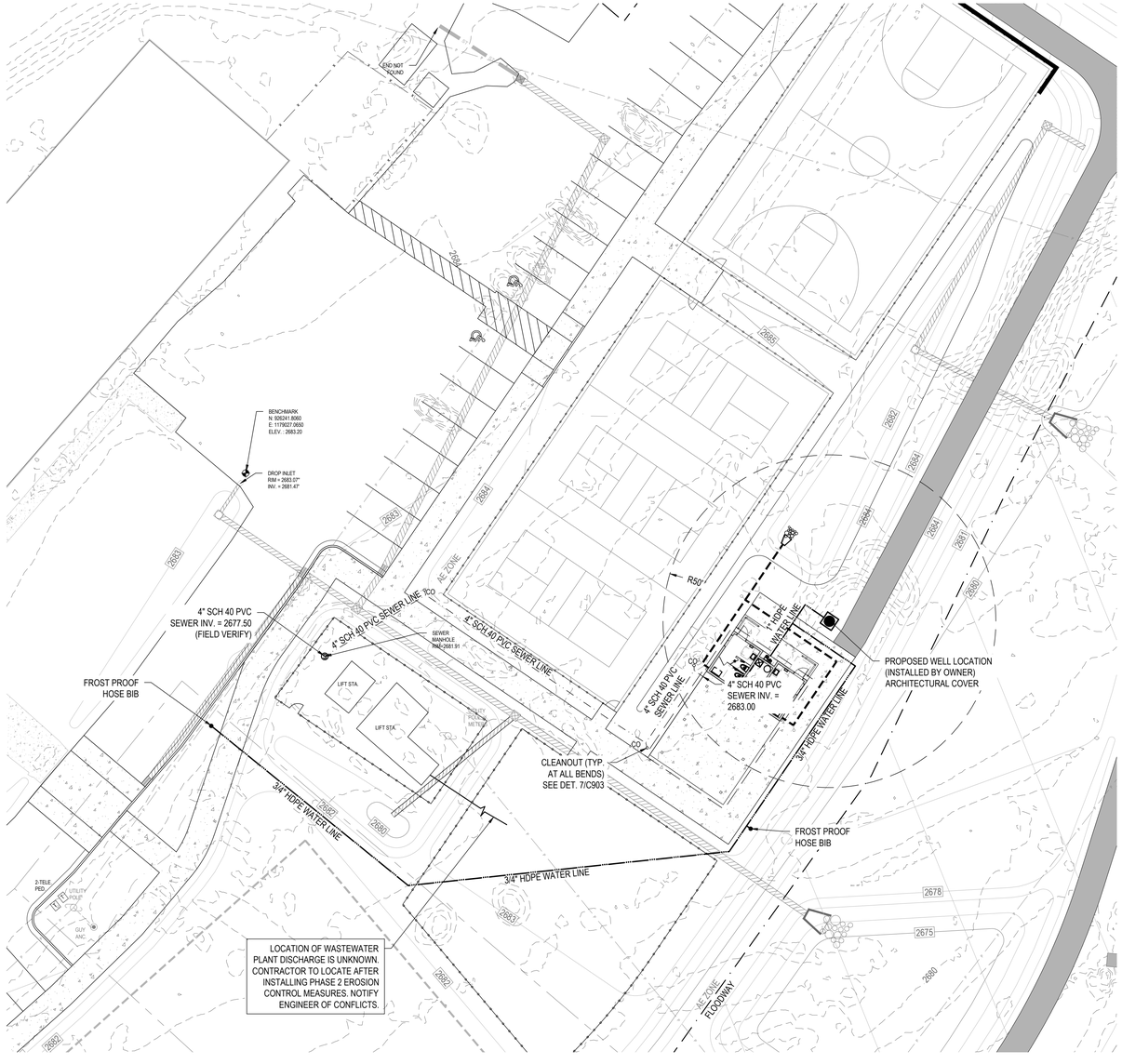
GENERAL NOTES

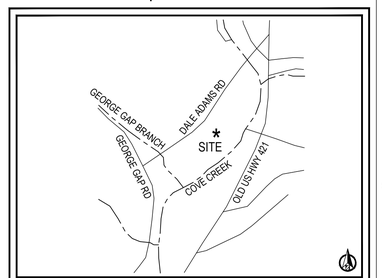
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ON-SITE UTILITY NOTES

1. FOR GENERAL SITE WORK, SEE SHEET C100.
2. ALL WATER DISTRIBUTION PIPE SHALL BE DUCTILE IRON WATER PIPE CONFORMING TO ALL STATE AND LOCAL STANDARDS.
3. ALL DUCTILE IRON PIPE SHALL BE PRESSURE CLASS 50 OR GREATER.
4. ALL SANITARY SEWER PIPE SHALL BE SDR 35 PVC PIPE FOR GRAVITY FLOW AND SCH 40 FOR PRESSURED FLOW (BEDDED IN STONE) CONFORMING TO ALL STATE AND LOCAL STANDARDS.
5. FITTINGS 4" AND LARGER SHALL BE DUCTILE IRON (PUSH-ON TYPE JOINT) CONFORMING TO ANSI AND AWWA STANDARD SPECIFICATIONS.
6. PIPE AND FITTINGS 3" AND SMALLER ARE TO BE EITHER PVC SCHEDULE 40 WITH SOLVENT WELD JOINTS OR SOFT K-COPPER. GATE VALVES SHALL BE TELESCOPE TYPES. ALL VALVES MUST BE MUELLER, M&H OR KENNEDY AND BE RATED 175 PSI WORKING PRESSURE AND 300 PSI HYDROSTATIC TEST PRESSURE. ALL VALVES WILL BE OPEN LEFT AND BE CAST OR DUCTILE IRON BODIED.
7. ALL WATER MAINS SHALL HAVE A MINIMUM COVER OF 3' ABOVE THE TOP OF THE PIPE.
8. THE MINIMUM HORIZONTAL SEPARATION BETWEEN THE CLOSEST TWO POINTS OF THE WATER AND SEWER LINE IS TEN FEET (10'). THE MINIMUM VERTICAL SEPARATION BETWEEN THE CLOSEST TWO POINTS OF THE WATER AND SEWER LINE IS EIGHTEEN INCHES (18").
9. THRUST BLOCKS SHALL BE PROVIDED AT ALL BENDS.
10. DIMENSIONS SHOWN ARE CENTERLINE OF PIPE OR FITTINGS.
11. ALL SPRINKLER, DOMESTIC, AND SANITARY LEADS TO THE BUILDING SHALL END 5' FROM THE EDGE OF BUILDING AS SHOWN ON PLAN AND SHALL BE PROVIDED WITH A TEMPORARY PLUG AT END (FOR OTHERS TO REMOVE AND EXTEND AS NECESSARY).
12. ALL WATER MAINS SHALL BE HYDROSTATICALLY TESTED AND DISINFECTED BEFORE ACCEPTANCE. SEE SITE WORK SPECIFICATIONS.
13. ALL GATE VALVES/BOXES SHALL BE TO TOWN/CITY STANDARDS.
14. ALL TRENCHING, PIPE LAYING, AND BACKFILLING SHALL BE IN ACCORDANCE WITH FEDERAL OSHA REGULATIONS.
15. SEE SITE SPECIFICATIONS FOR BACKFILLING AND COMPACTION REQUIREMENTS.
16. SITE CONTRACTOR SHALL HAVE APPROVAL OF ALL GOVERNING AGENCIES HAVING JURISDICTION OVER THIS SYSTEM PRIOR TO COMPLETION.
17. INSTALLATION OF THIS PLAN SHALL BE DONE IN STRICT ACCORDANCE WITH SITE WORK SPECIFICATIONS.
18. SEE ELECTRICAL PLAN FOR SITE LIGHTING LAYOUT.
19. SEE 'M' SHEETS FOR CONTINUATION OF FACILITIES INTO AND OUT OF THE BUILDING.
20. CONTRACTOR IS RESPONSIBLE FOR COORDINATION WITH LOCAL POWER PROVIDER FOR THE LOCATION OF THE TRANSFORMER AND ANY NECESSARY CONDUITS.
21. CONTRACTOR IS RESPONSIBLE FOR COORDINATION WITH LOCAL TELECOMMUNICATION PROVIDER THE LOCATION OF ANY PEDESTALS AND NECESSARY CONDUITS.

LOCAL UTILITY COMPANIES		
UTILITY	COMPANY NAME	PHONE
WATER	APPALACHIAN DISTRICT HEALTH DEPARTMENT	(828) 264-4995
POWER	BREMCO	(800) 451-5474
SANITARY SEWER	WATAUGA COUNTY - ROBERT MARSH	(828) 268-6230





VICINITY MAP (NTS)

LEGEND

- PROPERTY LINE
- 100 EXISTING CONTOURS
- 100 PROPOSED CONTOURS
- P EX. OVERHEAD ELECTRIC

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WILKESBORO, NC 28697
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SEALS

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL REVIEW JOSHUA C. CHURCH

10/20/25

COVE CREEK PARK
SUGAR GROVE, NC

REVISIONS

10/15/25	1 - ADDENDUM #1

SHEET SIZE:	24"x36"
PROJECT NUMBER:	0980062025
DRAWN BY:	J. EDWARDS
APPROVED BY:	J.CHURCH

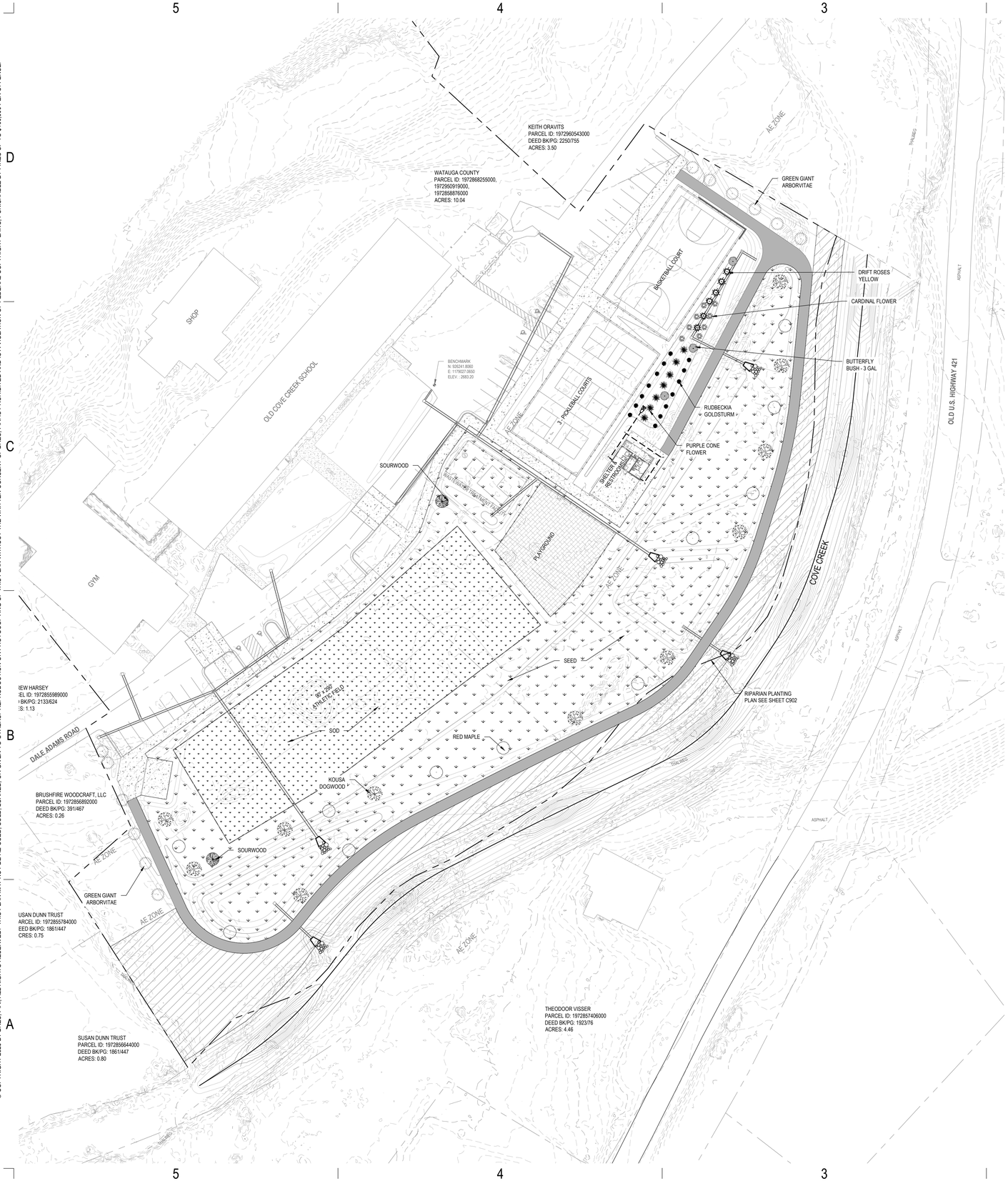
UTILITY PLAN

C400

20 10 0 20 40

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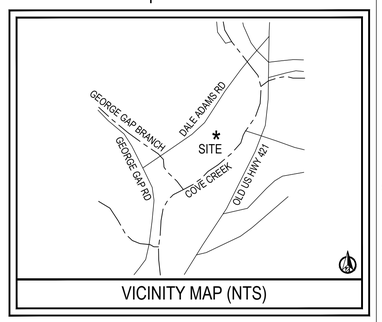


LANDSCAPING NOTES

1. LANDSCAPING MUST BE INSTALLED ACCORDING TO THE APPROVED SITE PLAN AND INSPECTED PRIOR TO RECEIVING A CERTIFICATE OF COMPLIANCE. ALL PLANT MATERIAL SHALL MEET OR EXCEED SIZE AND SHAPE RELATIONSHIPS SPECIFIED IN THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK PUBLISHED BYE THE AMERICAN ASSOCIATION OF NURSERYMEN. BEGINNING JANUARY 1, 2008, INSTALLATION OF PLANT MATERIAL MUST BE INSTALLED BY A LANDSCAPE CONTRACTOR LICENSED TO PRACTICE IN THE STATE OF NORTH CAROLINA. ALL SIZES REFER TO SIZE AT TIME OF PLANTING. VEGETATION SHALL BE PLANTED TO ENSURE THE BEST CHANCE OF SURVIVAL AND TO REDUCE THE POTENTIAL EXPENSE OF REPLACING DAMAGED PLANT MATERIAL.
2. CALIPER OF TRUNK OF ALL NEW PLANTED TREES SHALL BE TAKEN SIX INCHES ABOVE GROUND UP TO INCLUDING FOUR INCH CALIPER AND TWELVE INCHES ABOVE THE GROUND FOR LARGER SIZES. SELDOM ARE TREE TRUNKS PERFECTLY ROUND. CALIPER MEASUREMENTS MAY BE TAKEN WITH 'PINCER' TYPE CALIPER, OR DIAMETER TAPE.
3. ALL PLANT MATERIAL TO BE INSTALLED BY A LANDSCAPE CONTRACTOR LICENSED TO PRACTICE IN THE STATE OF NORTH CAROLINA.

LANDSCAPE PLANTING LEGEND

SYMBOL	QTY.	SCIENTIFIC NAME	COMMON NAME	SIZE AT PLANTING	CATEGORY
	12	Thuja 'green giant'	GREEN GIANT ARBORVITAE	6' HEIGHT/B&B	TREE
	11	Cornus kousa	KOUSA DOGWOOD	6' HEIGHT/B&B	TREE
	11	Acer rubrum	RED MAPLE	6' HEIGHT/B&B	TREE
	2	Oxydendrum arboreum	SOURWOOD	6' HEIGHT/B&B	TREE
	3	Buddleja	BUTTERFLY BUSH	3 GAL	SHRUB
	6	Rosa hybrida 'drift'	DRIFT ROSES (YELLOW)	3 GAL	SHRUB
	8	Lobelia cardinalis	CARDINAL FLOWER	1 GAL	PLANT
	7	Echinacea purpurea	PURPLE CONE FLOWER	1GAL	PLANT
	14	Rudbeckia goldsturm	BLACK-EYED SUSAN	1 GAL	PLANT
* MAINTAIN BY PRUNING TO MAX HEIGHT OR 15' (ANY TREE IN DUKE ENERGY R.O.W.)					
ALL TREES TO HAVE A MINIMUM OF 5' MULCH RING					



VICINITY MAP (NTS)

LANDSCAPE PLANTING LEGEND

	FESCUE SOD
	FESCUE SEED
	RIPARIAN PLANTING
	PLAYGROUND RUBBER MULCH



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WILKESBORO, NC 28697
PHONE : 336.844.4088
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SEALS

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REVIEW
ENGINEER
VIRGIN C. CHURCH

10/20/25

COVE CREEK PARK
SUGAR GROVE, NC

REVISIONS

10/15/25 1 - ADDENDUM #1

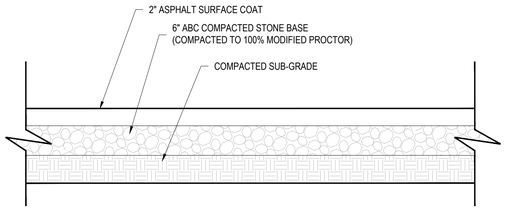
SHEET SIZE: 24"x36"
PROJECT NUMBER: 0980062025
DRAWN BY: R.WALKER
APPROVED BY: D.GODDARD

LANDSCAPING PLAN

G100

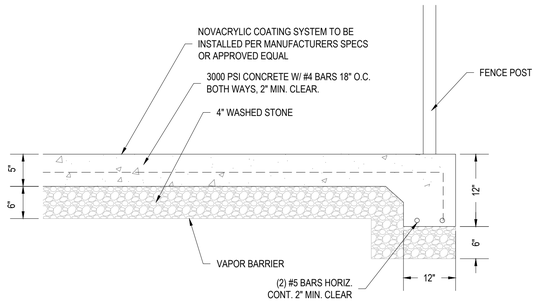
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1 C900 STANDARD ASPHALT PAVING

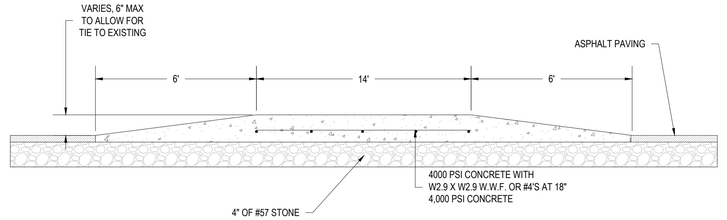


GENERAL NOTES:
1. VERIFY EXACT PAVING DESIGN WITH GEOTECHNICAL ENGINEER FOR PROJECT

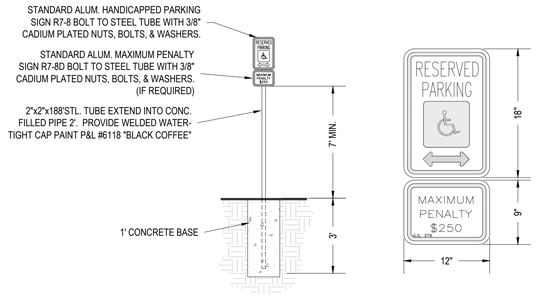
2 C900 OUTDOOR RECREATIONAL COURT



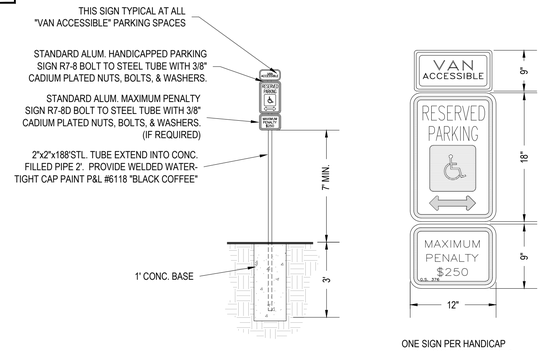
3 C900 RAISED CONCRETE CROSSING



4 C900 HANDICAPPED PARKING SIGN

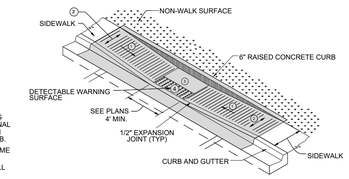


5 C900 VAN ACCESSIBLE PARKING SIGN



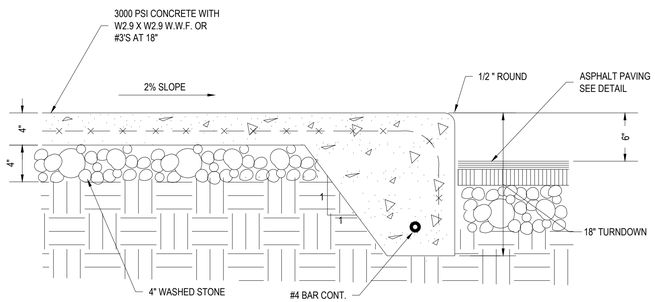
ONE SIGN PER HANDICAP PARKING SPACE/ WHERE 2 SPACES FACE EACH OTHER, ONE POST SHALL BE USED WITH SIGNAGE ON EACH SIDE.

6 C900 ADA RAMP

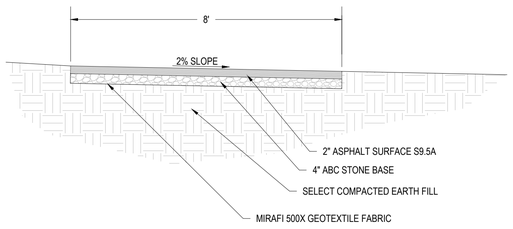


1. 8.33% (12:1) MAX RAMP SLOPE
2. CROSS SLOPE: 2.00%
3. CURB RAMPS REQUIRE A (4'-0") MINIMUM LANDING WITH A MAXIMUM CROSS SLOPE AND LONGITUDINAL SLOPE OF 2.00% WHERE PEDESTRIANS PERFORM TURNING MANEUVERS. SLOPE TO DRAIN TO CURB.
4. RAMPS AND DOMES SHALL BE INSTALLED THE SAME WIDTH AS THE SIDEWALK.
5. IF LENGTH EXCEEDS 5', TRUNCATED DOMES SHALL BE INSTALLED ALONG THE BACK OF THE CURB COVERING THE FULL WIDTH OF THE RAMP.

7 C900 SIDEWALK/CURB SECTION



8 C900 TYPICAL MULTI-USE-PATH SECTION



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A Stratus Team Company
1605 CURTIS BRIDGE ROAD - SUITE 1
WILKESBORO, NC 28697
PHONE : 336.844.4088
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JOSHUA C. CHURCH

10/20/25

COVE CREEK PARK
SUGAR GROVE, NC

REVISIONS

10/15/25	1 - ADDENDUM #1

SHEET SIZE:	24"x36"
PROJECT NUMBER:	0980062025
DRAWN BY:	J. EDWARDS
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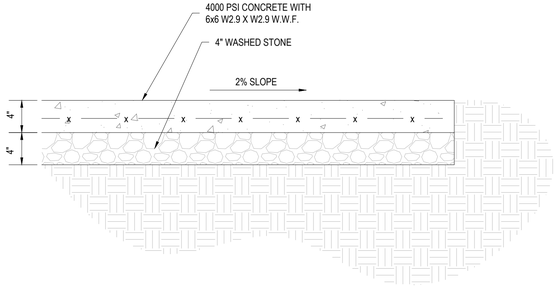
DETAILS

C900

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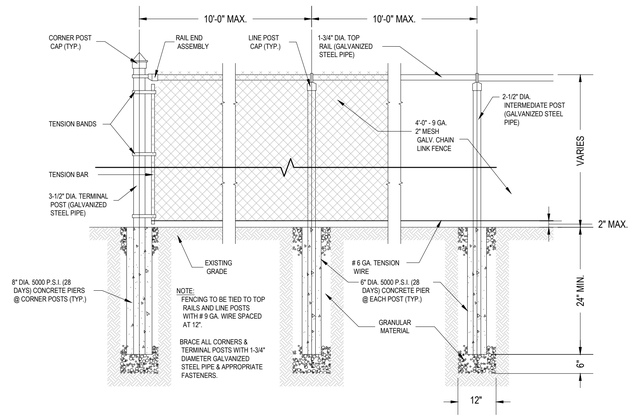
1 C901

CONCRETE PAD



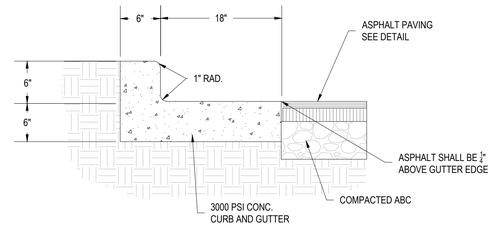
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CHAIN LINK FENCING



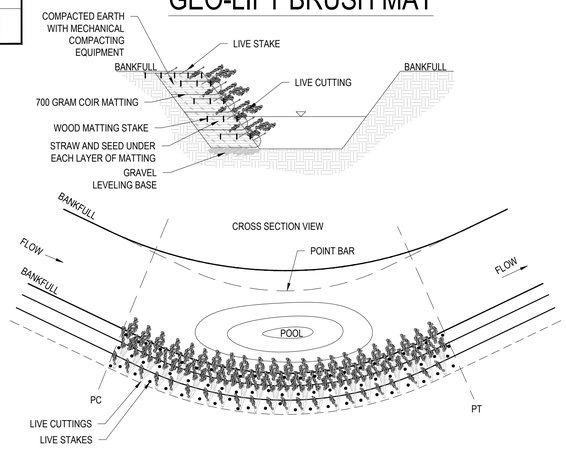
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CURB AND GUTTER



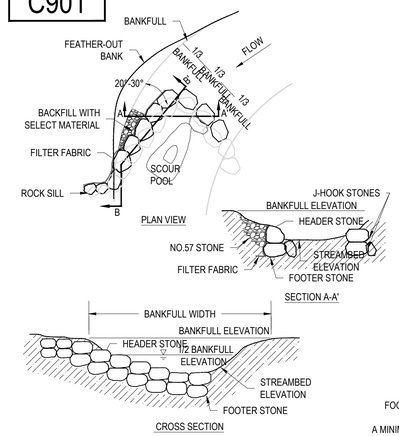
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GEO-LIFT BRUSH MAT



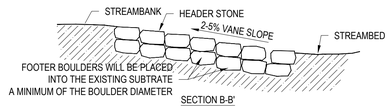
5 C901

ROCK J-HOOK VANE



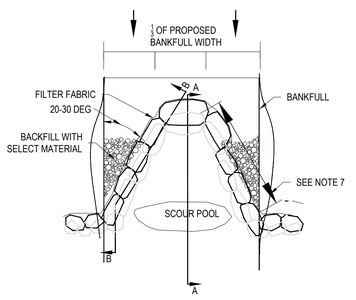
GENERAL NOTES:

1. ALL STONES ARE TO BE STRUCTURE STONE.
2. GAPS BETWEEN BOULDERS SHALL BE MINIMIZED BY FITTING BOULDERS TOGETHER, PLUGGING WITH STRUCTURE STONE CLASS A AND SELECT MATERIAL AND LINING WITH FILTER FABRIC.
3. DIMENSIONS AND SLOPES MAYBE ADJUSTED TO FIT BY THE ENGINEER.
4. A DOUBLE FOOTER BOULDER SHALL BE UTILIZED IN SAND BED MATERIAL.
5. VANE ARM SHALL TIE INTO HALFWAY BETWEEN THE CHANNEL INVERT AND BANKFULL ELEVATIONS. THE VANE ARMS SHALL RISE AT 2-5% FROM THE CHANNEL INVERT AT AN ANGLE OF 15-30 DEG. FROM THE ADJACENT TANGENT LINE. THE VANE ARM SHALL CONTINUE UP TO THE BANKFULL ELEVATION BUT THE ARM'S SLOPE MAY BE INCREASED TO GREATER THAN 5% AT THE DIRECTION OF THE DESIGNER. ADDITIONALLY, THE VANE ARM'S ANGLE OF DEPARTURE MAY BE ADJUSTED TO 90 DEG TO THE FLOW DIRECTION AT THE DIRECTION OF THE DESIGNER.
6. THE CONTRACTOR WILL BE REQUIRED TO FIT BOULDERS.
7. BOULDERS SHALL BE NATIVE STONE OR SHOT ROCK, CUBICAL OR RECTANGULAR IN NATURE.
8. FILTER FABRIC SHALL BE PLACED ON THE UPSTREAM SIDE OF THE VANE STRUCTURE TO PREVENT WASHOUT OF SEDIMENT THROUGH BOULDER GAPS. FILTER FABRIC SHALL EXTEND FROM THE BOTTOM OF THE FOOTER BOULDER TO THE FINISHED GRADE ELEVATION AND SHALL BE PLACED THE ENTIRE LENGTH OF THE STRUCTURE.
9. DIRECT FLOW AWAY FROM STRUCTURE USING BED MATERIAL SO THAT NEW SOILS HAS MINIMUM CONTACT WITH LIVE WATER.



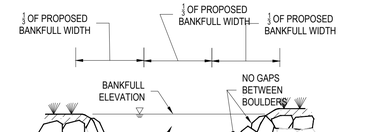
6 C901

SINGLE STEP ROCK CROSS VANE



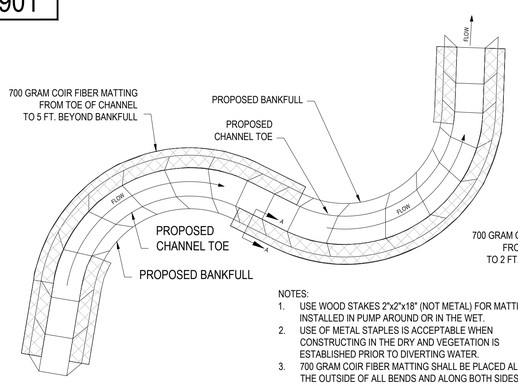
GENERAL NOTES:

1. ALL STONES ARE TO BE STRUCTURE STONE.
2. GAPS BETWEEN BOULDERS SHALL BE MINIMIZED BY FITTING BOULDERS TOGETHER AND PLUGGING WITH STRUCTURE STONE CLASS A AND SELECT MATERIAL OR CHINKING STONE APPROVED BY DESIGN ENGINEER, AND LINING WITH FILTER FABRIC.
3. DIMENSIONS AND SLOPES MAY BE ADJUSTED TO FIT BY THE DESIGN ENGINEER.
4. CONTRACTOR WILL BE REQUIRED TO FIT BOULDERS TIGHTLY.
5. FOOTER BOULDERS AND VANE BOULDERS SHALL BE NATIVE STONE OR SHOT ROCK, CUBICAL OR RECTANGULAR IN NATURE.
6. SLOPE OF VANE FROM CENTERLINE TO THE TOP OF THE VANE ARM SHALL BE 2-5%.
7. THERE SHALL BE NO DROP GREATER THAN 6 INCHES.
8. THE ELEVATION OF EACH GRADE CONTROL STRUCTURE SHOULD BE EQUAL TO OR GREATER THAN THE ELEVATION OF THE TOP OF THE FOOTER ROCKS DIRECTLY UPSTREAM.
9. FILTER FABRIC SHALL BE PLACED ON THE UPSTREAM SIDE OF THE STRUCTURE TO PREVENT WASHOUT OF SEDIMENT THROUGH BOULDER GAPS. FILTER FABRIC SHALL EXTEND FROM THE BOTTOM OF THE FOOTER BOULDER TO THE FINISHED GRADE ELEVATION AND SHALL BE PLACED THE ENTIRE LENGTH OF THE STRUCTURE.
10. DIRECT FLOW AWAY FROM STRUCTURE USING BED MATERIAL SO THAT NEW SOILS HAS MINIMUM CONTACT WITH LIVE WATER.



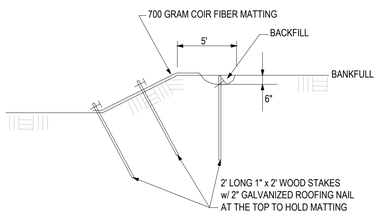
7 C901

TYPICAL MATTING LOCATION DETAIL

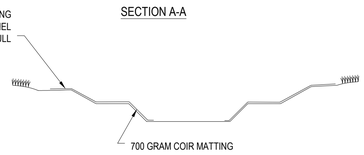


NOTES:

1. USE WOOD STAKES 2"x2"x18" (NOT METAL) FOR MATTING INSTALLED IN PUMP AROUND OR IN THE WET.
2. USE OF METAL STAPLES IS ACCEPTABLE WHEN CONSTRUCTING IN THE DRY AND VEGETATION IS ESTABLISHED PRIOR TO DIVERTING WATER.
3. 700 GRAM COIR FIBER MATTING SHALL BE PLACED ALONG THE OUTSIDE OF ALL BENDS AND ALONG BOTH SIDES OF THE CHANNEL IN TANGENT AREAS.
4. STRAW AND SEED SHALL BE PLACED UNDER THE 700 GRAM COIR FIBER MATTING TO AID SEED GERMINATION.

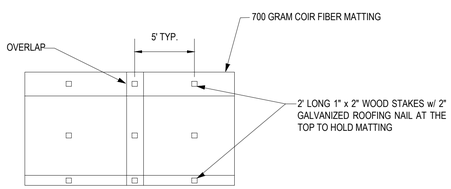


SECTION A-A

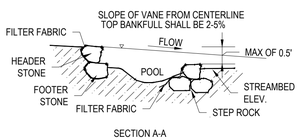


CROSS SECTION

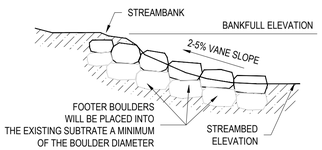
ROCK CONSTRUCTED RIFFLE - SECTION B-B'



MATTING STAKING VIEW



SECTION A-A



SECTION B-B

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1605 CURTIS BRIDGE ROAD - SUITE 1
WILKESBORO, NC 28697
PHONE : 336.844.4088
www.brec.biz

SEALS

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 041 REVIEW JOSHUA C. CHURCH

10/20/25

COVE CREEK PARK
SUGAR GROVE, NC

REVISIONS

10/15/25 1 - ADDENDUM #1

SHEET SIZE: 24"x36"
PROJECT NUMBER: 0980062025
DRAWN BY: J. EDWARDS
APPROVED BY: J.CHURCH

DETAILS

C901

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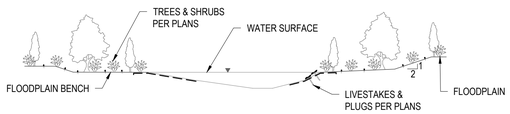
RIPARIAN PLANTING PLAN

BARE ROOTS WILL BE SELECTED FROM THE NATIVE VEGETATION SPECIES LISTED BELOW. TREES SHOULD BE PLANTED AT A DENSITY SUFFICIENT TO PROVIDE 320 TREES PER ACRE AT MATURITY. TO ACHIEVE THIS DENSITY, APPROXIMATELY 436 (10'x10' SPACING) TO 681 (8'x8' SPACING) TREES PER ACRE SHOULD BE PLANTED INITIALLY. SHRUBS SHOULD BE PLANTED AT A DENSITY SUFFICIENT TO PROVIDE 1200 SHRUBS PER ACRE. NO MORE THAN 20% OF ANY SPECIES SHALL BE USED. PLUGS SHALL BE USED AT THE SLOPE TOES AS NEEDED FOR STABILITY AND HABITAT.

WOODY VEGETATION NATIVE TO WESTERN NORTH CAROLINA

COMMON NAME	SCIENTIFIC NAME
SHRUBS	
*BUTTONBUSH	CEPHALANTHUS OCCIDENTALIS
AMERICAN WITCH HAZEL	HAMAMELIS VIRGINIANA
*TAG ALDER	ALNUS SERRULATA
*CAROLINA WILLOW	SALIX CAROLINIANA
*ELDERBERRY	SAMBUCUS CANADENSIS
RED CHOKEBERRY	ARONIA ARBUTIFOLIA*
*SILKY DOGWOOD	CORNUS AMOMUIN
*SILKY WILLOW	SALIX SERICEA
WINTERBERRY	ILEX VERTICILLATA
*NINE BARK	PHYSOCARPUS
TREES	
*/**BLACK WILLOW	SALIX NIGRA
**RED MAPLE	ACER RUBRUM
**RIVER BIRCH	BETULA NIGRA
**SYCAMORE	PLANTANUS OCCIDENTALIS

*SPECIES TO USE FOR LIVESTAKES
**TREES



RIPARIAN SEEDING SCHEDULE

* FOR USE WITHIN 25' RIPARIAN BUFFER. SEE E&SC SEEDING SCHEDULE FOR NON-BUFFER SEEDING SPECS.

SEEDING MIXTURE

SPECIES	% COMPOSTIION
PANICUM VIRGATUM (SWITCHGRASS	10
PANICUM CLANDESTINUM (DEER TONGUE)	10
JUNCUS EFFUSUS (SOFT RUSH)	10
CAREX VULPINOIDEA (FOX SEDGE)	10
SORGHASTRUM NUTANS (INDIAN GRASS)	10
CHASMANTHIUM LATIFOLIUM (RIVER OATS)	10
ELYMUS HYSTRIX (BOTTLEBRUSH GRASS)	10
VERNONIA GIGANTEA (GIANT IRONWEED)	5
RUBECKIA HIRTA (BLACK EYED SUSAN)	5
EUPATORIUM FISTULOSUM (JOE PYE WEED)	5
RHUS TYPHINA (STAGHORN SUMAC)	5
VERBENA HASTATA (BLUE VERVAIN)	5
PENSTEMON DIGITALIS (TALL WHITE BEARD TONGUE)	5

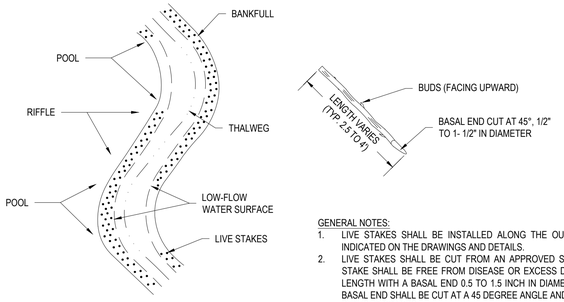
APPLICATION:
APPLY AT A RATE OF 15LBS/ACRE.

SOIL AMENDMENTS:
APPLY LIME AND FERTILIZER ACCORDING TO SOIL TESTS OR APPLY 4000 LB/ACRE GROUND AGRICULTURAL LIMESTONE AND 1000 LB/ACRE 5-10-10 FERTILIZER.

MAINTENANCE:
REFERTILIZE THE SECOND YEAR UNLESS GROWTH IS FULLY ADEQUATE. RESEED, FERTILIZE, AND MULCH DAMAGED AREAS IMMEDIATELY.

1
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DORMANT LIVE STAKE



GENERAL NOTES:
1. LIVE STAKES SHALL BE INSTALLED ALONG THE OUTER MEANDER BEND WHERE INDICATED ON THE DRAWINGS AND DETAILS.
2. LIVE STAKES SHALL BE CUT FROM AN APPROVED SOURCE WITH A SHARP TOOL. STAKE SHALL BE FREE FROM DISEASE OR EXCESS DEAD TWIGS, 2.5 TO 4 FEET IN LENGTH WITH A BASAL END 0.5 TO 1.5 INCH IN DIAMETER. PRIOR TO INSTALLATION BASAL END SHALL BE CUT AT A 45 DEGREE ANGLE AND THE END SHALL BE CUT FLAT WITHOUT CRACKS.
3. LIVE STAKES SHALL BE INSTALLED BY GENTLY TAMPING INTO THE SOIL LEAVING 4 TO 8 INCHES EXPOSED. STAKES SHALL BE PLACED IN A RANDOM PATTERN AT A RATE OF 1 LIVE STAKE PER SQUARE YARD ALONG BANKS.
4. LIVE STAKES SHALL BE INSTALLED WHEN THEY ARE DORMANT, WHICH TYPICALLY OCCURS BETWEEN NOVEMBER 15 AND MARCH 15.

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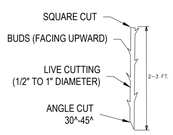
LIVESTAKE/BAREROOT PLANTING

PLANTING NOTES:

PLANTING BAG
DURING PLANTING, SEEDLINGS SHALL BE KEPT IN A MOIST CANVAS BAG OR SIMILAR CONTAINER TO PREVENT THE ROOT SYSTEMS FROM DRYING.

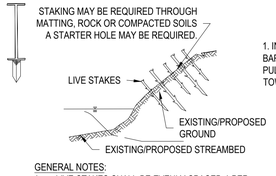
KBC PLANTING BAR
PLANTING BAR SHALL HAVE A BLADE WITH A TRIANGULAR CROSS SECTION, AND SHALL BE 12IN. LONG, 4IN. WIDE AND 1IN. THICK AT CENTER.

ROOT PRUNING
ALL SEEDLINGS SHALL BE ROOT PRUNED, IF NECESSARY, SO THAT NO ROOTS EXTEND MORE THAN 10 INCHES (10IN.) BELOW THE ROOT COLLAR.



LIVE STAKE

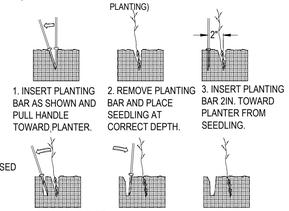




GENERAL NOTES:
1. LIVE STAKES SHALL BE EVENLY SPACED 1 PER SQ.YD.
2. LIVE STAKES SHALL BE DRIVEN UNTIL APPROXIMATELY OF LIVE STAKE IS WITHIN GROUND.
3. IF STARTER HOLE IS NEEDED, MINIMIZE AIR POCKET.
4. UTILIZE ALL ON SITE TRANSPLANT MATERIALS MADE AVAILABLE BY THE OWNER. ONCE SOURCE OF TRANSPLANT MATERIAL HAS BEEN HARVESTED, THEN UTILIZE LIVE STAKING.

BANK STABILIZATION WITH LIVE STAKES

DIBBLE PLANTING METHOD
USING THE KBC PLANTING BAR
(FOR FLOODPLAIN BUFFER PLANTING AND UPLAND BUFFER PLANTING)



1. INSERT PLANTING BAR AS SHOWN AND PULL HANDLE TOWARD PLANTER.
2. REMOVE PLANTING BAR AND PLACE SEEDLING AT CORRECT DEPTH.
3. INSERT PLANTING BAR 2IN. TOWARD PLANTER FROM SEEDLING.
4. PULL HANDLE OF BAR TOWARD PLANTER, FIRMING SOIL AT BOTTOM.
5. PUSH HANDLE FORWARD FIRMING SOIL AT TOP.
6. LEAVE COMPACTION HOLE OPEN. WATER THOROUGHLY.

GENERAL NOTES:
1. TREE REFORESTATION SHALL BE PLANTED 6' TO 10' ON CENTER, RANDOM SPACING, AVERAGING 8' ON CENTER, APPROXIMATELY 436-681 PLANTS PER ACRE.
2. OTHER PLANTING METHOD CAN BE USED WITH THE PERMISSION OF THE PLANTING SUPERVISOR.

BREC
A Stratus Team Company
1605 CURTIS BRIDGE ROAD - SUITE 1
WILKESBORO, NC 28697
PHONE : 336.844.4088
www.brec.biz

SEALS

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 049241 REVIEW JOSHUA C. CHURCH

10/20/25

COVE CREEK PARK
SUGAR GROVE, NC

REVISIONS

10/15/25	1 - ADDENDUM #1

SHEET SIZE:	24"x36"
PROJECT NUMBER:	0980062025
DRAWN BY:	J. EDWARDS
APPROVED BY:	J.CHURCH

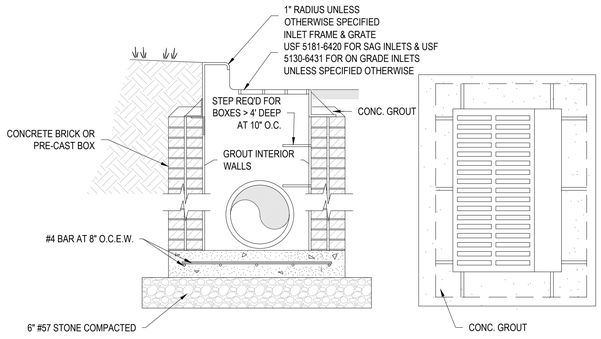
DETAILS

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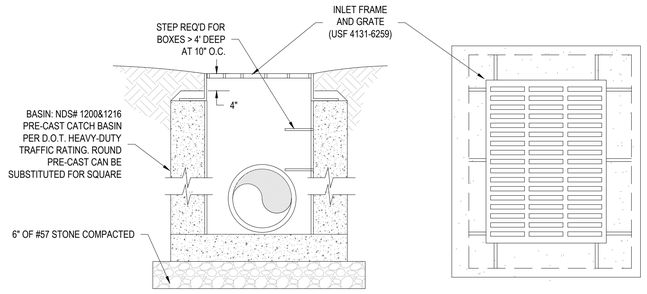
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CURB INLET



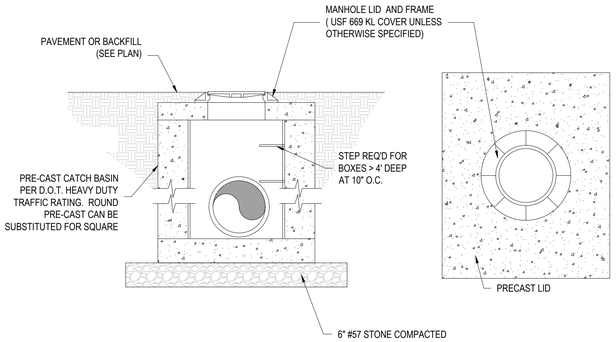
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YARD INLET



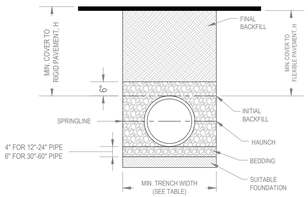
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JUNCTION BOX



4
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N-12 HDPE STORM TRENCH INSTALLATION



NOTES:

1. ALL PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS", LATEST ADDITION
2. MEASURES SHOULD BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL, WHEN REQUIRED.
3. FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER, AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.
4. BEDDING: SUITABLE MATERIAL SHALL BE CLASS I, II OR III. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. UNLESS OTHERWISE NOTED BY THE ENGINEER, MINIMUM BEDDING THICKNESS SHALL BE 4" (100mm) FOR 4"-24" (100mm-600mm); 6" (150mm) FOR 30"-60" (750mm-900mm).
5. INITIAL BACKFILL: SUITABLE MATERIAL SHALL BE CLASS I, II OR III IN THE PIPE ZONE EXTENDING NOT LESS THAN 6" ABOVE CROWN OF PIPE. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. MATERIAL SHALL BE INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.
6. MINIMUM COVER: MINIMUM COVER, H, IN NON-TRAFFIC APPLICATIONS (GRASS OR LANDSCAPE AREAS) IS 12" FROM THE TOP OF PIPE TO GROUND SURFACE. ADDITIONAL COVER MAY BE REQUIRED TO PREVENT FLOATION. FOR TRAFFIC APPLICATIONS, MINIMUM COVER, H, IS 12" UP TO 48" DIAMETER PIPE AND 24" OF COVER FOR 54"-60" DIAMETER PIPE, MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TO TOP OF RIGID PAVEMENT.

RECOMMENDED MINIMUM TRENCH WIDTHS

PIPE DIAM.	MIN. TRENCH WIDTH
4"	21"
6"	23"
8"	26"
10"	28"
12"	30"
15"	34"
18"	39"
24"	48"
30"	56"
36"	64"
42"	72"
48"	80"
54"	88"
60"	96"

MINIMUM RECOMMENDED COVER BASED ON VECHICLE LOADING CONDITIONS

PIPE DIAM.	SURFACE LIVE LOADING CONDITION	
	H-25	HEAVY CONSTRUCTION (75T AXLE LOAD) *
12" - 48"	12"	48"
54" - 60"	24"	60"

* VEHICLES IN EXCESS OF 75T MAY REQUIRE ADDITIONAL COVER

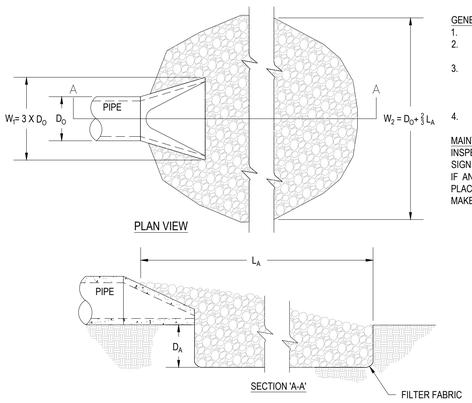
MINIMUM RECOMMENDED COVER BASED ON RAILWAY LOADING CONDITIONS

PIPE DIAM.	COOPER E-80**
UP TO 24"	24"
30"-36"	36"
42"-60"	48"

** COVER IS MEASURED FROM TOP OF PIPE TO BOTTOM OF RAILWAY TIE.
*** E-80 COVER REQUIREMENTS, ARE ONLY APPLICABLE TO ASTM F 2306 PIPE.

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STANDARD PIPE OUTLET TO WELL-DEFINED CHANNEL



GENERAL NOTES:

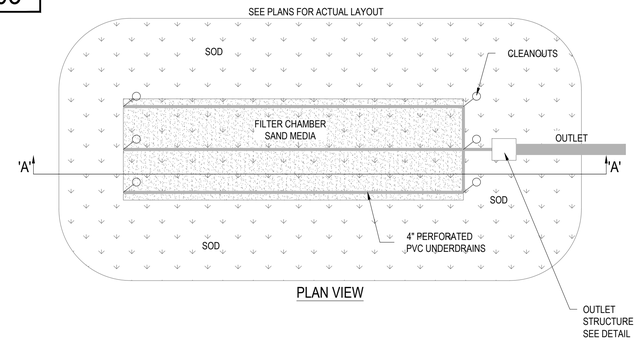
1. L_A= THE LENGTH OF THE RIPRAP APRON.
2. D_O = 1.5 TIMES THE MAXIMUM STONE DIAMETER BUT NOT LESS THAN 6" (INCHES).
3. IN A WELL-DEFINED CHANNEL EXTEND THE APRON UP THE CHANNEL BANKS TO AN ELEVATION OF 6" (INCHES) ABOVE THE MAXIMUM TAILWATER DEPTH OR TO THE TOP OF THE BANK, WHICHEVER IS LESS.
4. A FILTER BLANKET OR FILTER FABRIC SHOULD BE INSTALLED BETWEEN THE RIPRAP AND SOIL FOUNDATION.

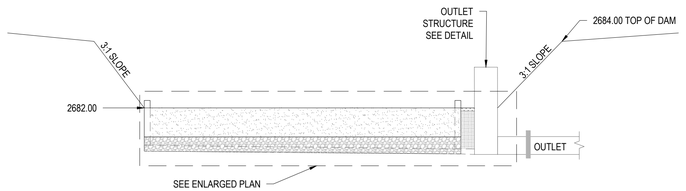
MAINTENANCE NOTES:

INSPECT RIPRAP OUTLET STRUCTURES WEEKLY AND AFTER SIGNIFICANT (1/2 INCH OR GREATER) RAINFALL EVENTS TO SEE IF ANY EROSION AROUND OR BELOW THE RIPRAP HAS TAKEN PLACE, OR IF STONES HAVE BEEN DISLODGED. IMMEDIATELY MAKE ALL NEEDED REPAIRS TO PREVENT FURTHER DAMAGE.

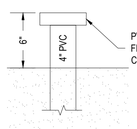
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SAND FILTER

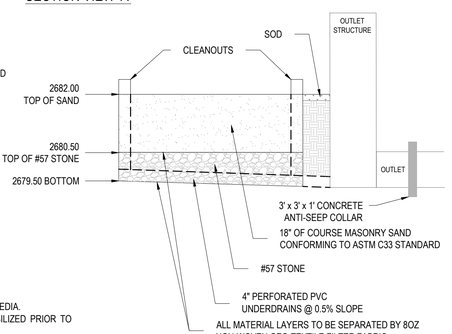




SECTION VIEW 'A'



CLEANOUT DETAIL



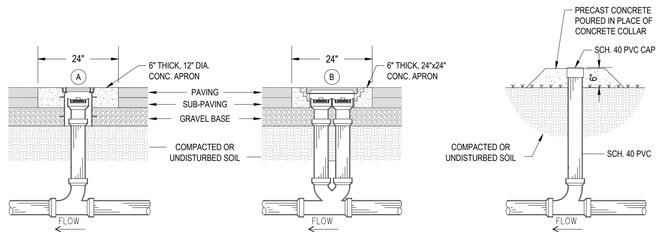
ENLARGED VIEW

NOTES:

1. ENSURE OUTLET STRUCTURE IS INSTALLED OUTSIDE OF SAND MEDIA.
2. ALL DRAINAGE AREAS TO THE SAND FILTER ARE TO BE STABILIZED PRIOR TO INSTALLATION OF AMENDED SAND.
3. PVC UNDERDRAIN PIPE SHOULD HAVE 3/8" PERFORATIONS SPACED AT 6" CENTERS. MIN. 4 HOLES PER ROW. MAX SPACING OF UNDERDRAIN PIPE IS 10 FEET ON CENTER. HDPE SHALL ADHERE TO AASHTO M252 SPECS.
4. UNDERDRAIN CLEANOUTS SHOULD EXTEND A MIN. OF 6" ABOVE SAND SURFACE.
5. ALL SOD WITHIN BASIN SMALL BE BERMUDA GRASS OR EQUALIANT GROWN IN SANDY SOIL.

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CLEANOUT

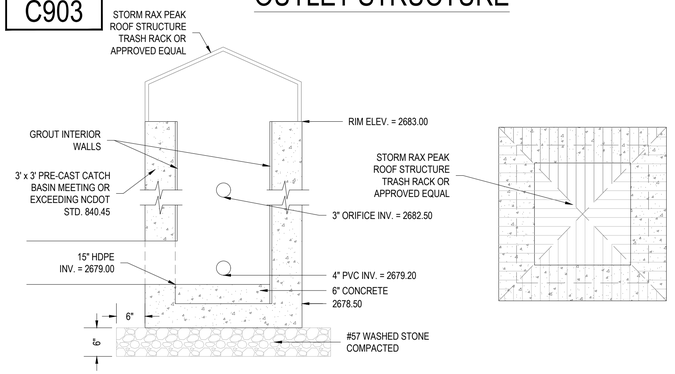


(A) JOSAM SERIES 58860-22 ACCESS COVER AND CLEANOUT WITH TAPER THREAD BRONZE PLUG SERIES 58540-20 AND "SAN." ON COVER (OR APPROVED EQUIVALENT).

(B) NEENAH MODEL R-6660-DP LIGHT DUTY ACCESS COVER WITH TWO (2) JOSAM SERIES 58190-22 CLEANOUTS WITH TAPER THREAD BRONZE PLUG SERIES 58540-20 (OR APPROVED EQUIVALENT).

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C903

OUTLET STRUCTURE



NOTES:

1. USE MONOLITHIC STRUCTURE WHERE POSSIBLE. IF RISERS ARE REQUIRED, THEY MUST BE MECHANICALLY ANCHORED TO PRIMARY STRUCTURE.
2. ENSURE ALL STRUCTURE JOINTS AND PIPE PENETRATIONS ARE WATER TIGHT. USE CON SEAL CS-102 JOINT MASTIC (OR APPROVED EQUAL) AT ALL SEAMS. GROUT INTERIOR STRUCTURE WALLS AND PIPE CONNECTIONS.

BREC
A Stratus Team Company
1605 CURTIS BRIDGE ROAD - SUITE 1
WILKESBORO, NC 28697
PHONE : 336.844.4088
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SEALS

NORTH CAROLINA PROFESSIONAL ENGINEER JOSHUA C. CHURCH SEAL 047241 REVIEW

10/20/25

COVE CREEK PARK
SUGAR GROVE, NC

REVISIONS

10/15/25	1 - ADDENDUM #1

SHEET SIZE:	24"x36"
PROJECT NUMBER:	0980062025
DRAWN BY:	J. EDWARDS
APPROVED BY:	J.CHURCH

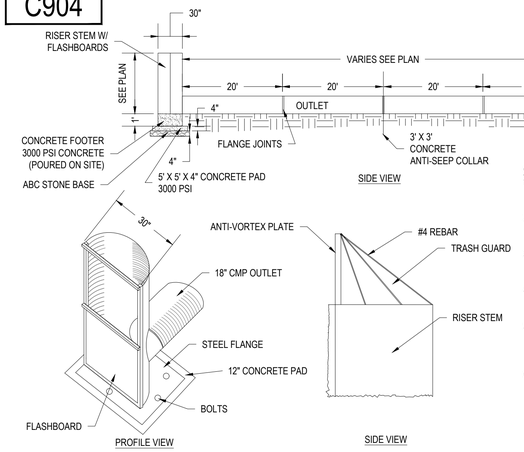
DETAILS

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1 C904

FLASHBOARD RISER

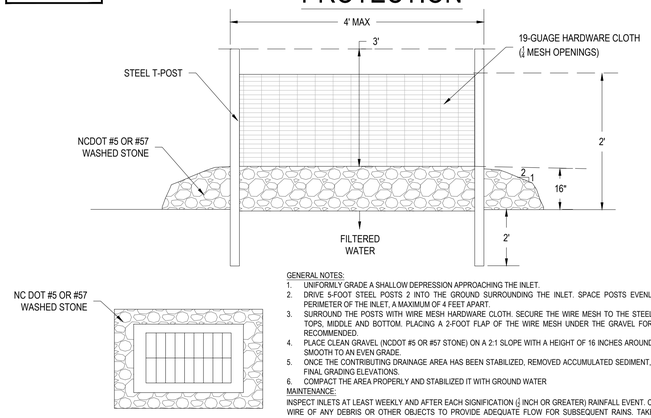


GENERAL NOTES:

1. FLASHBOARD RISER MUST BE CONSTRUCTED FROM STEEL CORRUGATED PIPE AND MUST BE WATER TIGHT.
2. FLASHBOARDS MUST BE TREATED, TONGUE-IN-GROOVE TIMBER, AT LEAST 2 IN THICK.
3. 2 ROWS OF FLASHBOARD SLOTS ARE REQUIRED SUCH THAT FLASHBOARDS ARE 2 BOARDS THICK.
4. JOINT BETWEEN RISER BARREL AND EXTENSION PIPE MUST BE SEALED WITH GASKET OR ENGINEER APPROVED COMPOUND.
5. ANTI-SEEP COLLAR MUST BE INSTALLED. COLLAR MUST BE WELDED TO FLASHBOARD PIPE. RISER PIPE MUST HAVE REMOVABLE TRASH GUARD.
6. THE STEEL FLANGE WILL BE BOLTED TO THE CONCRETE PAD.

2 C904

HARDWARE CLOTH AND GRAVEL INLET PROTECTION



GENERAL NOTES:

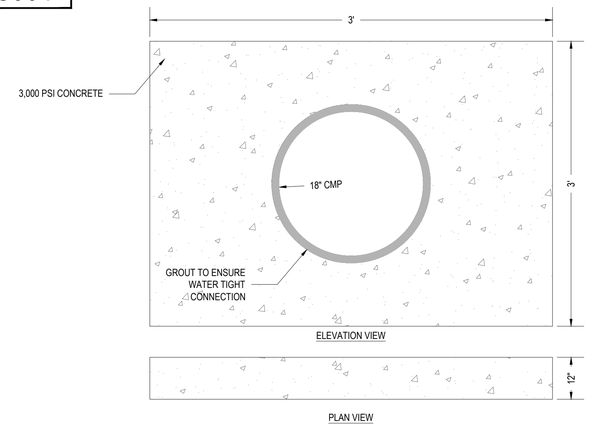
1. UNIFORMLY GRADE A SHALLOW DEPRESSION APPROACHING THE INLET.
2. DRIVE 5-FOOT STEEL POSTS 2 INTO THE GROUND SURROUNDING THE INLET. SPACE POSTS EVENLY AROUND THE PERIMETER OF THE INLET, A MAXIMUM OF 4 FEET APART.
3. SURROUND THE POSTS WITH WIRE MESH HARDWARE CLOTH. SECURE THE WIRE MESH TO THE STEEL POSTS AT THE TOPS, MIDDLE AND BOTTOM. PLACING A 2-FOOT FLAP OF THE WIRE MESH UNDER THE GRAVEL FOR ANCHORING IS RECOMMENDED.
4. PLACE CLEAN GRAVEL (NCDOT #5 OR #57 STONE) ON A 2:1 SLOPE WITH A HEIGHT OF 16 INCHES AROUND THE WIRE, AND SMOOTH TO AN EVEN GRADE.
5. ONCE THE CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED, REMOVED ACCUMULATED SEDIMENT, AND ESTABLISH FINAL GRADING ELEVATIONS.
6. COMPACT THE AREA PROPERLY AND STABILIZED IT WITH GROUND WATER

MAINTENANCE:

INSPECT INLETS AT LEAST WEEKLY AND AFTER EACH SIGNIFICATION (½ INCH OR GREATER) RAINFALL EVENT. CLEAR THE MESH WIRE OF ANY DEBRIS OR OTHER OBJECTS TO PROVIDE ADEQUATE FLOW FOR SUBSEQUENT RAINS. TAKE CARE NOT TO DAMAGE OR UNDERCUT THE WIRE MESH DURING SEDIMENT CONTROL. REPLACE STONE AS NEEDED.

3 C904

ANTI-SEEP COLLAR



BREC
A Stratus Team Company
1605 CURTIS BRIDGE ROAD - SUITE 1
WILKESBORO, NC 28697
PHONE : 336.844.4088
www.brec.biz

SEALS

NORTH CAROLINA PROFESSIONAL SEAL 042141 ENGINEER JOSHUA C CHURCH
REVIEW

10/20/25

COVE CREEK PARK
SUGAR GROVE, NC

REVISIONS

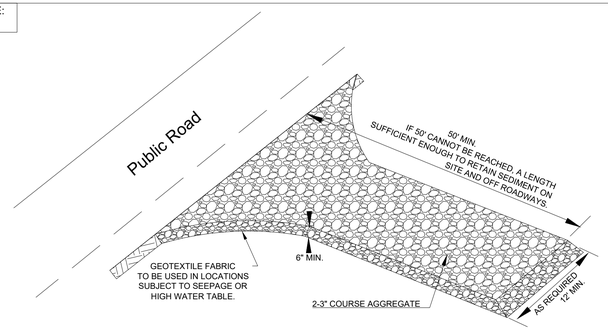
10/15/25 1 - ADDENDUM #1

SHEET SIZE: 24"x36"
PROJECT NUMBER: 0980062025
DRAWN BY: J. EDWARDS
APPROVED BY: J.CHURCH

DETAILS

C904

DATE: STD: 6.06



Construction:

1. Clear the entrance and exit area of all vegetation, roots, and other objectionable material and properly grade it.
2. Place the gravel to the specific grade and dimensions shown on the plans, and smooth it.
3. Provide drainage to carry water to a sediment trap or other suitable outlet.
4. Use geotextile fabrics in order to improve stability of the foundation in locations subject to seepage or high water table.

Maintenance:

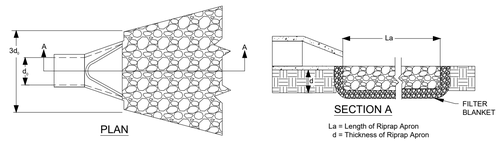
1. Inspect all measures at least weekly and after each rainfall of 1.0 inch or greater. Make any required repairs immediately.
2. Maintain the gravel pad in a condition to prevent mud or sediment from leaving the construction site. This may require periodic topdressing with 2-inch stone.
3. Sediment on roadways is to be removed immediately by broom and shovel, either by manual or mechanical means, and not to be washed off where it has the potential to enter a stream, drainage way or storm drain system.

TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT

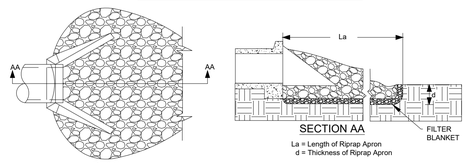
Effective Date: 9/1/2023 In accordance with the 2013 Design Manual Updates

DATE: STD: 6.41

PIPE OUTLET TO FLAT AREA NO WELL-DEFINED CHANNEL



PIPE OUTLET TO WELL-DEFINED CHANNEL



NOTES:

1. Compact any fill required in the subgrade to the density of the surrounding undisturbed material. Low areas in the subgrade on undisturbed soil may also be filled by increasing the riprap thickness.
2. The riprap and gravel filter must conform to the specified grading limits shown on the plans.
3. Filter cloth, when used, must meet design requirements, and be properly protected from punching or tearing during installation. Repair any damage by removing the riprap and placing another piece over the damaged area. If the damage is extensive, replace the entire filter cloth.
4. All connecting joints should overlap so the top layer is above the downstream layer a minimum of 1 foot.
5. The minimum thickness of the riprap should be 1.5 times the maximum stone diameter but not less than 6".
6. Riprap may be field stone or rough quarry stone. It should be hard, angular highly weather-resistant and well graded.
7. Construct the apron on zero grade with no overfill at the end. Make the top of the riprap at the downstream end level with the receiving area or slightly below it.
8. Ensure that the apron is properly aligned with the receiving stream and preferably straight throughout its length. If a curve is needed, place in the upper section of the apron.

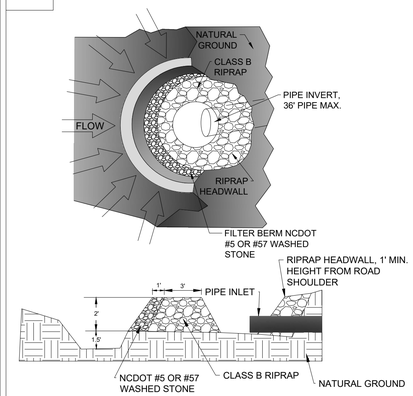
MAINTENANCE:

1. Inspect outlet structures at least weekly and after each rainfall of 1.0 inch or greater.
2. Check outlets for erosion around or below riprap and for if stones have been dislodged. Make repairs immediately to prevent further damage.

OUTLET STABILIZATION STRUCTURE

Effective Date: 9/1/2023 In accordance with the 2013 Design Manual Updates

DATE: STD: 6.55



NOTES:

1. Clear the area of all debris that might hinder excavation and disposal of spoil.
2. Install the Class B or Class 1 riprap in a semi-circle around the pipe inlet. The stone should be built up higher on each end where it ties into the embankment. The minimum crest width of the riprap should be 3 feet, with a minimum bottom width of 11 feet. The minimum height should be 2 feet, but also 1 foot lower than the embankment of diversions.
3. A 1 foot thick layer of NC DOT #5 or #57 stone should be placed on the outside slope of the riprap.
4. The sediment storage area should be excavated around the outside of the stone horseshoe 18 inches below natural grade.
5. When contributing drainage area has been stabilized, remove the pipe and rock, fill depression, establish final grading elevations, compact the area properly, and stabilize with ground cover.

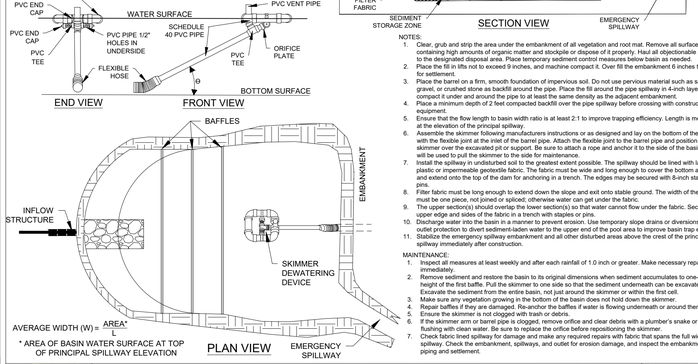
MAINTENANCE:

1. Inspect all measures at least weekly and after each rainfall of 1.0 inch or greater and repair immediately.
2. Remove sediment and restore the sediment storage area to its original dimensions when the sediment has accumulated to one-half the design depth of the trap.
3. Place the sediment that is removed in the designated disposal area and replace the contaminated part of the gravel facing.
4. Check the structure for damage. Any riprap displaced from the stone horseshoe must be replaced immediately.
5. After all the sediment-producing areas have been permanently stabilized, remove the structure and all the unstable sediment. Smooth the area to blend with the adjoining areas and provide permanent ground cover.

ROCK PIPE INLET PROTECTION

Effective Date: 9/1/2023 In accordance with the 2013 Design Manual Updates

DATE: STD: 6.64



NOTES:

1. Clear, grub and strip the area under the embankment of all vegetation and root mat. Remove all surface soil containing high amounts of organic matter and stockpile or dispose of it properly. Haul all objectionable material to the designated disposal area. Place temporary sediment control measures below basin as needed.
2. Place the fill in lifts not to exceed 9 inches, and machine compact it. Over fill the embankment 6 inches to allow for settlement.
3. Place the barrel on a firm, smooth foundation of impervious soil. Do not use pervious material such as sand, gravel, or crushed stone as backfill around the pipe. Place the fill around the pipe spillway in 4-inch layers and compact it under and around the pipe to at least the same density as the adjacent embankment.
4. Place a minimum depth of 2 feet compacted backfill over the pipe spillway before crossing with construction equipment.
5. Ensure that the flow length to basin width ratio is at least 2:1 to improve trapping efficiency. Length is measured at the elevation of the principal spillway.
6. Assemble the skimmer following manufacturers instructions or as designed and lay on the bottom of the basin with the flexible joint at the inlet of the barrel pipe. Attach the flexible joint to the barrel pipe and position the skimmer over the excavated pit or support. Be sure to attach a rope and anchor it to the side of the basin.This will be used to pull the skimmer to the side for maintenance.
7. Install the spillway in undisturbed soil to the greatest extent possible. The spillway should be lined with laminated plastic or impermeable geotextile fabric. The fabric must be wide and long enough to cover the bottom and sides and extend onto the top of the dam for anchoring in a trench. The edges may be secured with 8-inch staples or pins.
8. Filter fabric must be long enough to extend down the slope and exit onto stable ground. The width of the fabric must be one piece, not joined or spliced; otherwise water can get under the fabric.
9. The upper section(s) should overlap the lower section(s) so that water cannot flow under the fabric. Secure the upper edge and sides of the fabric in a trench with staples or pins.
10. Discharge water into the basin in a manner to prevent erosion. Use temporary slope drains or diversions with outlet protection to divert sediment-laden water to the upper end of the pool area to improve basin trap efficiency.
11. Stabilize the emergency spillway embankment and all other disturbed areas above the crest of the principal spillway immediately after construction.

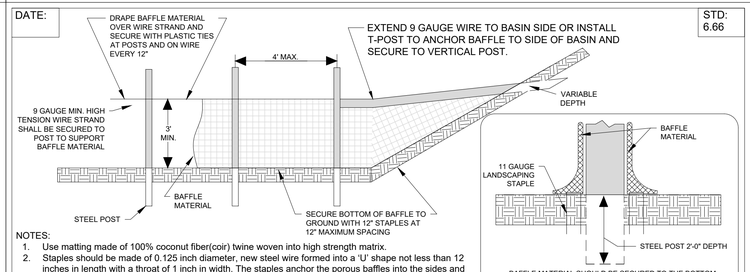
MAINTENANCE:

1. Inspect all measures at least weekly and after each rainfall of 1.0 inch or greater. Make necessary repairs immediately.
2. Remove sediment and restore the basin to its original dimensions when sediment accumulates to one-half the height of the first baffle. Pull the skimmer to one side so that the sediment underneath can be excavated. Excavate the sediment from the entire basin, not just around the skimmer or within the first cell.
3. Make sure any vegetation growing in the bottom of the basin does not hold down the skimmer.
4. Repair baffles if they are damaged. Re-anchor the baffles if water is flowing underneath or around them.
5. Ensure the skimmer is not clogged with trash or debris.
6. If the skimmer arm or barrel pipe is clogged, remove orifice and clear debris with a plumber's snake or by flushing with clean water. Be sure to replace the orifice before repositioning the skimmer.
7. Check fabric lined spillway for damage and make any required repairs with fabric that spans the full width of the spillway. Check the embankment, spillways, and outlet for erosion damage, and inspect the embankment for piping and settlement.

SKIMMER SEDIMENT BASIN

Effective Date: 9/1/2023 In accordance with the 2013 Design Manual Updates

DATE: STD: 6.66



NOTES:

1. Use matting made of 100% coconut fiber(coir) twine woven into high strength matrix.
2. Staples should be made of 0.125 inch diameter, new steel wire formed into a 'U' shape not less than 12 inches in length with a throat of 1 inch in width. The staples anchor the porous baffles into the sides and bottom of the basin.
3. Grade the basin so that the bottom is level front to back and side to side.
4. Install the coir fiber baffles immediately upon excavation of the basins.
5. Install posts across the width of the sediment trap.
6. Steel posts should be driven to a depth of 24 inches and spaced in a maximum of 4 feet apart. The top of the fabric should be a minimum of 6 inches higher than the invert of the spillway. Tops of the baffles should be a minimum of 2 inches lower than the top of the earthen embankment.
7. Install 3 coir fiber baffles in basins at drainage outlets with a spacing of 1/4 the basin length. 2 coir fiber baffles can be installed in the basins less than 20 feet in length with a spacing of 1/3 the basin length.
8. Attach a 9-gauge high tension wire strand to the steel posts at a height of 6 inches above the spillway elevation with plastic ties or wire fasteners to prevent sagging. If the temporary sediment basin will be converted to a permanent stormwater basin of a greater depth, the baffle height should be based on the pool depth during use as a temporary sediment basin.

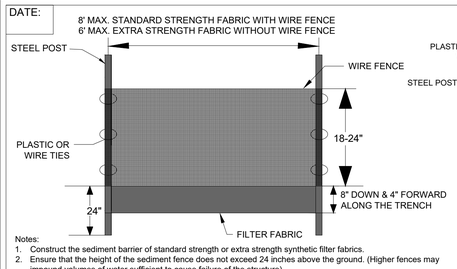
MAINTENANCE:

1. Inspect all measures at least weekly and after each rainfall of 1.0 inch or greater and repair immediately.
2. Maintain access to baffles. If the fabric collapses, tears, decomposes, or becomes ineffective, replace immediately.
3. Remove sediment deposits when it reaches half full. Replace if baffle fabric is damaged during clean-out operations. Sediment depth should never exceed half the designed storage depth.

POROUS BAFFLES

Effective Date: 9/1/2023 In accordance with the 2013 Design Manual Updates

DATE: STD: 6.62



Notes:

1. Construct the sediment barrier of standard strength or extra strength synthetic filter fabrics.
2. Ensure that the height of the sediment fence does not exceed 24 inches above the ground. (Higher fences may impound volumes of water sufficient to cause failure of the structure)
3. Construct the filter fabric from a continuous roll cut to the length of the barrier to avoid joints. When joints are necessary, securely fasten the filter cloth only at a support post with 4 feet minimum overlap to the next post.
4. Support standard strength filter fabric by wire mesh fastened securely to the upslope side of the posts. Extend the wire mesh support to the bottom of the trench. Fasten the wire reinforcement, then fabric on the upslope side of the fence post. Wire or plastic zip ties should have a minimum 50 pound tensile strength.
5. When a wire mesh support fence is used, space posts a maximum of 8 feet apart. Supports should be driven securely into the ground a minimum of 24 inches. Wire mesh should be a minimum 14-gauge with 6 inch mesh spacing.
6. Extra strength filter fabric with 6 foot post spacing does not require a wire mesh support fence. Securely fasten the filter fabric directly to posts. Wire or plastic zip ties should have a minimum of 50 pound tensile strength.
7. Excavate the trench approximately 4 inches wide and 8 inches deep along the proposed line of the posts and upslope from the barrier.
8. Place 12 inches of fabric along the bottom and side of the trench.
9. Backfill the trench with soil placed over the filter fabric and compact. Thorough compaction of the backfill is critical to silt fence performance.
10. Do not attach filter fabric to existing trees.
11. Do not place across ditches, streams, or any other areas of concentrated flow.

Max. Slope Length and Slope for Which Sediment Fence is Applicable

Slope	Slope Length (ft)	Max. Area (ft²)
<2%	100	10,000
2 to 5%	75	7,500
5 to 10%	50	5,000
10 to 20%	25	2,500
>20%	15	1,500

Maintenance:

1. Inspect all measures at least weekly and after each rainfall of 1.0 inch or greater. Make any required repairs immediately.
2. Should the fabric of a sediment fence collapse, tear, decompose, or become ineffective, replace it promptly.
3. Remove sediment deposits as necessary to provide adequate storage volume for the next rain and reduce pressure on the fence. Take care to avoid undermining the fence during cleanouts.
4. Remove all fencing materials and unstable sediment deposits and bring the area to grade and stabilize it after the contributing drainage area has been properly stabilized.

SEDIMENT FENCE

Effective Date: 9/1/2023 In accordance with the 2013 Design Manual Updates

DATE:

STD: 6.10

TEMPORARY SEEDING RECOMMENDATIONS
FOR LATE WINTER AND EARLY SPRING

Seeding Mixture

Species	Rate (lb/acre)
Rye (grain)	120
Annual lespedeza (Kobe in Piedmont and Coastal Plain, Korean in Mountains)	50

Omit annual lespedeza when duration of temporary cover is not to extend beyond June.

Seeding Dates
Mountains—Above 2500 feet: Feb. 15 - May 15
Below 2500 feet: Feb. 1- May 1
Piedmont—Jan. 1 - May 1
Coastal Plain—Dec. 1 - Apr. 15

Mulch
Apply 4,000 lb/acre straw. Anchor straw by tacking with asphalt, netting, or a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool.

Maintenance
Refertilize if growth is not fully adequate. Reseed, refertilize and mulch immediately following erosion or other damage.

TEMPORARY SEEDING RECOMMENDATIONS FOR SUMMER

Seeding Mixture

Species	Rate (lb/acre)
German millet	40

In the Piedmont and Mountains, a small-stemmed Sudangrass may be substituted at a rate of 50 lb/acre.

Seeding Dates
Mountains — May 15 - Aug. 15
Piedmont — May 1 - Aug. 15
Coastal Plain — Apr. 15 - Aug. 15

Mulch
Apply 4,000 lb/acre straw. Anchor straw by tacking with asphalt, netting, or a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool.

Maintenance
Refertilize if growth is not fully adequate. Reseed, refertilize and mulch immediately following erosion or other damage.

TEMPORARY SEEDING RECOMMENDATIONS FOR FALL

Seeding Mixture

Species	Rate (lb/acre)
Rye (grain)	120

Seeding Dates
Mountains — Aug. 15 - Dec. 15
Coastal Plain and Piedmont — Aug. 15 - Dec. 31

Mulch
Apply 4,000 lb/acre straw. Anchor straw by tacking with asphalt, netting, or a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool.

Maintenance
Repair and refertilize damaged areas immediately. Topdress with 50 lb/acre of nitrogen in March. If it is necessary to extend temporary cover beyond June 15, overseed with 50 lb/acre Kobe (Piedmont and Coastal Plain) or Korean (Mountains) lespedeza in late February or early March.

SEED BED PREPARATION:

LIMING- Apply lime according to soil test recommendations. If the pH (acidity) of the soil is not known, an application of ground agricultural limestone at the rate of 1-1½ tons/acre on coarse-textured soils and 2-3 tons/acre on fine-textured soils is usually sufficient. Apply limestone uniformly and incorporate into the top 4-6 inches of soil. Soils with a pH of 6 or higher need not be limed.

FERTILIZER- Base application rates on soil tests. When these are not possible, apply a 10-10-10 grade fertilizer at 700 - 1,000 lb/acre. Both fertilizer and lime should be incorporated into the top 4-6 inches of soil. If a hydraulic seeder is used, do not mix seed and fertiliizer more than 30 minutes before application.

SURFACE ROUGHENING- If recent tillage operations have resulted in a loose surface additional roughening may not be required, except to break up large clods. If rainfall causes the surface to become sealed or crusted, loosen it just prior to seeding by raking, harrowing, or other suitable methods for fine grading. The finished grade shall be a smooth even soil surface with a loosen uniformly fine texture. All ridges and depressions shall be removed and filled to provide the approved surface drainage. Planting is to be done immediately after finished grades are obtained and seedbed preparation is completed.

TEMPORARY SEEDING

Effective Date: 9/1/2023
In accordance with the 2013 Design Manual Updates

DATE:

STD: 6.11

NON-INVASIVE PERMANENT SEEDING RECOMMENDATIONS
FOR LATE WINTER AND EARLY SPRING

SEEDING MIXTURE

Species	Rate
Centipede	5 lbs/acre
Indian Woodoats	1.5-2.5 lbs/acre*
Virginia Wild Rye	4-6 lbs/acre

*Depending upon mix with other species. See table 6.11.d from Chapter 6 of the NC Erosion and Sediment Control Planning and Design Manual.

Seeding Dates
Coastal or Eastern Piedmont for Centipede- Sept. 1 - May 1
Coastal and Piedmont for Indian Woodoats and Virginia Wild Rye- Feb 15 - April 1
Mountains for Indian Woodoats and Virginia Wild Rye- March 1 - May 15

Maintenance:
Significant maintenance may be required to obtain desired cover.

NON-INVASIVE PERMANENT SEEDING RECOMMENDATIONS FOR SUMMER

SEEDING MIXTURE

Species	Rate
Indian Woodoats	1.5-2.5 lbs/acre*
Virginia Wild Rye	4-6 lbs/acre*

*Depending upon mix with other species. See table 6.11.d from Chapter 6 of the NC Erosion and Sediment Control Planning and Design Manual.

Seeding Dates
Mountains - July 15- Aug 15
Piedmont - Aug 15 - Oct 15

Maintenance:
Indian Woodoats and Virginia Wild Rye are both sun and shade tolerant.

NON-INVASIVE PERMANENT SEEDING RECOMMENDATIONS FOR FALL

SEEDING MIXTURE

Species	Rate
Hard Fescue	15 lbs/acre
Switchgrass	2.5-3.5 lbs/acre*
Indian Grass	5-7 lbs/acre*
Big Bluestem	5-7 lbs/acre*
Indian Woodoats	1.5-2.5 lbs/acre*
Virginia Wild Rye	4-6 lbs/acre*

*Depending upon mix with other species. See table 6.11.d from Chapter 6 of the NC Erosion and Sediment Control Planning and Design Manual.

Seeding Dates
Mountains - Hard Fescue- Aug 1 - June 1
Mountains- Switchgrass, Indian Grass, Big Bluestem- Dec 1 - April 15
Piedmont and Coastal- Switchgrass, Indian Grass, Big Bluestem- Dec 1 - April 1
Coastal- Indian Woodoats and Virginia Wild Rye- Sept 1 - Nov 1

Maintenance:
Hard Fescue is not recommended for slopes > 5%. Prefers shade.

SEED BED PREPARATION:

LIMING- Apply lime according to soil test recommendations. If the pH (acidity) of the soil is not known, an application of ground agricultural limestone at the rate of 1 to 1 ½ tons/acre on coarse0textured soils and 2-3 tons/acre on fine-textured soils is usually sufficient. Apply limestone uniformly and incorporate into the top 4-6 inches of soil. Soils with a pH of 6 or higher need not be limed.

FERTILIZER- Base application rates on soil tests. When these are not possible, apply a 10-10-10 grade fertilizer at 700-1,000 lb/acre. Both fertilizer and lime should be incorporated into the top 4-6 inches of soil. If a hydraulic seeder is used, do not mix seed and fertilizer more than 30 minutes before application.

SURFACE ROUGHENING- If recent tillage operations have resulted in a loose surface additional roughening may not be required, except to break up large clods. If rainfall causes the surface to become sealed or crusted, loosen it just prior to seeding by raking, harrowing, or other suitable methods for fine grading. the finished grade shall be a smooth even soil surface with a loosen uniformly fine texture. all ridges and depressions shall be removed and filled to provide the approved surface drainage . Planting is to be done immediately after finished grades are obtained and seedbed preparation is completed.

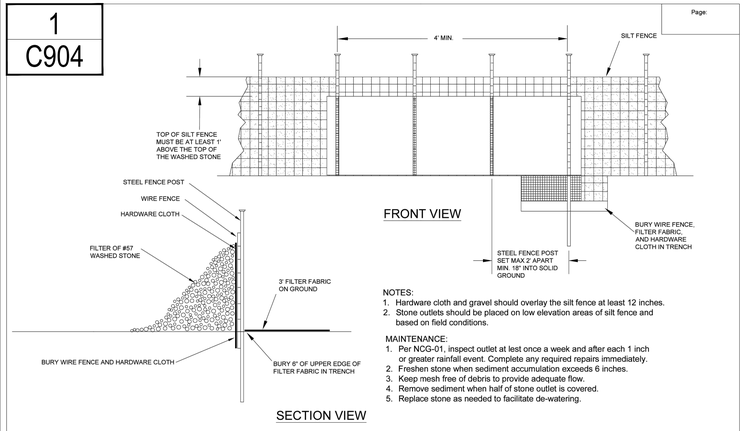
NOTES:
1. Permanent seeding, sodding or other means of stabilization are required when all construction work is completed according to the NPDES timeframes table.
2. A North Carolina Department of Agriculture soils test (or equal) is highly recommended to be obtained for all areas to be seeded, sprigged, sodded or planted.
3. Use a seeding mix that will produce fast0growing nurse crops and includes non-invasive species that will eventually provide a permanent groundcover. Soil blankets may be used in lieu of nurse crops. Mat, tack or crimp mulch, as needed to stabilize seeded areas until root establishment, Mulch must cover at leaser 80% of the soil surface.
4. Ground cover shall be maintained until permanent vegetation is established and stable against accelerated erosion.

PERMANENT SEEDING

Effective Date: 9/1/2023
In accordance with the 2013 Design Manual Updates

1
C904

Page:



NOTES:
1. Hardware cloth and gravel should overlay the silt fence at least 12 inches.
2. Stone outlets should be placed on low elevation areas of silt fence and based on field conditions.

MAINTENANCE:
1. Per NCG-01, inspect outlet at lest once a week and after each 1 inch or greater rainfall event. Complete any required repairs immediately.
2. Freshen stone when sediment accumulation exceeds 6 inches.
3. Keep mesh free of debris to provide adequate flow.
4. Remove sediment when half of stone outlet is covered.
5. Replace stone as needed to facilitate de-watering.

NORTH CAROLINA Environmental Quality
EFFECTIVE DATE: 11/1/2022

SILT FENCE OUTLET

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BREC
A Stratus Team Company
1605 CURTIS BRIDGE ROAD - SUITE 1
WILKESBORO, NC 28697
PHONE : 336.844.4088
www.brec.biz

SEALS

NORTH CAROLINA PROFESSIONAL ENGINEER JOSHUA A. CHURCH SEAL 049141 REVIEW

10/20/25

COVE CREEK PARK
SUGAR GROVE, NC

REVISIONS
10/15/25 1 - ADDENDUM #1

SHEET SIZE: 24"x36"
PROJECT NUMBER: 0980062025
DRAWN BY: J. EDWARDS
APPROVED BY: J.CHURCH

DETAILS

C905

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SYMBOLS LEGEND

- LEVEL LINE
- NUMBERED NOTE NEW WORK (#)
- REVISION (#)
- DOOR NUMBER (###)
- ROOM NUMBER (###)
- WINDOW TYPE (A)
- CENTERLINE, FLOOR LINE OR PROJECTED LINE
- PROPERTY LINE OR BOUNDARY LINE
- BREAK LINE
- REFLECTED OR CONCEALED LINE
- CEILING MOUNTED MECHANICAL DIFFUSERS AND RETURNS
- LIGHT FIXTURE
- NEW CMU WALL/PARTITION

MATERIALS LEGEND

- WOOD BLOCKING
- CONCRETE MASONRY
- POROUS FILL
- FIBER CEMENT
- RIGID INSULATION
- BATT INSULATION
- CLAY MASONRY
- CONCRETE
- GYPSUM DRYWALL PLASTER AND GROUT
- COMPACTED FILL

GENERAL NOTES

1. THE LOCATION OF EXISTING UTILITIES ACROSS OR ALONG THE LINE OF THE PROPOSED WORK IS NOT NECESSARILY AS SHOWN ON THE PLANS AND WHERE SHOWN IS ONLY APPROXIMATELY CORRECT. THE CONTRACTOR SHALL, ON HIS OWN INITIATIVE AND AT NO EXTRA COST TO THE OWNER, LOCATE ALL UNDERGROUND LINES AND STRUCTURES AS NECESSARY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO EXISTING UTILITIES.
2. ALL WORK SHALL BE SUBJECT TO INSPECTION BY LOCAL OFFICIALS AND THE OWNER'S DESIGNATED REPRESENTATIVE.

ARCHITECTURAL ABBREVIATIONS

ACM	ASBESTOS CONTAINING MATERIALS
ADA	AMERICANS WITH DISABILITIES ACT
AFF	ABOVE FINISHED FLOOR
ALUM	ALUMINUM
ANOD	ANODIZED
APPROX	APPROXIMATELY
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
BLDG	BUILDING
BLKG	BLOCKING
BRG	BEARING
CAB	CABINET
CB	CERAMIC BASE
CH	COAT HOOK
CLG	CEILING
CLO	CLOSET
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CONC	CONCRETE
CONT	CONTINUOUS, CONTINUES
COORD	COORDINATE
CPSM	CONSTRUCTION & PROFESSIONAL SERVICES MANUAL
CT	CERAMIC TILE
DEMO	DEMOLITION, DEMOLISH
DET	DETAIL
DIA	DIAMETER
DIM(S)	DIMENSION(S)
DW	DISH WASHER
DWG(S)	DRAWING(S)
EA	EACH
ELEC	ELECTRICAL
ELEV	ELEVATION
EQ	EQUAL
EQUIP	EQUIPMENT
ETR	EXISTING TO REMAIN
EXIST	EXISTING
EXT	EXTERIOR
FC	FIBER CEMENT
FCB	FIBER CEMENT BOARD
FD	FLOOR DRAIN
FF	FINISHED FLOOR
FIN	FINISH, FINISHED
FIXT	FIXTURE
FLR	FLOOR
FLSHG	FLASHING
FT	FEET, FOOT
FTG	FOOTING
GALV	GALVANIZED
GB	GRAB BAR
GPDW	GYPSUM DRYWALL
GSF	GROSS SQUARE FEET
GYP	GYPSUM WALL BOARD
H	HIGH
HC	HANDICAPPED
HM	HOLLOW METAL
HORIZ	HORIZONTAL, HORIZONTALLY
HT	HEIGHT
INSUL	INSULATION
INT	INTERIOR
JT	JOINT
MDF	MEDIUM DENSITY FIBERBOARD
MANUF	MANUFACTURER
MFR	MANUFACTURER
MAX	MAXIMUM
MECH	MECHANICAL
MIR	MIRROR
MISC	MISCELLANEOUS
MTD	MOUNTED
MIN	MINIMUM
MIR	MIRROR
MO	MASONRY OPENING
MTL	METAL
NEC	NATIONAL ELECTRICAL CODE
NOM	NOMINAL
OC	ON CENTER
OD	OUTSIDE DIAMETER
OH	OPPOSITE HAND
OPNG	OPENING
OPP	OPPOSITE
PLAM	PLASTIC LAMINATE
PLUMB	PLUMBING
PLYWD	PLYWOOD
PNTD	PAINTED
PREP	PREPARE
PT	PRESSURE TREATED
PTD	PAINTED
PTN	PARTITION
PVC	POLYMER OF VINYL CHLORIDE
QT	QUARRY TILE
RD	ROAD
REF	REFERENCE
REINF	REINFORCING, REINFORCE
REFR	REFRIGERATOR
REQ'D	REQUIRED
RO	ROUGH OPENING
RT	ROUTE
SC	SHOWER CURTAIN
SCH	SCHEDULE
SCHED	SCHEDULE
SCHED'D	SCHEDULED
SCR	SHOWER CURTAIN ROD
SECT	SECTION
SF	SQUARE FEET
SHTG	SHEATHING
SIM	SIMILAR
SLNT	SEALANT
SPEC	SPECIFICATION(S)
SQ	SQUARE
SS	STAINLESS STEEL
STRUCT	STRUCTURE, STRUCTURAL
STL	STEEL
TB	TOWEL BAR
TEMP	TEMPERATURE
TH	THICK
TLT(S)	TOILET(S)
TRTD	TREATED
TOM	TOP OF MASONRY
TOS	TOP OF STEEL
TTD	TOILET TISSUE DISPENSER
TYP	TYPICAL
T&G	TONGUE & GROOVE
UON	UNLESS OTHERWISE NOTED
VERT	VERTICAL, VERTICALLY
VIF	VERIFY IN FIELD
W/	WITH
WD	WOOD
WH	WATER HEATER
WWF	WELDED WIRE FABRIC

BASE BID: PICNIC SHELTER

THE AREA OF THE PREVIOUS PICNIC SHELTER ON THE SITE IS 800 S.F.
THE AREA OF THE PROPOSED PICNIC SHELTER (AS DESCRIBED ON SHEETS A101, A201, AND A301) IS 782 S.F.

ALTERNATE: RESTROOMS

REFER TO SHEETS A102, A103, A104, A202, A302, A401, A502, AND A503

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SEALS

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10/16/25

COVE CREEK PARK
SUGAR GROVE, NC

REVISIONS

10/15/25 1 - ADDENDUM #1

SHEET SIZE: 24"x36"
PROJECT NUMBER: 0980062025
DRAWN BY: R.WALKER
APPROVED BY: C.DEBELIUS

ABBREVIATIONS NOTES & LEGEND

A001

2018 APPENDIX B - BUILDING CODE SUMMARY

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2018 APPENDIX B
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS
(except 1 and 2-family dwellings and townhouses)

Name of Project: ___Picnic Pavilion_____
Address: __Old Cove Creek School, Sugar Grove, NC_ **Zip Code**: 28679_
Owner or Authorized Agent: _____ **Phone**: _____
Owned By: ☒City/County ☐Private ☐State
Code Enforcement Jurisdiction: ☐City: _____ ☐County _____ ☐State

D

CONTACT: _____

DESIGNER	FIRM	NAME	LICENSE#	PHONE	EMAIL
Architectural	BREC				
Civil	BREC				
Electrical	Kilian	Michael Kilian	#17304	984-345-3793	MKILIAN@KILIANENGINEERING.COM
Fire Alarm					
Plumbing	Kilian	Michael Kilian	#17304	984-345-3793	MKILIAN@KILIANENGINEERING.COM
Mechanical	Kilian	Michael Kilian	#17304	984-345-3793	MKILIAN@KILIANENGINEERING.COM
Sprinkler-Standpipe					
Structural					
Retaining Walls>5' High					
Other					

** Sprinkler – Standpipe to be designed by a North Carolina Licensed Sprinkler Contractor
Signed and sealed calculations and drawings shall be submitted to the Fire Marshall for approval

2018 NC BUILDING CODE ☒New Building ☐Addition ☐Renovation
☐1st Time Interior Completion
☐*Shell/Core – Contact the local inspection jurisdiction for possible additional procedures and requirements*
☐*Phased Construction – Shell/Core – Contact the local inspection jurisdiction for possible additional procedures and requirements*

2018 NC EXISTING BUILDING CODE: (check all that apply) **EXISTING**: Alteration ☐Prescriptive ☐Repair ☐Level I ☐Level II ☐Historic Property ☐Chapter 14 ☐Level II ☐Change of Use

CONSTRUCTED _____ **CURRENT OCCUPANCY(S):** (Ch. 3) _____
RENOVATED _____ **PROPOSED OCCUPANCY(S):** (Ch. 3) _____

RISK CATEGORY: (Table 1604.5) **Current**: ☐Level I ☐Level II ☐Level II ☐Level IV
Proposed: ☐Level I ☐Level II ☐Level II ☐Level IV

C

BASIC BUILDING DATA

Construction Type: ☐I-A ☐II-A ☐III-A ☐IV ☐V-A
(Check all that apply) ☐I-B ☐II-B ☐III-B
Sprinklers: ☐No ☐Yes ☐Partial ☐NFPA ☐NFPA 13R ☐NFPA 13D
Standpipes: ☐No ☐Yes Class ☐I ☐II ☐III ☐Wet ☐Dry
Primary Fire District: ☐No ☐Yes Flood Hazard Area: ☐No ☐Yes
Special Inspections required: ☐No ☐Yes

Gross Building Area Table

Floor_____Existing (sq.ft)_____New (sq.ft)_____Sub-Total_____
6th Floor_____
5th Floor_____
4th Floor_____
3rd Floor_____
2nd Floor_____
Mezzanine_____
1st Floor_____
Basement_____
TOTAL

B

Accessory Occupancies ☐New Building ☐Addition ☐Renovation
☐1st Time Interior Completion
☐*Shell/Core – Contact the local inspection jurisdiction for possible additional procedures and requirements*
☐*Phased Construction – Shell/Core – Contact the local inspection jurisdiction for possible additional procedures and requirements*

2018 NC EXISTING BUILDING CODE: (check all that apply) **EXISTING**: Alteration ☐Prescriptive ☐Repair ☐Level I ☐Level II ☐Historic Property ☐Chapter 14 ☐Level II ☐Change of Use

CONSTRUCTED _____ **CURRENT OCCUPANCY(S):** (Ch. 3) _____
RENOVATED _____ **PROPOSED OCCUPANCY(S):** (Ch. 3) _____

RISK CATEGORY: (Table 1604.5) **Current**: ☐Level I ☐Level II ☐Level II ☐Level IV
Proposed: ☐Level I ☐Level II ☐Level II ☐Level IV

ALLOWABLE AREA

Primary Occupancy Classifications
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 Condition ☐1 ☐2
☐I-2 Condition ☐1 ☐2
☐I-3 Condition ☐1 ☐2 ☐3 ☐4 ☐5
☐I-4 Condition
Mercantile ☐
Residential ☐R-1 ☐R-2 ☐R-3 ☐R-4
Storage ☐S-1 Moderate ☐S-2 Low ☐High-Piled
☐Parking Garage ☐Open ☐Enclosed ☐Repair Garage
Utility and Miscellaneous ☐

Accessory Occupancies Classification(s): _____
Incidental Uses (Table 509): _____
Special Uses (Chapter 4 – List Code Sections): _____
Special Provisions (Chapter 5 – List Code Sections): _____
Mixed Occupancy: ☐Yes ☒No Separation:_____ Exception:_____

A

☐**Non-Separated Use** (508.3)
☐**Separated Use** (508.4) – See below for area calculations for each story. The area of the occupancy shall be such that the sum of the ratios of the actual floor area of each use divided by the allowable floor area for each use shall not exceed 1:

$$\frac{\text{Actual Area of Occupancy A}}{\text{Allowable Area of Occupancy A}} + \frac{\text{Actual Area of Occupancy B}}{\text{Allowable Area of Occupancy A}} \leq 1$$

Story	Description & Use	A: Building Area per Story (actual)	B: Table 506.2[4] Area	C: Area for Frontage Increase[1,5]	D: Allowable Area per Story or Unlimited[2,3]
1					
2					
3					

(1) Frontage area increases from Section 506.2 are computed thus:
a. Perimeter which fronts a public way or open space having 20 feet minimum width = ____(F)
b. Total Building Perimeter = _____(P)
c. Ratio (F/P) = _____(F/P)
d. W = Minimum width of public way = _____(W)
e. Percent of Frontage increase: $I_f = 100[F/P - 0.25] \times W/30 =$ _____%
(2) Unlimited area appliable under conditions of Section 507.
(3) Maximum Building Area = total number of stories in the building x D (maximum 3 stories) (506.2).
(4) The maximum area of open parking garages must comply with Tabe 406.5.4.
(5) Frontal increase I based on unsprinklered area value in Tabe 506.2.

ALLOWABLE HEIGHT

	Allowable	Shown on Plans	Code Reference
Building Height in Feet (Table 504.3)			
Building Height in Feet (Table 504.3)			

[1] Provide code reference if the "Shown on Plans" quantity is not based on Table 504.3 or 504.4.

FIRE PROTECTION REQUIREMENTS

Building Element	Fire Separation Distance (feet)	Rating Req'd	Rating Provided (w/ ___* reduction)	Detail # and Sheet #	Design # for Rated Assembly	Sheet # for Rated Penetration	Sheet # for Rated Joints
Structural Frame, including columns, girders and trusses							
Bearing walls							
Exterior							
North							
East							
West							
South							
Interior							
Non-Bearing walls and partitions							
Exterior							
North							
East							
West							
South							
Interior walls and partitions							
Floor construction including support beams and joists							
Floor Ceiling Assembly							
Columns Supporting Floors							

PERCENTAGE OF WALL OPENING CALCULATIONS

Fire Separation Distance (Feet) from Property Lines	Degree of Openings Protection (Table 705.8)	Allowable Area (%)	Actual Shown on Plans (%)

LIFE SAFETY SYSTEM REQUIREMENTS

Emergency Lighting: ☐No ☐Yes
Exit Signs: ☐No ☐Yes
Fire Alarm: ☐No ☐Yes
Smoke Detection Systems: ☐No ☐Yes ☐Partial
Carbon Monoxide Detection: ☐No ☐Yes

LIFE SAFETY PLAN REQUIREMENTS

Life Safety Plan Sheet # _____
☐Fire and smoke rated wall locations (Chapter 7)
☐Assumed and real property line locations (if not on the site plan)
☐Exterior wall opening area with respect to distance to assumed property lines (705.8)
☐Occupancy Use for each area as it relates to occupant load calculation (Table 1004.1.2)
☐Occupant loads for each area
☐Exit sign locations
☐Exit access travel distances (1017)
☐Common path of travel distances (1006.2.1 & 1006.3.2 (1))
☐Dead end lengths (1020.4)
☐Clear exit widths for each exit door
☐Maximum calculated occupant load capacity each exit door can accommodate based on egress width (1005.3)
☐Actual occupant load for each exit door
☐A separate schematic plan indicating where fire rate floor/ceiling and/or roof structure is provided for purposes of occupancy separation
☐Location of doors with panic hardware (1010.1.10)

ACCESSIBLE DWELLING UNITS
(1107)

UNIT CLASSIFICATIONS	TOTAL UNITS	ACCESSIBLE UNITS REQUIRED	ACCESSIBLE UNITS PROVIDED	TYPE A UNITS REQUIRED	TYPE A UNITS PROVIDED	TYPE B UNITS REQUIRED	TYPE B UNITS PROVIDED	TOTAL ACCESSIBLE UNITS PROVIDED

ACCESSIBLE PARKING
(1106)

LOT OR PARKING AREA	TOTAL # OF PARKING SPACES		# OF ACCESSIBLE SPACES PROVIDED		TOTAL # OF ACCESSIBLE SPACES PROVIDED
	REQUIRED	PROVIDED	96" SPACES	132" SPACES	
TOTAL					

PLUMBING FIXTURE REQUIREMENTS
TABLE (2902.1)

Use	Occ. Load	Waterclosets			Urinals	Lavatories			Showers/ Tubs	Drinking Fountains		Other
		Male	Female	Unisex		Male	Female	Unisex		Regular	Accessible	

ENERGY SUMMARY

ENERGY REQUIREMENTS:
The following data shall be considered minimum and any special attribute required to meet the energy ode shall also be provided. Each Designer shall furnish the required portions of the project information for the plan data sheet. If performance method, state the annual energy cost for the standard reference design vs annual energy cost for the proposed design.

Existing building envelope complies with code: ☐NO ☐YES
Exempt Building: ☐NO ☐YES *Provide code or statutory reference:* _____
Climate Zone: ☐3A ☐4A ☐5A
Method of Compliance: Energy Code ☐Performance ☐Prescriptive
ASHRAE 90.1 ☐Performance ☐Prescriptive

(*If "Other," specify source here*) _____

THERMAL ENVELOPE (Prescriptive Method only)

Roof/ceiling Assembly (each assembly)
Description of assembly: xxx
U-Value of total assembly: xxx
R-value of insulation: xxx
Skylights in each assembly: N/A
U-Value of skylight: N/A
Total square footage of skylights in each assembly: N/A

Exterior Walls (each assembly)
Description of assembly: xxx xxx
U-Value of total assembly: xxx xxx
R-value of insulation: xxx xxx
Openings (windows or doors with glazing)
U-Value of assembly: N/A
Solar heat gain coefficient: N/A
Projection factor: N/A
Door R-Values: N/A

Walls below grade (each assembly)
Description of assembly: xxx
U-Value of total assembly: xxx
R-value of insulation: xxx

2018 APPENDIX B
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS
STRUCTURAL DESIGN
(PROVIDE ON STRUCTURAL SHEETS IF APPLICABLE)
SEE SHEET S001

DESIGN LOADS:
Importance Factors: Snow (I_s) _____
Seismic (I_e) _____

Live Loads: Roof: _____psf
Mezzanine: _____psf
Floor: _____psf
Ground Snow Loads _____psf
Wind Load: Ultimate Wind Speed: _____mph (ASCE-7)
Exposure Category: _____

SEISMIC DESIGN CATGORY: ☐A ☐B ☐C ☐D
Provide the following Seismic Design Parameters
Risk Category: (Table 1604.5) ☐I ☐II ☐III ☐IV
Spectral Response Acceleration: ☐Earthquake ☐Wind
Site Classification (ASCE-7) ☐A ☐B ☐C ☐D ☐E ☐F
Data Source ☐Field Test ☐Presumptive ☐Historical Data

Basic structural system (check one)
☐Bearing Wall ☐Dual w/ Special Moment Frame
☐Building Frame ☐Dual w/ Intermediate R/C or Special Steel
☐Moment Frame ☐Inverted Pendulum

Analysis Procedure ☐Simplified ☐Equivalent Lateral Force ☐Dynamic

Architectural, Mechanical, Components anchored? ☐Yes ☐No

LATERAL DESIGN CONTROL: ☐Earthquake ☐Wind

SOIL BEARING CAPACITIES:
Field Test (provide copy of test report) _____psf
Presumptive bearing capacity _____psf

2018 APPENDIX B
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS
MECHANICAL DESIGN
(PROVIDE ON MECHANICAL SHEETS IF APPLICABLE)
SEE SHEET M001
MECHANICAL SUMMARY

MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT

Thermal Zone:
winter dry bulb: _____
summer dry bulb: _____

Interior Design conditions
winter dry bulb: _____
summer dry bulb: _____
relative humidity: _____

Building heating load: _____

Building cooling load: _____

Mechanical Spacing Conditioning System
Unitary
Description of unit: _____
Heating efficiency: _____
Cooling efficiency: _____
Size category of unit: _____
Boiler
Size category (if oversized, state reason): _____
Chiller
Size category (if oversized, state reason): _____

List equipment efficiencies: _____

2018 APPENDIX B
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS
ELECTRICAL DESIGN
(PROVIDE ON ELECTRICAL SHEETS IF APPLICABLE)
SEE SHEET E001
ELECTRICAL SUMMARY

ELECTRICAL SYSTEM AND EQUIPMENT

Method of Compliance:
Energy Code: ☐Performance ☐Prescriptive
ASHRAE 90.1: ☐Performance ☐Prescriptive

Lighting schedule (each fixture type)
Lamp type required in fixture
Number of lams in fixture
Ballast type used in the fixture
Number of ballasts in fixture
Total wattage per fixture
Total energy wattage specified vs allowed (whole building or space by space)
Total exterior wattage specified vs allowed

Additional Efficiency Package Options
(When using the 2018 NCECC; not required for ASHRAE 90.1)
☐C406.2 More Efficient HVAC Equipment Performance
☐C406.3 Reduced Lighting Power Density
☐C406.4 Enhanced Digital Lighting Controls
☐C406.5 On-Site Renewable Energy
☐C406.6 Dedicated Outdoor Air System
☐C406.7 Reduced Energy Use in Service Water Heating

Building Risk Category: xxx

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SEALS

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10/16/25

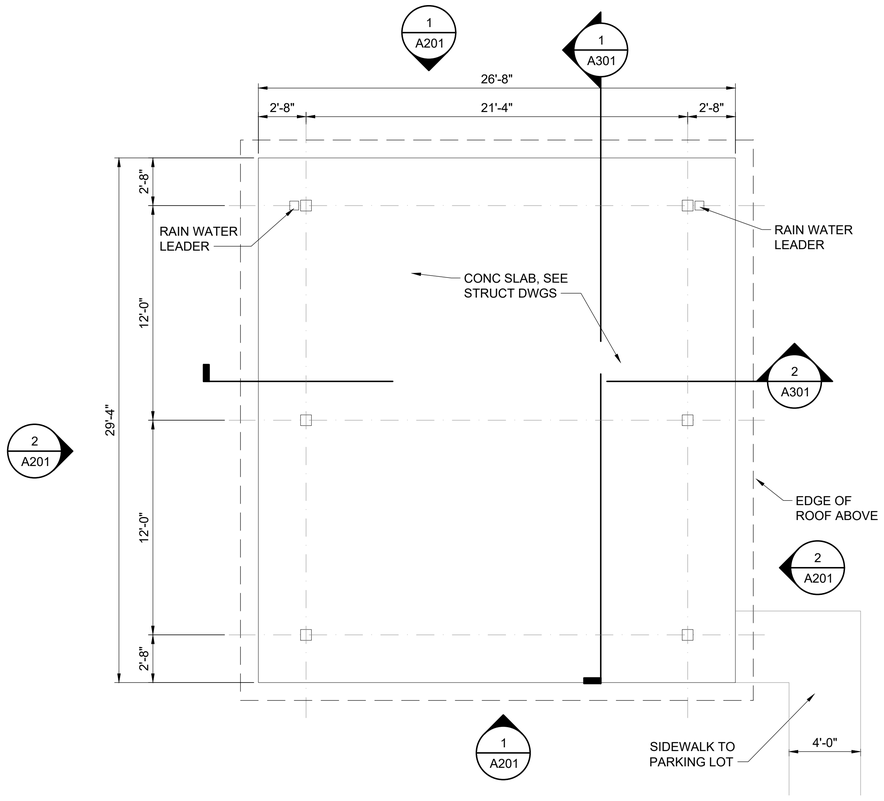
COVE CREEK PARK
SUGAR GROVE, NC

REVISIONS
10/15/25 1 - ADDENDUM #1

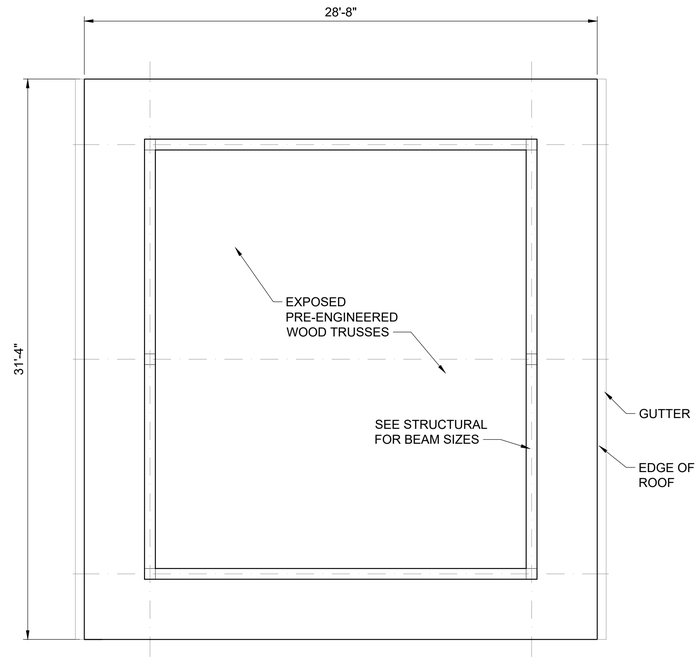
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PROJECT NUMBER: 0980062025
DRAWN BY: R.WALKER
APPROVED BY: C.DEBELIUS

BUILDING CODE INFORMATION

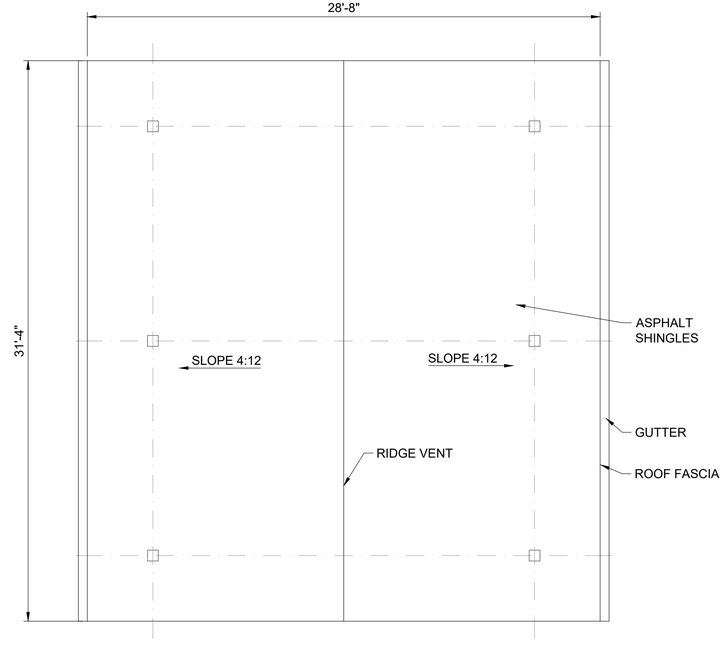
A002



1 A101 FLOOR PLAN
SCALE: 1/4" = 1'-0"



2 A101 REFLECTED CEILING PLAN
SCALE: 1/4" = 1'-0"



3 A101 ROOF PLAN
SCALE: 1/4" = 1'-0"

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PLAN
NORTH

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SEALS

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10/16/25

COVE CREEK PARK
SUGAR GROVE, NC

REVISIONS
10/15/25 1 - ADDENDUM #1

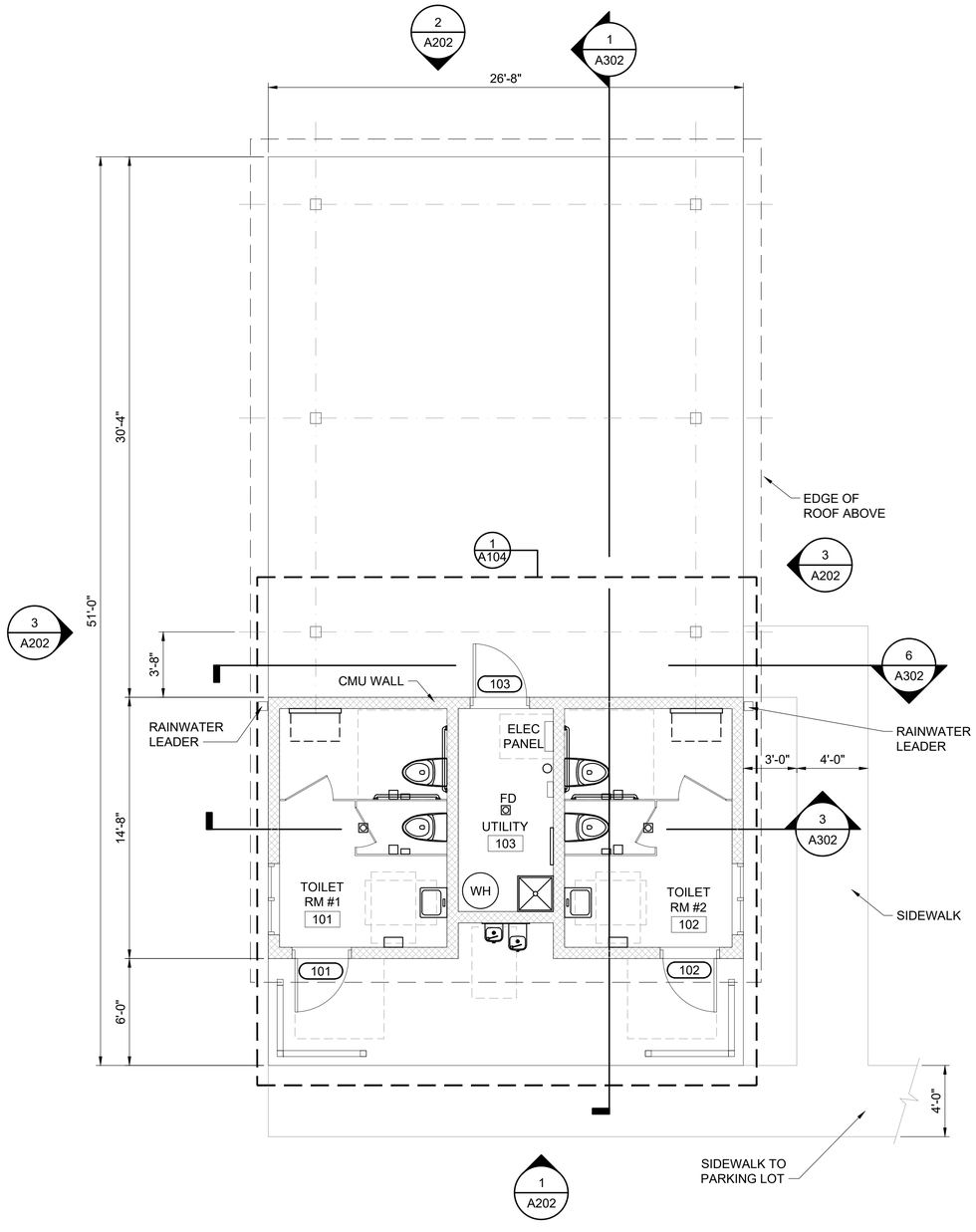
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PICNIC SHELTER
PLANS

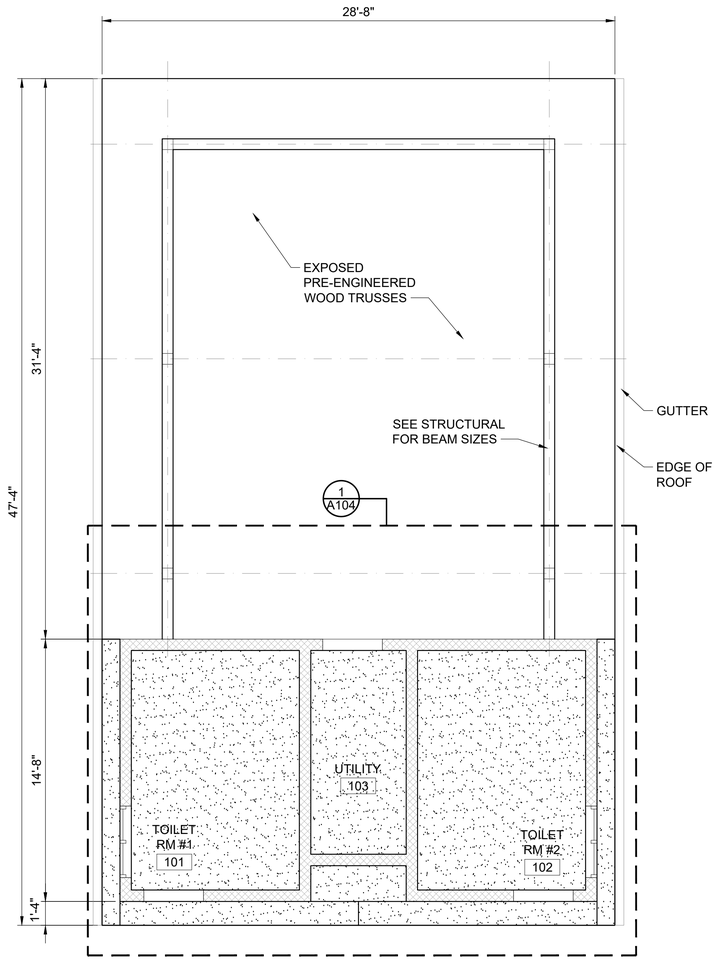
A101

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1 A102 FLOOR PLAN
SCALE: 1/4" = 1'-0"



2 A102 REFLECTED CEILING PLAN
SCALE: 1/4" = 1'-0"

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PLAN
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SEALS

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10/16/25

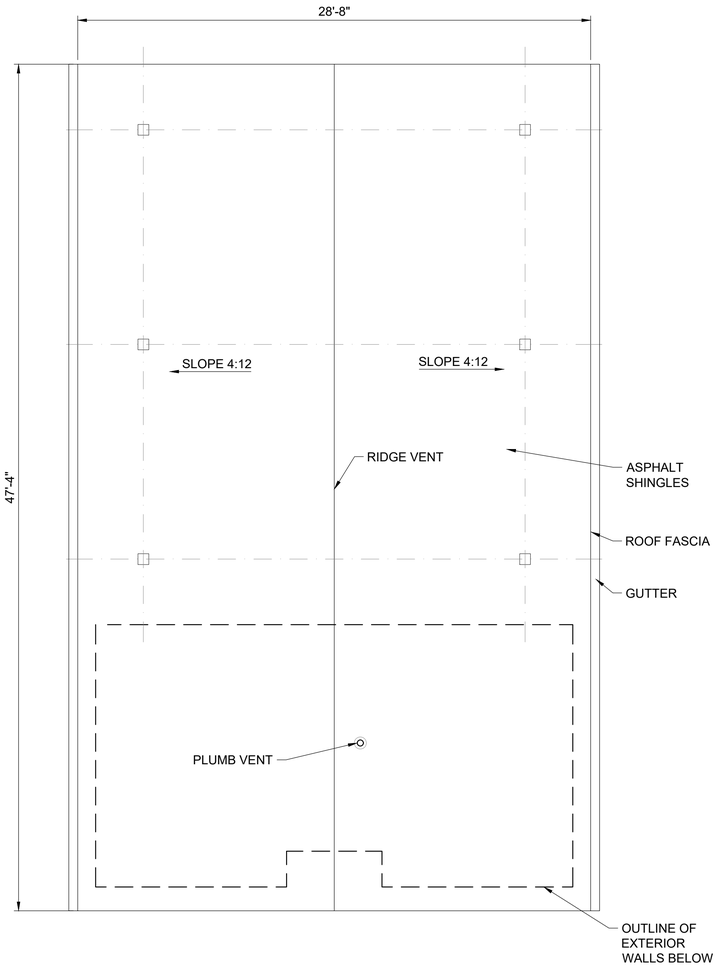
COVE CREEK PARK
SUGAR GROVE, NC

REVISIONS
10/15/25 1 - ADDENDUM #1

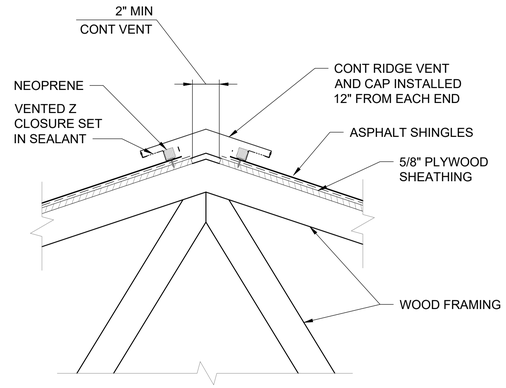
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PAVILION FLOOR & CEILING PLANS

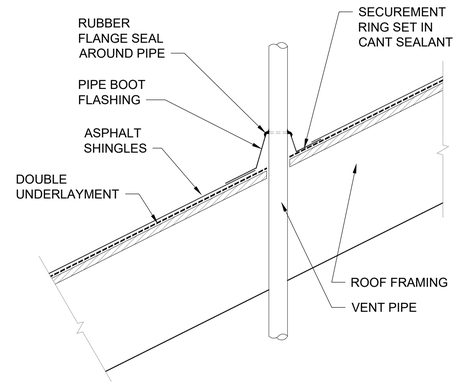
A102



1 A103 ROOF PLAN
SCALE: 1/4" = 1'-0"



6 A103 VENTED RIDGE DETAIL
SCALE: 1 1/2"=1'-0"



7 A103 PLUMBING VENT DETAIL
SCALE: 1 1/2"=1'-0"

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SEALS

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COVE CREEK PARK
SUGAR GROVE, NC

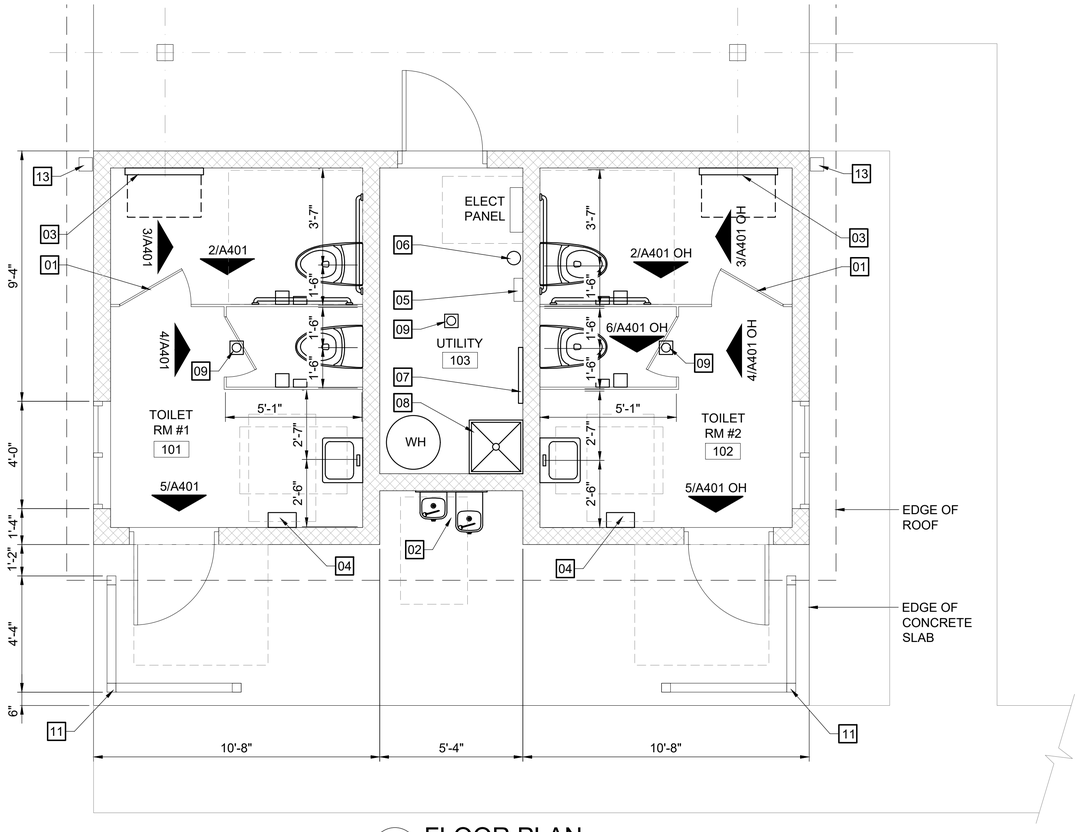
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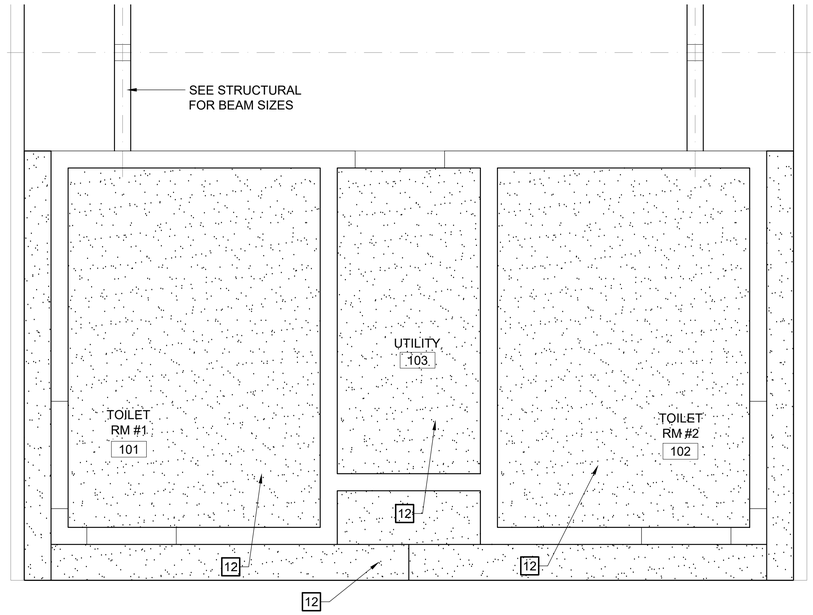
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PAVILION ROOF PLAN & DETAILS

A103



1 A104 FLOOR PLAN
SCALE: 3/8" = 1'-0"



2 A104 REFLECTED CEILING PLAN
SCALE: 3/8" = 1'-0"

GENERAL NOTES

1. BUILDING DIMENSIONS ARE TO FACE OF CMU, FACE OF TOILET PARTITIONS, OR TO CENTERLINE OF FIXTURES, UNLESS NOTED OTHERWISE. SEE INTERIOR ELEVATIONS FOR ADDITIONAL INFORMATION.
2. TOP OF CONCRETE SLAB IS SET AT 0'-0" RELATIVE ELEVATIONS. SEE CIVIL DRAWINGS FOR ABSOLUTE SLAB ELEVATION.
3. PROVIDE ACCESSIBLE SIGNAGE AT RESTROOM DOORS. SEE DETAIL 3/A601.
4. ALL WALLS ARE 8" CMU, UNLESS OTHERWISE NOTED REFERENCE STRUCTURAL FOR TYPICAL SECTION.
5. INTERIOR WALLS BETWEEN UTILITY AND TOILET ROOMS ARE CMU.

SHEET NOTES

01 PROVIDE POWDER COATED STEEL TOILET PARTITIONS AND URINAL SCREENS AS INDICATED.
02 DUAL HEIGHT DRINKING FOUNTAIN WITH BOTTLE FILLER.
03 DIAPER CHANGING STATIONS. SEE 1/A401 FOR MOUNTING HEIGHT.
04 HAND DRYERS. SEE 1/A401 FOR MOUNTING HEIGHT.
05 WALL HEATER. SEE MECH DRAWINGS.
06 BRACKET-MOUNTED FIRE EXTINGUISHER.
07 MOP & BROOM HOLDER.
08 MOP SINK AND FAUCET.
09 FLOOR DRAINS. SLOPE CONCRETE SLAB TOWARDS DRAINS AS INDICATED ON STRUCTURAL DRAWINGS. MAX SLOPE OF 1:48.
10 LIGHT FIXTURES, SEE ELECTRICAL DRAWINGS.
11 WOOD PRIVACY SCREEN WALL, SEE DETAILS ON SHEET A503.
12 FIBER CEMENT BOARD, PAINTED.
13 RAIN WATER LEADER (RWL)

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PLAN NORTH

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10/16/25

COVE CREEK PARK
SUGAR GROVE, NC

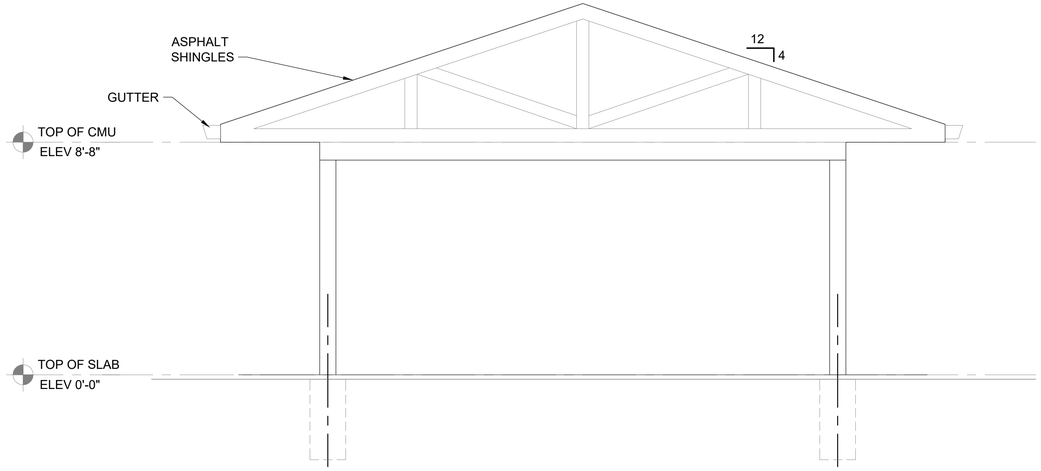
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10/15/25 1 - ADDENDUM #1

SHEET SIZE: 24"x36"
PROJECT NUMBER: 0980062025
DRAWN BY: R.WALKER
APPROVED BY: C.DEBELIUS

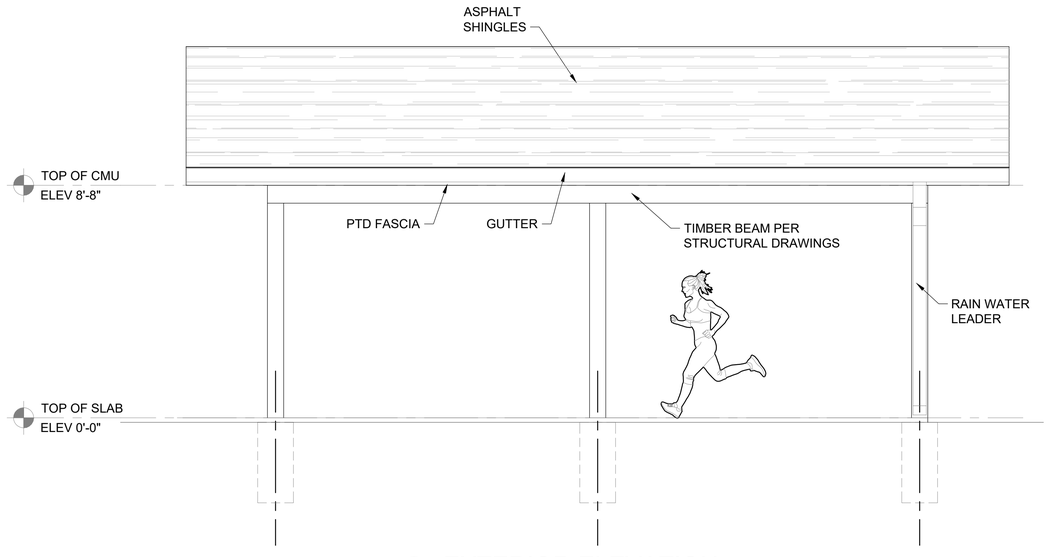
RESTROOM FLOOR & CEILING PLANS

A104

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1 A201 EXTERIOR ELEVATION
SCALE: 3/8" = 1'-0"



2 A201 EXTERIOR ELEVATION
SCALE: 3/8" = 1'-0"

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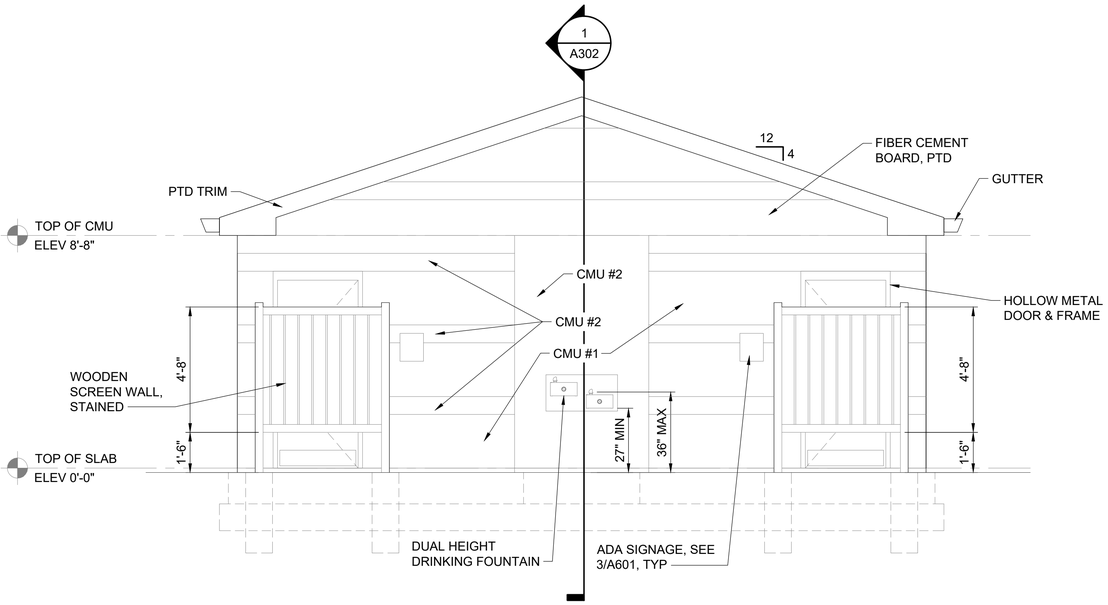
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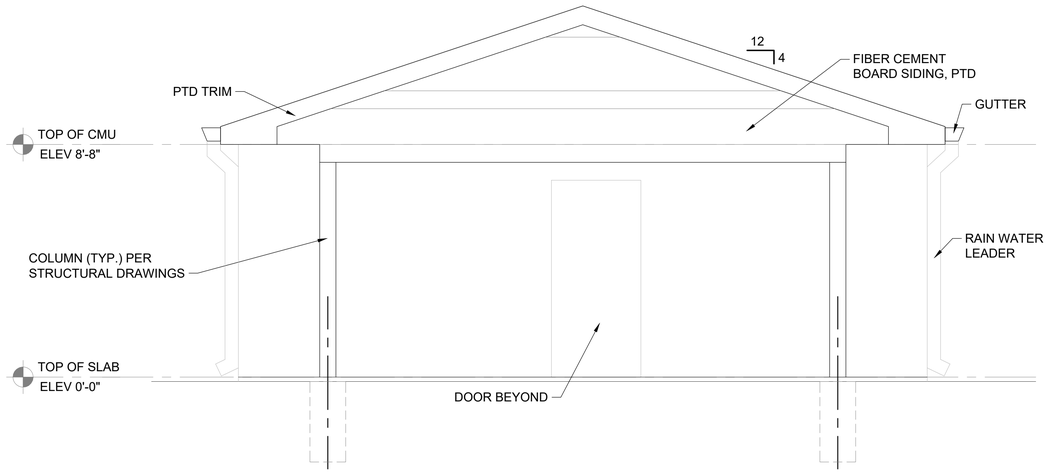
PICNIC SHELTER ELEVATIONS

A201

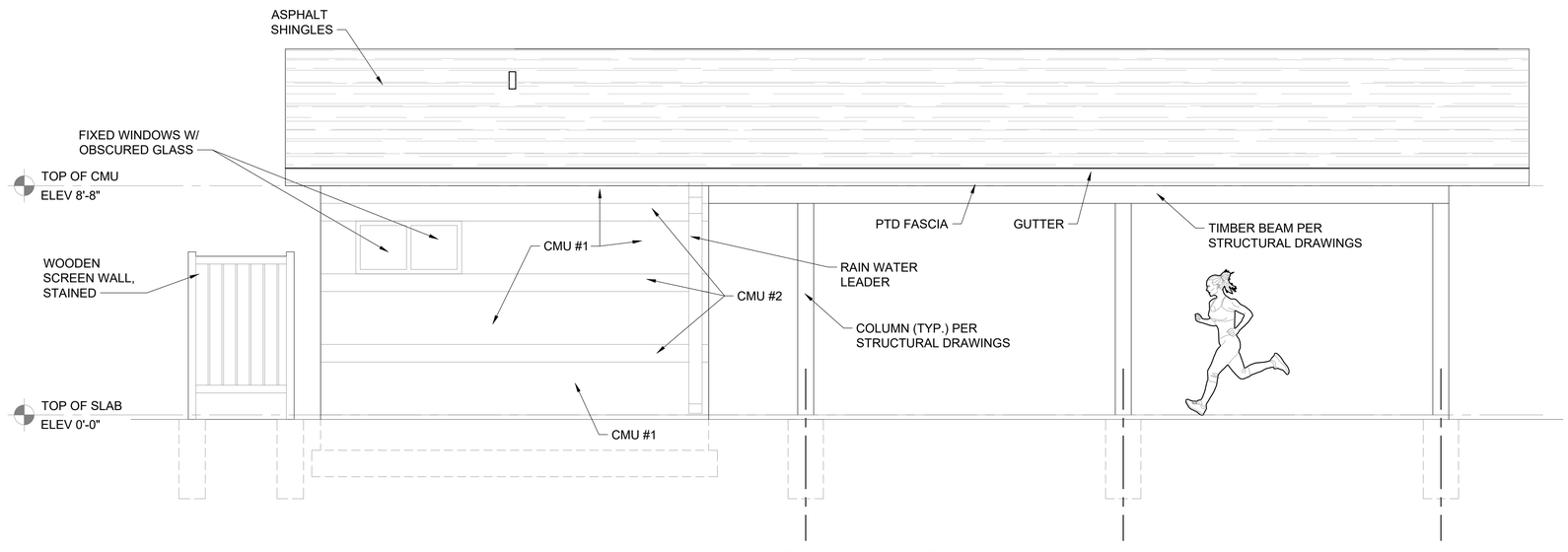
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1 A202 EXTERIOR ELEVATION
SCALE: 3/8" = 1'-0"



2 A202 EXTERIOR ELEVATION
SCALE: 3/8" = 1'-0"



3 A202 EXTERIOR ELEVATION
SCALE: 3/8" = 1'-0"

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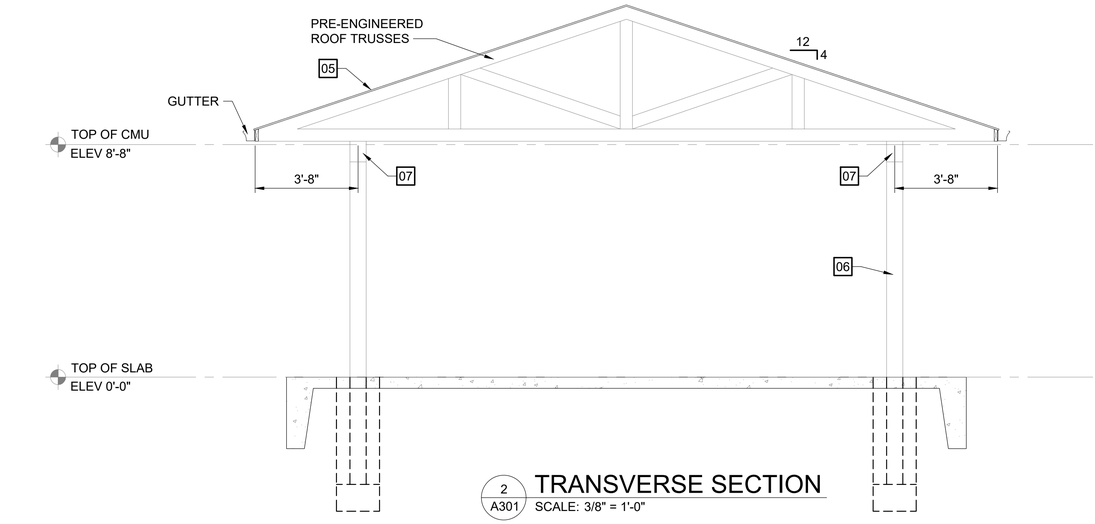
REVISIONS
10/15/25 1 - ADDENDUM #1

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PROJECT NUMBER: 0980062025
DRAWN BY: R.WALKER
APPROVED BY: C.DEBELIUS

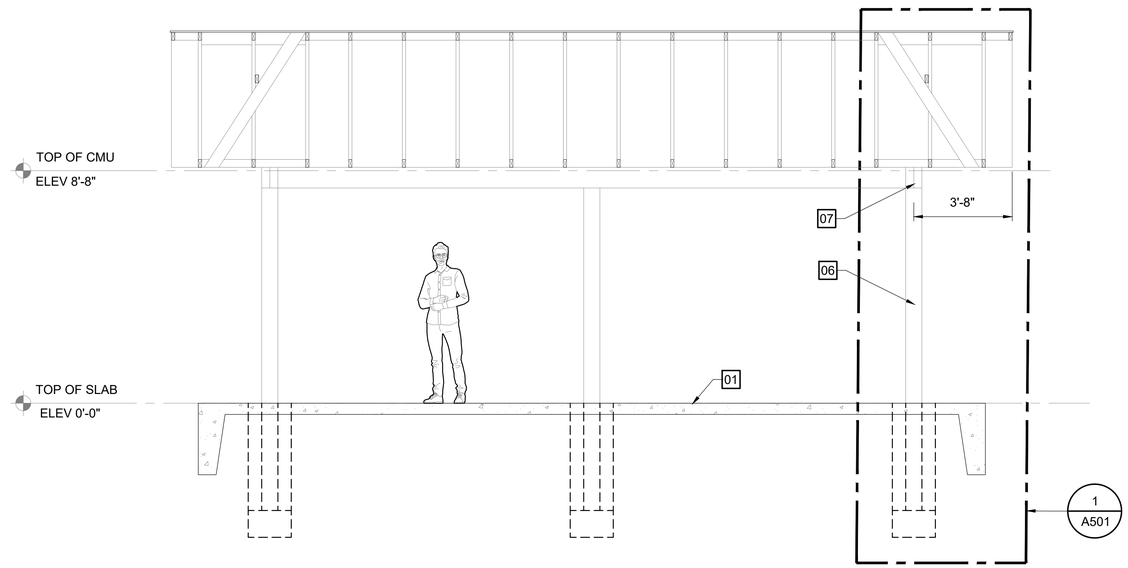
PAVILION
ELEVATIONS

A202

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2 A301 TRANSVERSE SECTION
SCALE: 3/8" = 1'-0"



1 A301 LONGITUDINAL SECTION
SCALE: 3/8" = 1'-0"

SHEET NOTES

01 CONCRETE SLAB WITH VAPOR BARRIER AND COMPACTED GRAVEL.

02 EXTERIOR CMU WALL. SEE STRUCTURAL DWGS AND WALL SECTIONS.

03 INTERIOR CMU PARTITION, SEE STRUCTURAL DWGS AND WALL SECTIONS.

04 WOOD FRAMED WALL ABOVE CMU WALL.

05 ASPHALT SHINGLES AND DOUBLE UNDERLAYMENT OVER ROOF SHEATHING.

06 COLUMN, SEE STRUCTURAL DRAWINGS.

07 PARALLAM BEAM BOLTED TO COLUMN. SEE STRUCTURAL DRAWINGS.

GENERAL NOTES

1. STAIN AND SEAL ALL EXPOSED WOOD SURFACES.
2. PAINT ALL EXTERIOR FIBER CEMENT SIDING AND PVC TRIM.

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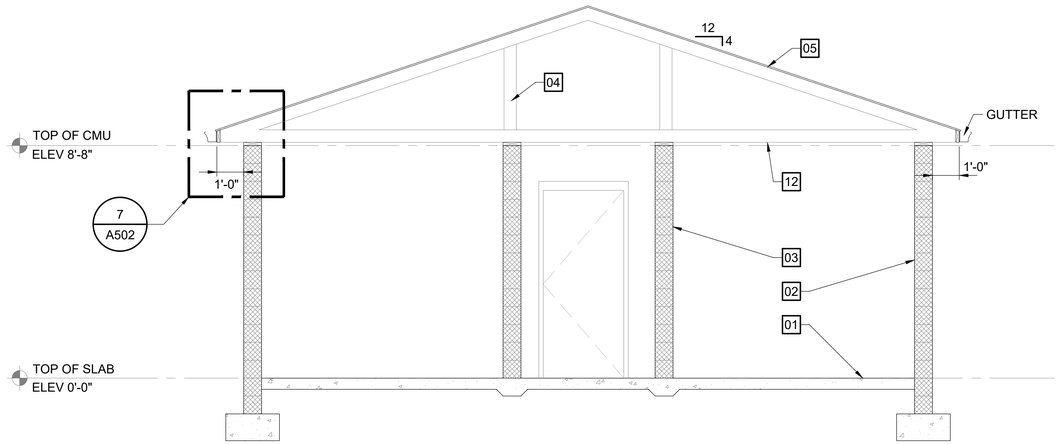
COVE CREEK PARK
SUGAR GROVE, NC

REVISIONS
10/15/25 1 - ADDENDUM #1

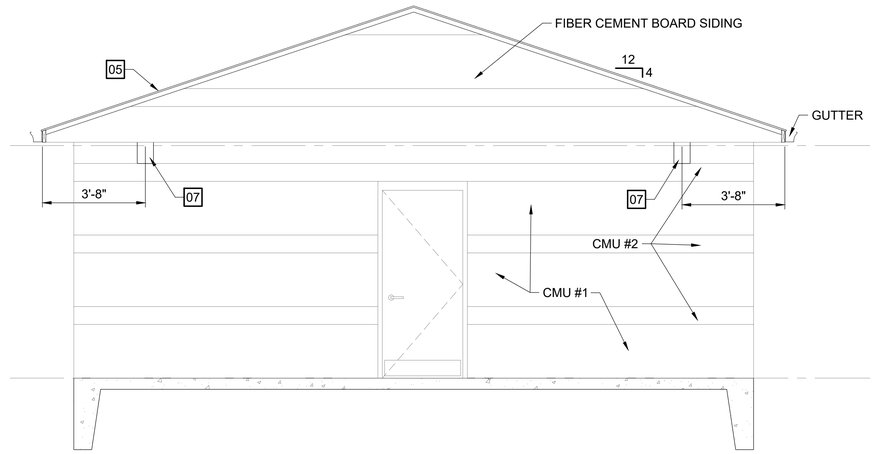
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PROJECT NUMBER: 0980062025
DRAWN BY: R.WALKER
APPROVED BY: C.DEBELIUS

PICNIC SHELTER SECTIONS

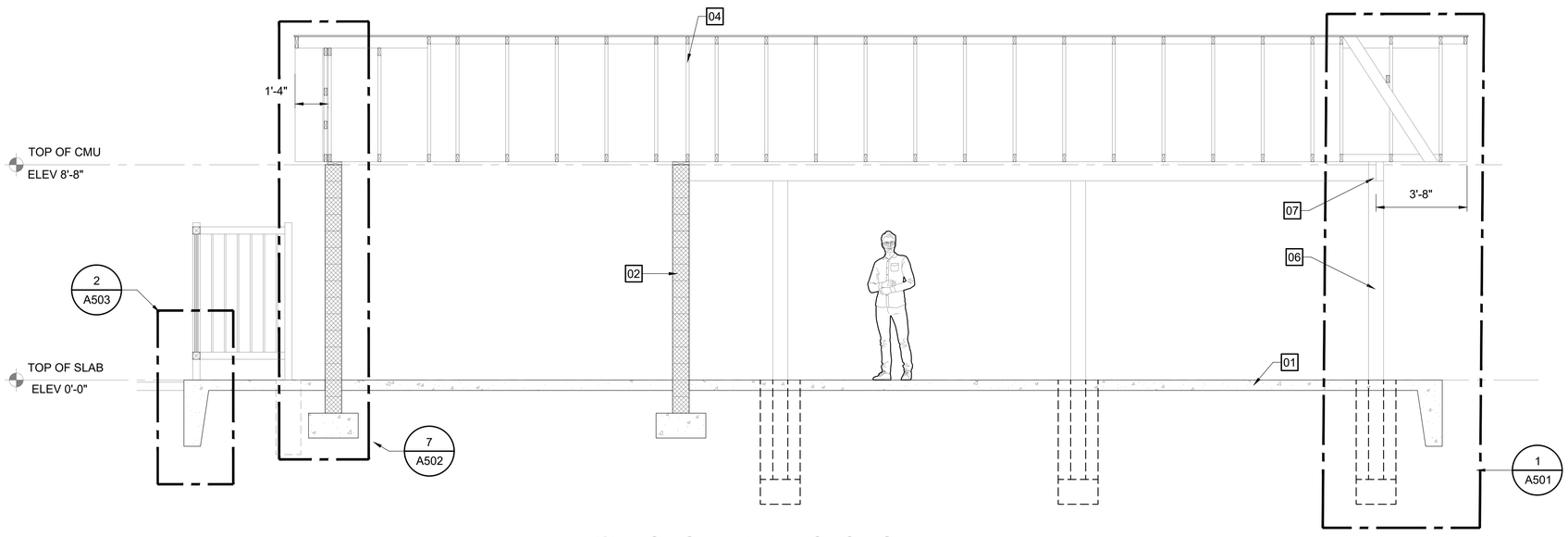
A301



3 A302 TRANSVERSE SECTION
SCALE: 3/8" = 1'-0"



6 A302 ELEVATION/SECTION AT UTILITY ROOM
SCALE: 3/8" = 1'-0"



1 A302 LONGITUDINAL SECTION
SCALE: 3/8" = 1'-0"

SHEET NOTES

01 CONCRETE SLAB WITH VAPOR BARRIER AND COMPACTED GRAVEL.

02 EXTERIOR CMU WALL. SEE STRUCTURAL DWGS AND WALL SECTIONS.

03 INTERIOR CMU PARTITION, SEE STRUCTURAL DWGS AND WALL SECTIONS.

04 WOOD FRAMED WALL ABOVE CMU WALL.

05 ASPHALT SHINGLES AND DOUBLE UNDERLAYMENT OVER ROOF SHEATHING.

06 COLUMN, SEE STRUCTURAL DRAWINGS.

07 PARALLAM BEAM BOLTED TO COLUMN. SEE STRUCTURAL DRAWINGS.

GENERAL NOTES

1. STAIN AND SEAL ALL EXPOSED WOOD SURFACES.
2. PAINT ALL EXTERIOR FIBER CEMENT SIDING AND PVC TRIM.

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SUGAR GROVE, NC

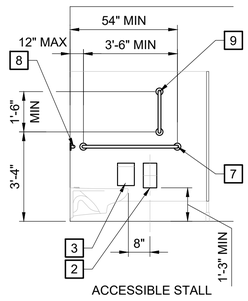
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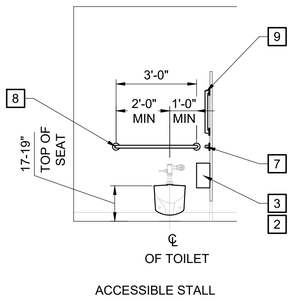
PAVILION SECTIONS

A302

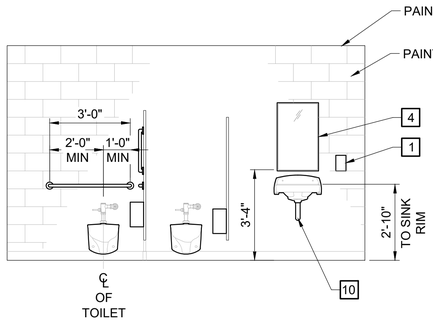
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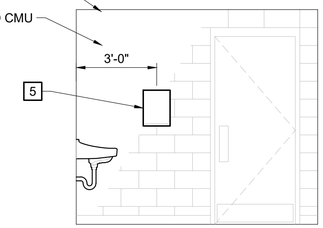
2 A401 INT ELEV - TOILETS
SCALE: 3/8" = 1'-0"



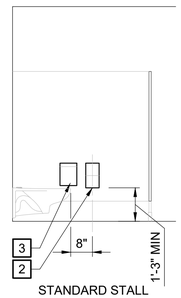
3 A401 INT ELEV - TOILETS
SCALE: 3/8" = 1'-0"



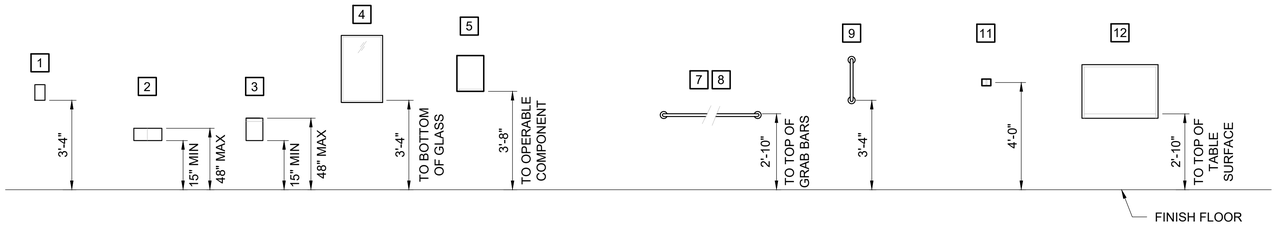
4 A401 INT ELEVATION - TOILETS
SCALE: 3/8" = 1'-0"



5 A401 INT ELEVATION - TOILETS
SCALE: 3/8" = 1'-0"



6 A401 INT ELEVATION - TOILETS
SCALE: 3/8" = 1'-0"



1 A401 TOILET ACCESSORIES MOUNTING HEIGHTS
SCALE: 3/8" = 1'-0"

TOILET ACCESSORY SCHEDULE

#	DESCRIPTION	REMARKS
1	SOAP DISPENSER	-
2	TOILET TISSUE DISPENSER	-
3	SANITARY NAPKIN DISPOSAL	WOMEN'S & FAMILY RESTROOMS ONLY
4	MIRROR	18"W x 30"H, 40" TO BOTTOM OF REFLECTIVE SURFACE
5	HAND DRYER	44" TO BOTTOM OF DRYER
6	NOT USED	-
7	42" GRAB BAR	42" LONG, 1-1/2" DIA
8	36" GRAB BAR	36" LONG, 1-1/2" DIA
9	18" VERTICAL GRAB BAR	18" VERTICAL, 1-1/2" DIA
10	LAVATORY PIPE INSULATION KIT	REQUIRED FOR HOT, COLD & DRAIN
11	MOP & BROOM HOLDER	SEE PLAN FOR LOCATION
12	DIAPER CHANGING STATION	MOUNTED 34" TO TOP OF WORK SURFACE - SEE PLAN FOR LOCATION

NOTE: SEE STANDARD MOUNTING HEIGHTS FOR RESTROOM ACCESSORIES ON THIS SHEET

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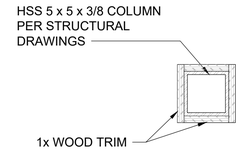
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SHEET SIZE: 24"x36"
PROJECT NUMBER: 0980062025
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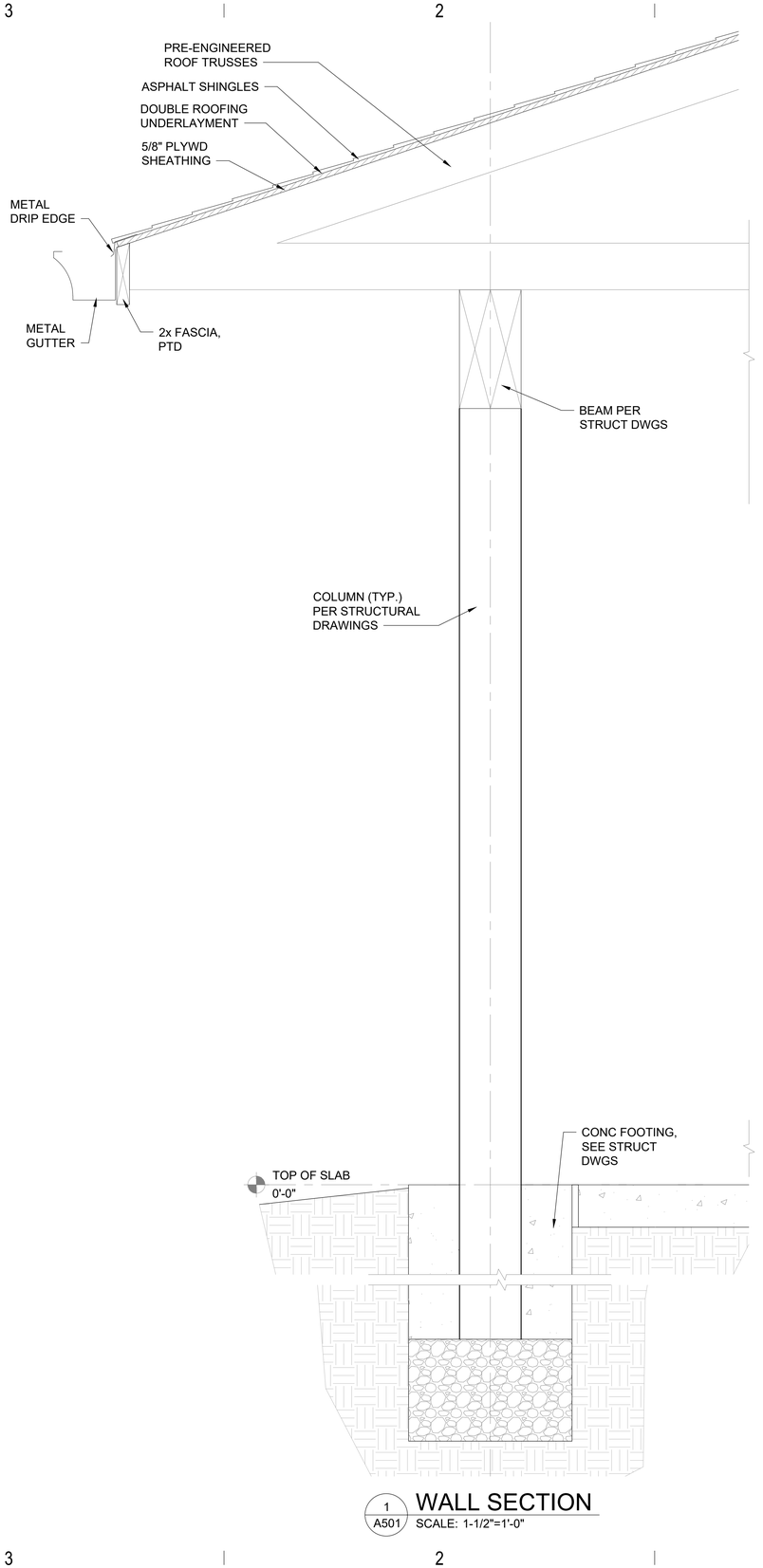
RESTROOM ELEVATIONS

A401

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2 A501 COLUMN DETAIL
SCALE: 1 1/2"=1'-0"



1 A501 WALL SECTION
SCALE: 1-1/2"=1'-0"

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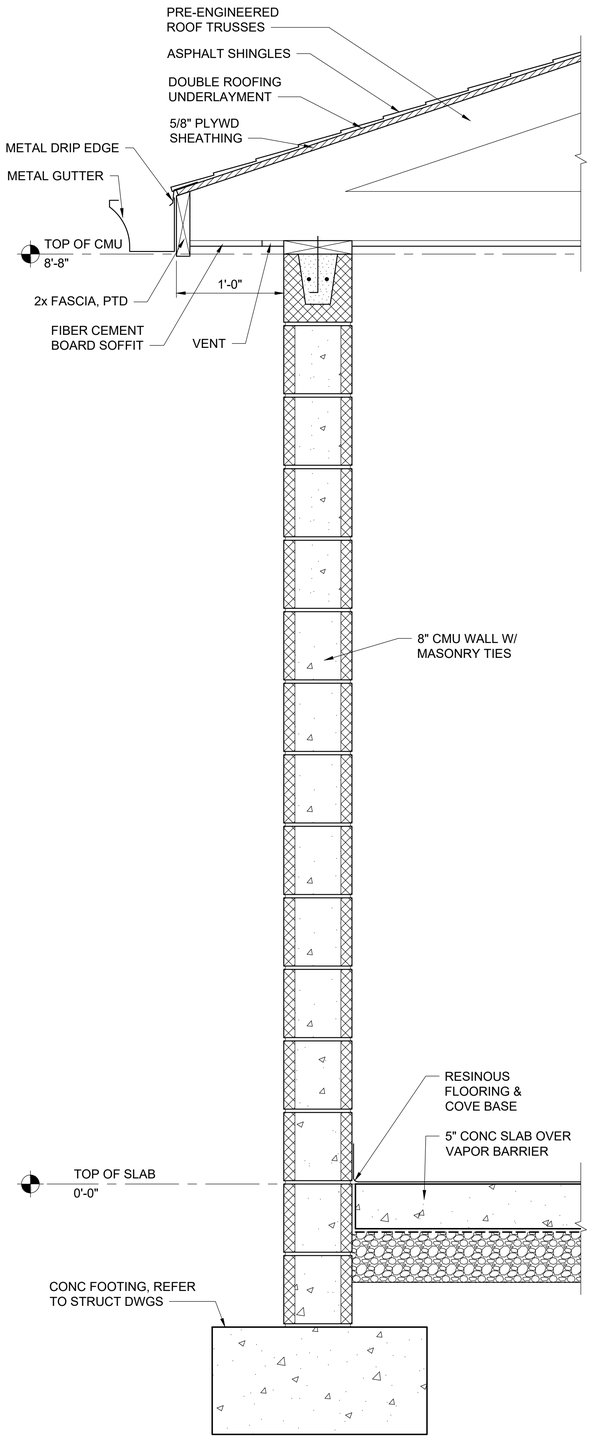
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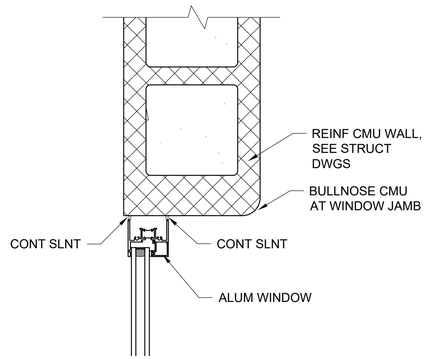
DETAILS

A501

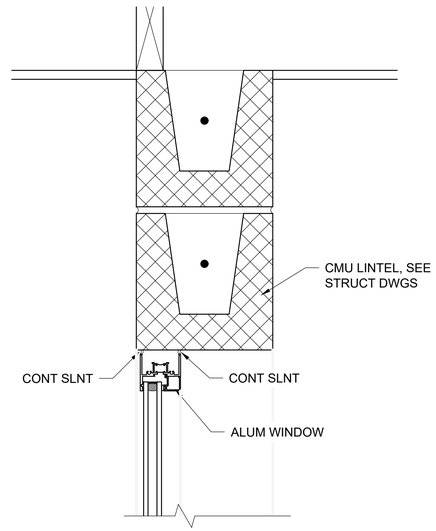
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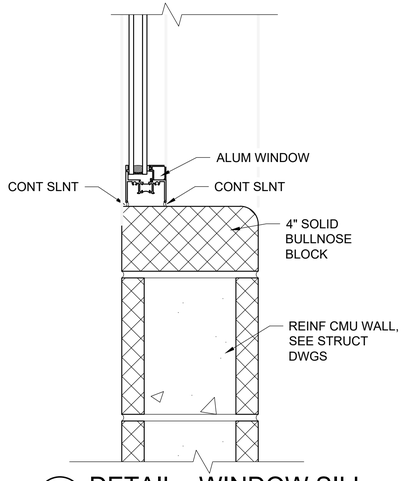
7 A502 WALL SECTION
SCALE: 1-1/2"=1'-0"



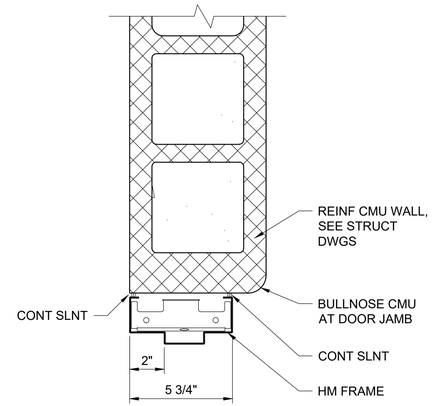
6 A502 DETAIL - WINDOW JAMB
SCALE: 3"=1'-0"



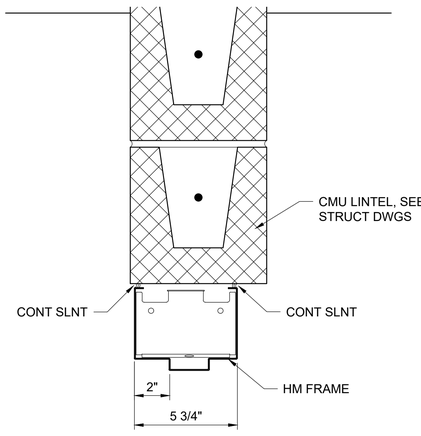
5 A502 DETAIL - WINDOW HEAD
SCALE: 3"=1'-0"



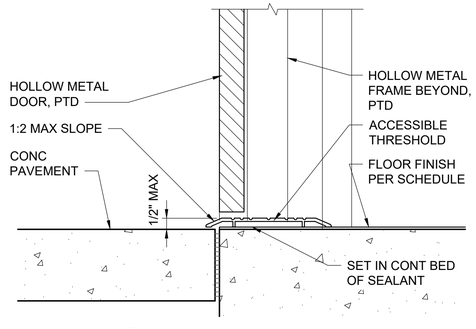
4 A502 DETAIL - WINDOW SILL
SCALE: 3"=1'-0"



3 A502 DETAIL - DOOR JAMB
SCALE: 3"=1'-0"



2 A502 DETAIL - DOOR HEAD
SCALE: 3"=1'-0"



1 A502 DETAIL - THRESHOLD
SCALE: 3"=1'-0"

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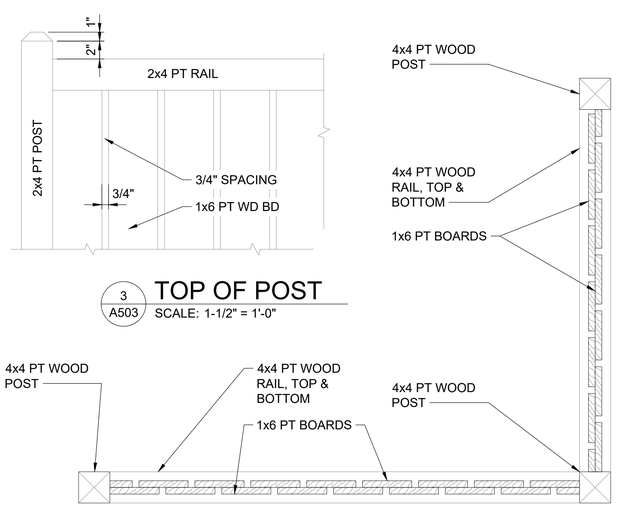
REVISIONS	
10/15/25	1 - ADDENDUM #1

SHEET SIZE:	24"x36"
PROJECT NUMBER:	0980062025
DRAWN BY:	R.WALKER
APPROVED BY:	C.DEBELIUS

DETAILS

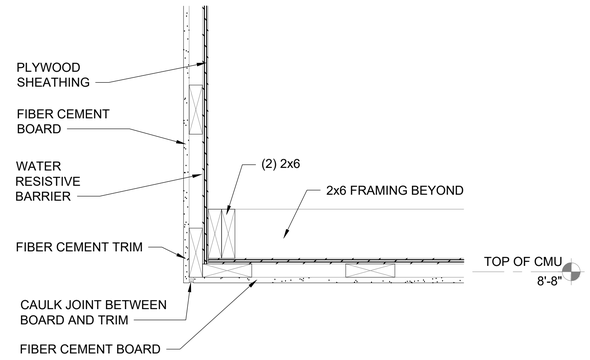
A502

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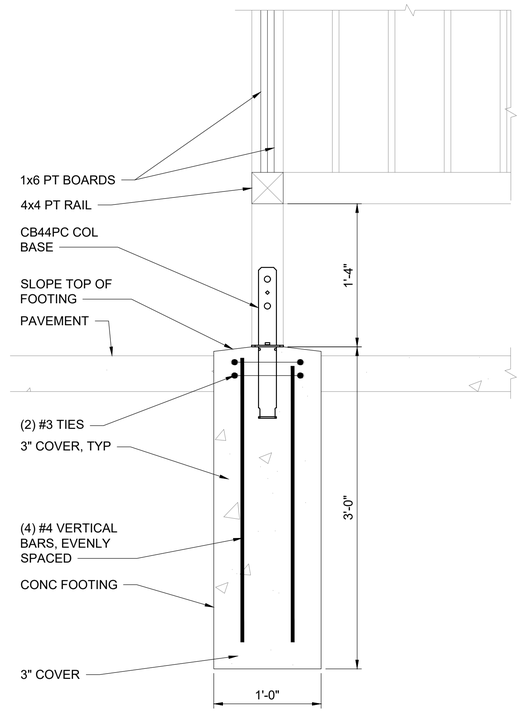


3 A503 TOP OF POST
SCALE: 1-1/2" = 1'-0"

2 A503 WOOD SCREEN PLAN
SCALE: 1-1/2" = 1'-0"



4 A503 SOFFIT & FASCIA ABOVE DRINKING FOUNTAINS
SCALE: 1-1/2"=1'-0"



1 A503 WOOD SCREEN SECTION
SCALE: 1-1/2"=1'-0"

NOT FOR CONSTRUCTION

BREC
A Stratus Team Company
1605 CURTIS BRIDGE ROAD - SUITE 1
WILKESBORO, NC 28697
PHONE : 336.844.4088
www.brec.biz

SEALS

PRELIMINARY

10/16/25

COVE CREEK PARK
SUGAR GROVE, NC

REVISIONS

10/15/25	1 - ADDENDUM #1

SHEET SIZE:	24"x36"
PROJECT NUMBER:	0980062025
DRAWN BY:	R.WALKER
APPROVED BY:	C.DEBELIUS

DETAILS

A503

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DOOR SCHEDULE

NUMBER	FIRE RATING	DOOR			FRAME					HARDWARE SET	NUMBERED NOTES, REMARKS
		SIZE	TYPE	MATERIAL	TYPE	MATERIAL	DETAILS				
							HEAD	JAMB	THOLD		
101	-	3'-0" x 7'-0" x 1-3/4"	1	HM	1	HM	2/A502	3/A502	1/A502	HW-1	1
102	-	3'-0" x 7'-0" x 1-3/4"	1	HM	1	HM	2/A502	3/A502	1/A502	HW-1	1
103	-	3'-0" x 7'-0" x 1-3/4"	1	HM	1	HM	2/A502	3/A502	1/A502	HW-2	

GENERAL NOTES:

A. HOLLOW METAL DOORS AND FRAMES TO BE PAINTED
B. HOLLOW METAL DOORS TO BE INSULATED

NUMBERED NOTES:

1. LOUVER WITH INSECT SCREEN (12" x 12")

HARDWARE SCHEDULE:

HARDWARE SET HW-1:
(1) ALUMINUM HINGES, CONTINUOUS GEARED, HEAVY-DUTY
(1) DEADBOLT WITH ADA THUMBTURN, FINISH US32D - BHMA GRADE 1
(1) 9 INCH PULL WITH PLATE, FINISH US32D.
(1) PUSH PLATE, FINISH US32D.
(1) CLOSER, PARALLEL ARM, FINISH 689
(1) KICKPLATE, US32D
(1) SET WEATHERSTRIPPING
(1) SWEEP, BRUSH TYPE
(1) ALUM THRESHOLD - ADA
(1) CYLINDER
(1) WALL STOP
(1) LATCH GUARD

HARDWARE SET HW-2
(1) ALUMINUM HINGES, CONTINUOUS GEARED, HEAVY-DUTY
(1) INTERCONNECTED STORAGE LOCKSET WITH DEADBOLT, US32D - BHMA GRADE 1
(1) ALUMINUM THRESHOLD, ADA COMPLIANT
(1) KICKPLATE, FINISH US32D
(1) SET WEATHERSTRIPPING
(1) SWEEP, BRUSH TYPE
(1) ALUM THRESHOLD
(1) OVERHEAD STOP
(1) LATCH GUARD

WINDOW SCHEDULE

TYPE	FIRE RATING	SIZE (W x H)	MATERIAL	FINISH	JAMB	HEAD	SILL	NUMBERED NOTES, REMARKS
A	-	4'-0" x 2'-0"	ALUM	ANOD	4/A502	5/A502	6/A502	1, 2

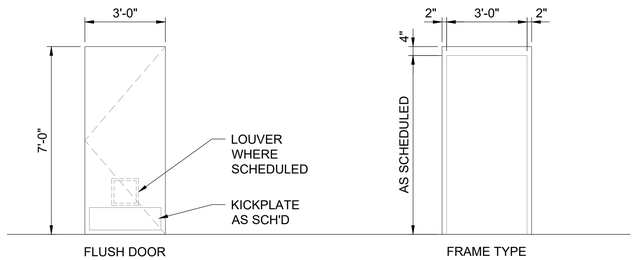
NOTE:

1. FIELD VERIFY ALL WINDOW SIZES.
2. ALL GLAZING TO BE 1" INSULATED GLASS UNITS W/ INTERIOR PANE OBSCURED GLASS

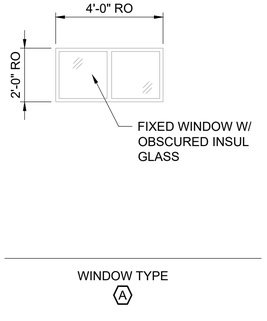
FENESTRATION REQUIREMENTS

TYPE	U-FACTOR	SHGC	AIR INFILTRATION
FIXED	0.38	0.40	0.02
OPERABLE	0.45	0.40	0.02
ENTRANCE DOOR	0.77	0.40	0.02

NOTE: AIR INFILTRATION RATE MEASURED IN CFM/SF



1 A601 DOOR AND FRAME TYPES
SCALE: 3/8" = 1'-0"



2 A601 WINDOW TYPES
SCALE: 3/8" = 1'-0"

FINISH SCHEDULE

ROOM		FLOOR	BASE	WALLS		CEILING		NUMBERED NOTES, REMARKS
NUMBER	NAME			MATERIAL	FINISH	MATERIAL	FINISH	
101	TOILET RM #1	RES	RES	CMU	PNT-1	FCB	-	
102	TOILET RM #2	RES	RES	CMU	PNT-1	FCB	-	
103	UTILITY ROOM	CONC	-	CMU	-	FCB	-	

GENERAL NOTES:

1. PAINT/STAIN ALL NEW WALL SURFACES AND TRIM. COLOR TO BE DETERMINED.
2. NUMBERS FOR FINISHES INDICATE DIFFERENT VARIATION OF COLOR OR FINISH.

LEGEND:

PNT	PAINT
GWB	ABUSE RESISTANT GYPSUM BOARD
FCB	FIBER CEMENT BOARD
RES	RESINOUS FLOORING
WD	WOOD
STN	STAIN

EXTERIOR COLOR LEGEND

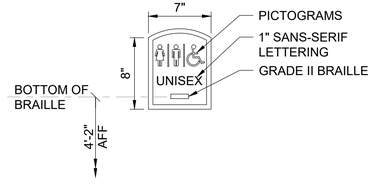
NOTE: MANUFACTURERS' NAMES ARE FOR REFERENCE ONLY AND ARE NOT INTENDED TO LIMIT COMPETITION. SIMILAR PRODUCTS BY OTHER MANUFACTURERS MAY BE USED. SUBMIT SAMPLES OF PRODUCTS OF MANUFACTURERS NOT INDICATED FOR APPROVAL.

MATERIAL	COLOR SELECTION
CMU #1	NITTERHOUSE MASONRY - SPLIT FACE A-41, TAN
CMU #2	NITTERHOUSE MASONRY - GROUND FACE NM-196, POWER BLUE
CMU #5	JOHNSON CONCRETE PRODUCTS - GRAY BLOCK
HOLLOW METAL DOORS	SHERWIN WILLIAMS - SW2811 ROOKWOOD BLUE GREEN
DOOR & WINDOW FRAMES	SHERWIN WILLIAMS - SW2810 ROOKWOOD SASH GREEN
EAVE, FASCIA, SOFFIT & TRIM	SHERWIN WILLIAMS - SW2829 CLASSICAL WHITE
FIBER CEMENT BOARD #1 (VERT SURFACES ONLY)	SHERWIN WILLIAMS - SW9664 SUN SALUTATION
FIBER CEMENT BOARD #2	SHERWIN WILLIAMS - SW6798 ICEBERG
ASPHALT SHINGLES	OWENS CORNING ESTATE GRAY
TOILET PARTITIONS	POWER COATED STEEL, METALLIC SILVER

INTERIOR COLOR LEGEND

NOTE: MANUFACTURERS' NAMES ARE FOR REFERENCE ONLY AND ARE NOT INTENDED TO LIMIT COMPETITION. SIMILAR PRODUCTS BY OTHER MANUFACTURERS MAY BE USED. SUBMIT SAMPLES OF PRODUCTS OF MANUFACTURERS NOT INDICATED FOR APPROVAL.

MATERIAL	COLOR SELECTION
WALL PAINT (PNT - 1)	SHERWIN WILLIAMS - SW9546 LUNAR LITE
CEILING PAINT	CREAM
INTERIOR TRIM	LIGHT WARM GRAY
RESINOUS FLOOR	ACE AVANT, ACRYLIC SEALER, MEDIUM BLUE



3 A601 SIGNAGE DETAIL
SCALE: 1 1/2"=1'-0"

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COVE CREEK PARK
SUGAR GROVE, NC

REVISIONS
10/15/25 1 - ADDENDUM #1

SHEET SIZE: 24"x36"
PROJECT NUMBER: 0980062025
DRAWN BY: R.WALKER
APPROVED BY: C.DEBELIUS

SCHEDULES

A601

MATERIAL IDENTIFICATION

MATERIAL	ELEVATION	SECTION
COMPACTED SUBGRADE		
NON-COMPACTED SUBGRADE		
STRUCTURAL FOAM		
RIGID INSULATION		
GROUT		
BRICK VENEER		
CONCRETE MASONRY UNIT		
CAST-IN-PLACE CONCRETE		
STRUCTURAL PRECAST CONCRETE		
STEEL		
CONTINUOUS WOOD MEMBER		
WOOD BLOCKING		

PLAN INDICATORS

THE FOLLOWING INDICATORS MAY BE USED THROUGHOUT THE STRUCTURAL PLANS

SSR#	SHEAR STUD REINFORCING MARK
DC#	DROP CAP
⊗	HOLDOWN ANCHOR LOCATIONS
(X)	WOOD SHEAR WALL MARK
BB#	MASONRY BOND BEAM
MTB#	MASONRY TIE BEAM
CB#	CONCRETE BEAM
CTB#	CONCRETE TIE BEAM
CC#	CONCRETE COLUMN MARK
TC#	CONCRETE TIE COLUMN MARK
MC#	MASONRY COLUMN MARK
(X)	CGS OF BANDED POST-TENSIONING STRANDS MEASURED FROM BOTTOM OF SLAB IN INCHES.
[X]	CGS OF DISTRIBUTED POST-TENSIONING STRANDS MEASURED FROM BOTTOM OF SLAB IN INCHES
CJ	INDICATES SLAB CONSTRUCTION JOINT
TSWF#	THICKENED SLAB WALL FOUNDATION
SF#	STEP FOUNDATION
TSE#	THICKENED SLAB EDGE
F#	ISOLATED SPREAD FOUNDATION
WF#	WALL FOUNDATION
TSF#	THICKENED SLAB FOUNDATION
RWF#	RETAINING WALL FOUNDATION
HF#	HOLDOWN FOUNDATION
CRW	CONCRETE RETAINING WALL
MRW	RETAINING MASONRY WALL

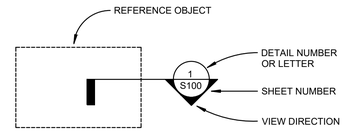
PLAN SYMBOLOGY

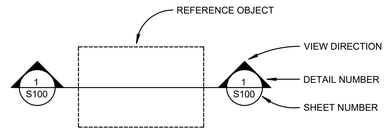
THE FOLLOWING INDICATORS MAY BE USED THROUGHOUT THE STRUCTURAL PLANS

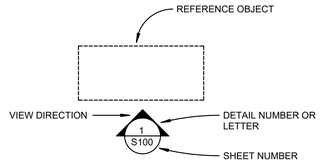
- WOOD OR CFS BEARING WALL
- WOOD OR CFS NON-BEARING WALL
- SHEAR WALL
- CMU WALL
- CONCRETE WALL
- CURB
- SLOPE DOWN
- SLOPE UP
- STEP DOWN
- STEP DOWN WITH SLOPE
- VALLEY

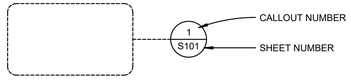
ELEVATION & SECTION CALLOUTS

THE FOLLOWING MAY BE USED THROUGHOUT STRUCTURAL DRAWINGS TO REFERENCE OTHER VIEWS.



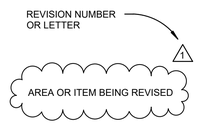




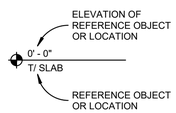


UNIVERSAL SYMBOLS

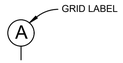
THE FOLLOWING MAY BE USED THROUGHOUT STRUCTURAL DRAWINGS.



REVISION CLOUD



ELEVATION DESIGNATION



GRID REFERENCE



WORK POINT



FLAT FACE BREAK

LINE BREAK



CURVED FACE BREAK

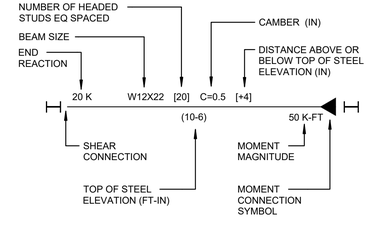
SYMBOLIC LINEWORK

THE FOLLOWING MAY BE USED THROUGHOUT STRUCTURAL DRAWINGS.

	CENTERLINE		FLUSH BEAM OR GIRDER
	MATCHLINE		TRUSS/JOIST
	GRID LINE		BEAM
	CONTROL JOINT		STEEL BEAM
	FOUNDATION LINE		STEEL JOIST
	MECHANICAL EQUIPMENT		DECK DIRECTION
	MECHANICAL DUCTWORK		PLUMBING LINES

FRAMING ANNOTATIONS

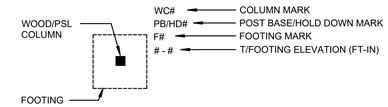
THE FOLLOWING MAY BE USED THROUGHOUT STRUCTURAL DRAWINGS.

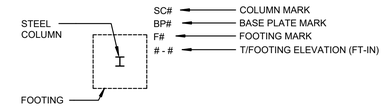


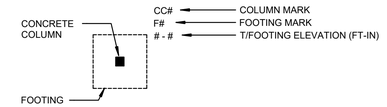
CB#	CONCRETE BEAM EXTENTS
MB#	MASONRY BEAM EXTENTS

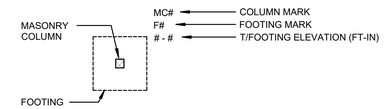
FOUNDATION ANNOTATIONS

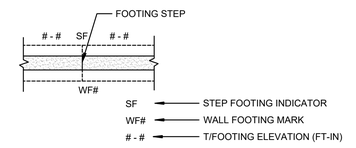
THE FOLLOWING ANNOTATIONS MAY BE USED THROUGHOUT STRUCTURAL DRAWINGS.









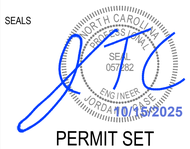


RMW#	MASONRY RETAINING WALL EXTENTS
RCW#	CONCRETE RETAINING WALL EXTENTS

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SEALS



PERMIT SET

09/17/25

REVISIONS

SHEET SIZE:	24"x36"
PROJECT NUMBER:	JLC25.0117.00
DRAWN BY:	JJC, GJH
APPROVED BY:	JTC

SYMBOLS & LEGEND STRUCTURAL

S001

Joseph, Lawrence & Co
Consulting Engineers
1180 HARWOOD AVE. SUITE 3000
ALTAMONTE SPRINGS, FLORIDA 32714
TEL: 321.972.4466
WWW.JLCENG.COM
FL CA NO. 37088
JLC25.0117.00

GENERAL CONDITIONS

1. IF MATERIALS, QUANTITIES, STRENGTHS OR SIZES INDICATED BY THE DRAWINGS OR SPECIFICATIONS ARE NOT IN AGREEMENT WITH THESE NOTES, THE MOST STRINGENT SHALL BE PROVIDED.
2. STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH PROJECT SPECIFICATIONS. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
3. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE ERECTION PROCEDURE AND SEQUENCE TO ENSURE THE SAFETY OF THE BUILDING AND ITS COMPONENT PARTS DURING ERECTION. THIS INCLUDES, BUT IS NOT LIMITED TO, THE ADDITION OF WHATEVER TEMPORARY BRACING, GUYS OR TIE-DOWNS MAY BE NECESSARY. SUCH MATERIAL SHALL BE REMOVED AND SHALL REMAIN THE PROPERTY OF THE CONTRACTOR AFTER COMPLETION OF THE PROJECT.
4. ALL DIMENSIONS AND ELEVATIONS SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE VERIFIED BY THE CONTRACTOR TO CONFORM TO THOSE SHOWN ON THE ARCHITECTURAL DRAWINGS.
5. THE STRUCTURE IS DESIGNED TO BE SELF-SUPPORTING AND STABLE AFTER THE BUILDING IS COMPLETE. THE CONTRACTOR'S RESPONSIBILITY IS TO SUPPORT, BRACE AND SECURE EXISTING STRUCTURE AS REQUIRED. CONTRACTOR IS SOLELY RESPONSIBLE FOR THE SAFETY OF THE BUILDING DURING CONSTRUCTION.
6. VISITS TO THE SITE BY THE ENGINEER WILL BE FOR OBSERVATION AND SHALL NOT INCLUDE INSPECTIONS. THE PURPOSE OF THE ENGINEER'S VISITS WILL BE TO ASSIST IN QUALITY CONTROL AND HELP ACHIEVE CONFORMANCE WITH THE CONSTRUCTION DOCUMENTS. THE VISITS SHOULD NOT BE CONSTRUED AS SUPERVISION OF CONSTRUCTION.
7. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR HAVING VISITED THE SITE AND HAVING FAMILIARIZED HIMSELF WITH ALL EXISTING CONDITIONS. ANY QUESTIONS OR DISCREPANCIES FOUND WITH REGARD TO THE DRAWINGS SHALL BE BROUGHT TO THE ATTENTION OF THE DESIGNERS BEFORE SUBMITTING A PROPOSAL. FIELD MEASURE EXISTING CONDITIONS PRIOR TO FABRICATION OF MATERIALS.

DESIGN LOADS

1. THE FOLLOWING DESIGN LOADS ARE IN ACCORDANCE WITH THE 2024 NORTH CAROLINA BUILDING CODE AND PROVISIONS OF THE ASCE 7-22.
2. SUPERIMPOSED DEAD LOADS:
   - B. ROOF TRUSSES
     - BOTTOM CHORD 10 PSF
     - TOP CHORD (SHINGLES) 10 PSF
3. LIVE LOADS
   - ROOF AND AWNINGS 20 PSF
   - HANDRAILS AND GUARDS 50 PLF
     (ANY DIRECTION AND ANY POINT) 200 LB
   - INTERMEDIATE RAILS 50 LB
     (ANY DIRECTION AND ANY POINT)
   - GRAB BARS (ANY DIRECTION AND ANY POINT) 250 LB
5. WIND LOADS
   - ULTIMATE DESIGN WIND SPEED V_{ult}= 107 MPH
   - NOMINAL DESIGN WIND SPEED V_{asd}= 83 MPH
   - RISK CATEGORY II
   - WIND EXPOSURE C
   - ENCLOSURE CLASSIFICATION ENCLOSED
   - INTERNAL PRESSURE COEFFICIENT GC_{pi} = +/-0.18
   - SEE COMPONENTS AND CLADDING PRESSURES ON SHEET S004
6. RAIN LOADS
   - RAIN LOAD INTENSITY i = 3.2 IN/HR
   - DESIGN RAIN LOAD R = N/A (SLOPED ROOF)
7. SEISMIC LOADS
   - SEISMIC USE GROUP GROUP II
   - SEISMIC DESIGN CATEGORY B
   - SEISMIC SITE CLASS D
   - SHORT PERIOD SPECTRAL RESPONSE ACCELERATION S_S = 0.31
   - 1-SEC PERIOD SPECTRAL RESPONSE ACCELERATION S_1 = 0.089
   - SHORT PERIOD DESIGN SPECTRAL RESPONSE ACCELERATION S_{DS} = 0.24
   - 1-SEC PERIOD SPECTRAL RESPONSE ACCELERATION S_{D1} = 0.13
   - BASIC SEISMIC-FORCE RESISTING SYSTEM: *ORDINARY REINFORCED MASONRY SHEAR WALLS*
   - SEISMIC RESPONSE MODIFICATION FACTOR R = 2.0
   - ANALYSIS PROCEDURE: *EQUIVALENT LATERAL FORCE PROCEDURE*
   - SEISMIC RESPONSE COEFFICIENT C_S = 0.037
8. SNOW LOADS
   - GROUND SNOW LOAD P_g = 45.0 PSF
   - FLAT ROOF SNOW LOAD P_f = 35.3 PSF
   - EXPOSURE B
   - SNOW EXPOSURE FACTOR C_e = 1.0
   - SNOW LOAD IMPORTANCE FACTOR I = 1.0
   - THERMAL FACTOR C_t = 1.12
   - ROOF SLOPE FACTOR C_s = 1.0
   - SLOPED ROOF SNOW LOAD P_S = 35.3 PSF

SUBMITTAL & SHOP DRAWINGS

1. SUBMITTALS THAT DO NOT MEET THE REQUIREMENTS BELOW WILL BE RETURNED WITHOUT REVIEW.
2. FOUR COPIES OF SHOP DRAWINGS SHALL BE SUBMITTED. FOLLOW THE ARCHITECT'S INSTRUCTIONS FOR DISTRIBUTION.
3. THE GENERAL CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR THE FOLLOWING ITEMS
   - A. REINFORCING STEEL
   - B. PRE-ENGINEERED TRUSSES (*)

   * INDICATES THAT SHOP DRAWINGS MUST BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF THE PROJECT. ALL SHOP DRAWINGS SIGNED AND SEALED BY A PROFESSIONAL ENGINEER SHALL BE ACCOMPANIED BY A SET OF SIGNED AND SEALED CALCULATIONS, SEE THE REQUIREMENTS BELOW.
4. DETAILER SHALL BE RESPONSIBLE FOR CHECKING ALL ARCHITECTURAL, ELECTRICAL AND MECHANICAL DRAWINGS FOR OPENINGS AND EMBEDS, EFFECTING STRUCTURAL MEMBERS.
5. THE CONTRACT DOCUMENTS WILL GOVERN OVER THE SHOP DRAWINGS UNLESS OTHERWISE SPECIFIED IN WRITING BY THE ENGINEER OF RECORD.
6. CHANGES AND ADDITIONS MADE ON RESUBMITTALS SHALL BE CLEARLY INDICATED WITH A CLOUD AND NOTE. THE PURPOSE OF THE RESUBMITTAL SHALL CLEARLY BE NOTED ON THE TRANSMITTAL. THE REVIEW WILL BE LIMITED TO THOSE ITEMS CAUSING THE RESUBMITTAL.
7. SHOP DRAWINGS SHALL BEAR THE INITIALS OF THE DETAILER'S CHECKER AND BE APPROVED BY THE CONTRACTOR BEFORE SUBMITTAL TO ENGINEER. NON-CONFORMING SUBMITTALS WILL BE RETURNED WITHOUT REVIEW.
   - A. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY COMPLIANCE WITH THE CONTRACT DOCUMENTS AS TO QUANTITY, LENGTH, ELEVATIONS, DIMENSIONS, ETC.
   - B. REVIEW OF THE SHOP DRAWING DOES NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY FOR ERRORS AND OMISSIONS ASSOCIATED WITH THE PREPARATION OF SHOP DRAWINGS.
8. THE USE OF REPRODUCTIONS OF THESE CONTRACT DRAWINGS BY ANY CONTRACTOR, SUB-CONTRACTOR, ERECTOR, FABRICATOR, OF MATERIAL SUPPLIER IN LIEU OF PREPARATION OF SHOP DRAWINGS SIGNIFIES HIS ACCEPTANCE OF ALL INFORMATION SHOWN HEREON AS CORRECT, AND OBLIGATES HIMSELF TO ANY JOB EXPENSE, REAL OR IMPLIED, ARISING DUE TO ANY ERRORS THAT MAY OCCUR HEREON.
9. IF REPRODUCTIONS OF THESE CONTRACT DRAWINGS ARE USED IN LIEU OF PREPARATION OF SHOP DRAWINGS, THE ARCHITECT'S, ENGINEER'S, OR OTHER DESIGN CONSULTANT'S TITLE BLOCK SHALL BE REMOVED AND REPLACED WITH A TITLE BLOCK LISTING THE FOLLOWING ITEMS:
   - A. NAME, ADDRESS, AND TELEPHONE NUMBER OF CONTRACTOR, SUB-CONTRACTOR, ETC. SUBMITTING SHOP DRAWINGS.
   - B. SHEET NUMBER
   - C. DATE DRAWINGS PREPARED, INITIALS OF PERSON WHO PREPARED DRAWINGS, AND PERSON WHO CHECKED DRAWINGS.

   *ANY REPORDUCTION OF THESE CONTRACT DRAWINGS NOT COMPLYING WITH THE ABOVE WILL BE REJECTED WITHOUT REVIEW.
10. CALCULATION REQUIREMENTS:
    - A. CALCULATIONS AS REQUIRED BY DRAWINGS SHALL BE SUBMITTED WITH THE REQUIRED SHOP DRAWINGS AT THE SAME TIME AS THE SUBMITTAL.
    - B. ALL CALCULATIONS SUBMITTED SHALL BE PRESENTED IN A LEGIBLE MANNER AND FOLLOW AN ORDERLY, LOGICAL SEQUENCE.
    - C. ALL REFERENCES AND SOURCES OF INFORMATION SHALL BE LISTED WITHIN THE CALCULATIONS. COPIES OF PERTINENT SECTIONS SHALL BE INCLUDED.
    - D. BASIC LOADS AND DERIVATION OF FORCES, MOMENTS, SHEARS, REACTIONS, DEFLECTIONS, CAMBERS, ETC., SHALL BE INCLUDED. INCLUDE ALL UNBALANCED LOADING FORCES AS REQUIRED.
    - E. DESIGN ASSUMPTIONS SHALL BE CLEARLY STATED.
    - F. ALL COMPUTER GENERATED CALCULATIONS SHALL BE ACCOMPANIED WITH EXPLANATIONS OF OUTPUT/INPUT DATA (i.e. VARIABLE IDENTIFICATION, LOAD DERIVATION, ETC.). A BRIEF EXPLANATION OF GENERAL THEORY, METHOD AND ASSUMPTIONS USED SHALL BE INCLUDED.
    - G. ALL CALCULATIONS ARE TO BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF THE PROJECT.

SPECIAL INSPECTION AND TESTS

1. SPECIAL INSPECTIONS SHALL BE PROVIDED IN ACCORDANCE WITH SECTIONS 110 AND 1704 OF THE INTERNATIONAL BUILDING CODE BY A CERTIFIED SPECIAL INSPECTOR RETAINED BY THE BUILDING OWNER. THE ARCHITECT, STRUCTURAL ENGINEER, AND BUILDING DEPARTMENT SHALL BE FURNISHED WITH COPIES OF ALL INSPECTION AND TEST RESULTS.
2. THE SPECIAL INSPECTOR SHALL BE A QUALIFIED PERSON WHO SHALL DEMONSTRATE COMPETENCE TO THE SATISFACTION OF THE BUILDING OFFICIAL, FOR THE INSPECTION OF THE PARTICULAR TYPE OF CONSTRUCTION.
3. THE SPECIAL INSPECTOR SHALL KEEP RECORDS OF INSPECTIONS AND FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL AND THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE CONTRACTOR FOR CORRECTIONS, AND IF NOT CORRECTED, TO THE ATTENTION OF THE BUILDING OFFICIAL AND THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE PRIOR TO THE COMPLETION OF THAT PHASE OF WORK. A FINAL REPORT OF INSPECTION DOCUMENTING THE REQUIRED SPECIAL INSPECTIONS AND CORRECTION OF ANY DISCREPANCIES SHALL BE SUBMITTED PERIODICALLY AT A FREQUENCY AGREED UPON BY THE PERMIT APPLICANT AND THE BUILDING OFFICIAL PRIOR TO THE START OF THE WORK.
4. SPECIAL INSPECTIONS AND TESTING SHALL BE PERFORMED FOR THE FOLLOWING TYPES OF CONSTRUCTION:
   - STEEL CONSTRUCTION PER SECTION 1705.2
   - CONCRETE CONSTRUCTION PER TABLE 1705.3
   - MASONRY CONSTRUCTION PER SECTION 1705.4
   - WOOD CONSTRUCTION: PER SECTION 1705.5
     - a. PERIODIC INSPECTION OF FRAMING MEMBER SIZES, SPACING, SPECIES, AND LOCATIONS.
     - b. PERIODIC INSPECTION OF CONNECTIONS OF MEMBERS.
     - c. PERIODIC INSPECTION OF WALL SHEATHING ATTACHMENT TO STUDS.
   - SOIL CONDITIONS PER TABLE 1705.6
   - DRIVEN DEEP FOUNDATIONS PER TABLE 1705.7
   - CAST-IN-PLACE DEEP FOUNDATIONS PER TABLE 1705.8
   - HELICAL PILE FOUNDATIONS PER SECTION 1705.9
5. UNLESS OTHERWISE NOTED, THE FOLLOWING ELEMENTS COMPRISE THE WIND FORCE RESISTING SYSTEM AND ARE SUBJECT TO SPECIAL INSPECTION FOR WIND RESISTANCE IN ACCORDANCE WITH SECTION 1705.12 OF THE INTERNATIONAL BUILDING CODE:
   - A. STRUCTURAL WOOD SHEARWALL AND DIAPHRAGM SYSTEMS REQUIRE PERIODIC INSPECTION FOR NAILING, BOLTING, ANCHORING, AND OTHER FASTENING OF COMPONENTS WITHIN THE WIND FORCE RESISTING SYSTEM INCLUDING HOLDDOWNS.
   - B. COLD-FORMED STEEL LIGHT-FRAME CONSTRUCTION SHEAR WALL AND DIAPHRAGM SYSTEMS REQUIRE PERIODIC INSPECTIONS FOR SCREWING, BOLTING, ANCHORING, AND OTHER FASTENING COMPONENTS WITHIN THE SEISMIC FORCE RESISTING SYSTEM.
6. UNLESS OTHERWISE NOTED, THE FOLLOWING ELEMENTS COMPRISE THE SEISMIC FORCE RESISTING SYSTEM AND ARE SUBJECT TO SPECIAL INSPECTION FOR SEISMIC RESISTANCE IN ACCORDANCE WITH SECTION 1705.13 OF THE INTERNATIONAL BUILDING CODE:
   - A. STRUCTURAL STEEL IN ACCORDANCE WITH SECTION 1705.13.1, INCLUDING STRUTS COLLECTORS, CHORD, AND FOUNDATION ELEMENTS.
   - B. STRUCTURAL WOOD SHEARWALL AND DIAPHRAGM SYSTEMS REQUIRE PERIODIC INSPECTION FOR NAILING, BOLTING, ANCHORING, AND OTHER FASTENING OF COMPONENTS WITHIN THE WIND FORCE RESISTING SYSTEM INCLUDING HOLDDOWNS.
   - C. COLD-FORMED STEEL LIGHT-FRAME CONSTRUCTION SHEAR WALL AND DIAPHRAGM SYSTEMS REQUIRE PERIODIC INSPECTIONS FOR SCREWING, BOLTING, ANCHORING, AND OTHER FASTENING COMPONENTS WITHIN THE SEISMIC FORCE RESISTING SYSTEM.

FOUNDATIONS

1. FOUNDATION DESIGN SHALL BE BASED ON AN ALLOWABLE BEARING PRESSURE OF 1500 PSF IN ACCORDANCE WITH TABLE 1806.2 OF THE 2024 NORTH CAROLINA BUILDING CODE, PRESUMPTIVE LOAD BEARING VALUES, FOR CLAYS AND SILTS. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO ENSURE THAT THE SUBGRADE IS COMPACTED SUFFICIENTLY TO ACHIEVE THIS BEARING PRESSURE.
2. EARTHWORK SHALL BE PERFORMED UNDER THE SUPERVISION OF A LICENSED SOIL TESTING COMPANY TO ASSURE COMPLIANCE WITH REQUIREMENTS OF THE SOILS REPORT AND SPECIFICATIONS.
3. ALL FOOTINGS SHALL BE CENTERED UNDER THE COLUMNS OR WALL ABOVE UNLESS NOTED OTHERWISE.
4. IF REQUIRED, PROVIDE GRAVEL LAYER BELOW SLABS IN ACCORDANCE WITH THE GEOTECHNICAL REPORT FOR RADON GAS VENTING. REFER TO ARCHITECTURAL AND MECHANICAL DRAWINGS FOR ADDITIONAL DETAILS AND LOCATION OF VENT PIPES THROUGH SLABS.

REINFORCING STEEL

1. ALL REINFORCING SHALL BE ASTM A615, GRADE 60. BARS SHALL SECURELY TIE IN PLACE WITH #16 DOUBLE-ANNEALED IRON WIRE, BARS SHALL BE SUPPORTED ON ACCEPTABLE CHAIRS. REINFORCING STEEL SHALL BE DETAILED IN ACCORDANCE WITH THE ACI "MANUAL OF STANDARD PRACTICE FOR DETAILING OF REINFORCED CONCRETE STRUCTURES." CONTRACTOR SHALL COORDINATE REINFORCING STEEL PLACEMENT DETAILS AND PROVIDE TEMPLATES FOR PLACING STEEL IN CONGESTED AREAS AS NECESSARY. SHOP DRAWINGS (INCLUDING PLACING PLANS AND ELEVATIONS) SHALL BE SUBMITTED TO, AND REVIEWED BY, THE ARCHITECTS/ENGINEER BEFORE STARTING REINFORCINGATION.
2. WELDED WIRE REINFORCING SHALL BE ELECTRICALLY WELDED AND CONFORM TO ASTM A185 (FLAT SHEET), YIELD STRENGTH 65,000 PSI. AN 8" MINIMUM LAP SHALL BE PROVIDE FOR SIDE AND END LAP. WELDED WIRE REINFORCING SHALL SUPPORTED IN APPROVED CHAIRS. REFER TO NOTE #6 UNDER SLAB ON GRADE CONSTRUCTION FOR FIBROUS REINFORCING OPTION.
3. NO REINFORCING BARS SHALL BE SPLICED BY WELDING. AT THE CONTRACTOR'S OPTION, MECHANICAL BUTT SPLICING USING AN EXOTHERMIC WELDING PROCESS AND HIGH STRENGTH SLEEVES OR MECHANICAL CONNECTION SPLICING MAY BE USED, PROVIDED THAT THE MECHANICAL SPLICES SHALL BE ICBO APPROVED TO ACHIEVE A MINIMUM TENSILE STRENGTH OF 125 PERCENT OF THE SPECIFIED YIELD STRENGTH OF THE BAR. THE MINIMUM TENSILE STRENGTH REQUIREMENT SHALL BE INCREASED TO 160 PERCENT FOR MECHANICAL SPLICES AT THE INTERFACE OF DIAPHRAGMS AND THE LATERAL SYSTEM, AND FOR MECHANICAL SPLICES WITHIN ELEMENTS OF THE LATERAL SYSTEM. SPLICES DEVICES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL. REINFORCING BARS SHALL BE LAP SPLICED FOR TENSION UNLESS NOTED OTHERWISE ON THE DRAWINGS. #14 AND #18 BARS SHALL NOT BE LAP SPLICED.
4. WELDING OR TACK WELDING OF REINFORCING BARS TO OTHER BARS OR TOE PLATES, ANGLES ETC, IS PROHIBITED, EXCEPT WHERE SPECIFICALLY APPROVED BY THE ENGINEER. WHERE WELDING IS APPROVED, IT SHALL BE DONE BY AWS CERTIFIED WELDERS USING E9018 OR APPROVED ELECTRODES. WELDING PROCEDURES SHALL CONFORM TO THE REQUIREMENTS OF AWS D1.4.
5. MINIMUM CAST-IN-PLACE CONCRETE COVER OVER REINFORCING STEEL, UNLESS NOTED OTHERWISE, SHALL BE AS FOLLOWS:
   - A. CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH: • 3 INCHES.
   - B. CONCRETE EXPOSED TO EARTH OR WEATHER:
     1-1/2 INCHES FOR #5 BARS OR SMALLER
     2 INCHES FOR #6 BARS OR LARGER.
   - C. OTHER CONCRETE:
     - a. WALLS - INTERIOR FACE:
       1-1/2 INCHES FOR #14 AND #18 BARS
       3/4 INCH FOR #11 BARS AND SMALLER
     - b. SLABS:
       #11 BARS AND SMALLER - 3/4 INCH
     - c. BEAMS AND COLUMNS - TIES, STIRRUPS AND SPIRALS:
       1-1/2 INCHES
6. PROVIDE CONTINUOUS REINFORCEMENT WHEREVER POSSIBLE. SPLICE ONLY AS SHOWN OR APPROVED. STAGGER SPLICES WHERE POSSIBLE. USE TENSION SPLICE CLASS "B" UNLESS NOTED OTHERWISE. DOWELS SHALL MATCH SIZE AND SPACING OF THE SPECIFIED REINFORCEMENT AND SHALL BE LAPPED WITH TENSION SPLICES. UNLESS NOTED OTHERWISE LAP LENGTHS EXPRESSED IN NUMBER OF BAR DIAMETERS SHALL BE AS FOLLOWS:

BAR SIZE	NORMAL WEIGHT CONCRETE F'c (PSI)				
	CLASS	3,000	4,000	5,000	6,000
#6 OR SMALLER	A	44 DIA	38 DIA	34 DIA	31 DIA
	B	57 DIA	49 DIA	44 DIA	40 DIA
#7 OR LARGER	A	55 DIA	47 DIA	42 DIA	39 DIA
	B	71 DIA	62 DIA	55 DIA	50 DIA

LAP SPLICE LENGTH NOTES:
- TABLE IS BASED ON a) CLEAR SPACING OF BARS BEING DEVELOPED OR SPLICED NOT LESS THAN ONE BAR DIAMETER (BD), CLEAR COVER NOT LESS THAN ONE DB, AND STIRRUPS OR TIES THROUGHOUT THE LAP SPLICE LENGTH NOT LESS THAN THE CODE MINIMUM, OR b) CLEAR SPACING OF BARS BEING DEVELOPED OR SPLICED NOT LESS THAN 2 DB AND CLEAR COVER NOT LESS THAN ONE DB. FOR ALL OTHER CASES, MULTIPLY TENSION LAP BY 1.5.
- FOR TENSION REINFORCEMENT WITH MORE THAN 12" OF CONCRETE BELOW, OR FOR VERTICAL REINFORCEMENT, MULTIPLY THE LAP SPLICE LENGTH INDICATED IN THE TABLE BY 1.3. HOWEVER, THE LAP SPLICE LENGTH SHALL NOT BE LESS THAN 12".
- FOR TENSION REINFORCEMENT IN LIGHTWEIGHT CONCRETE, MULTIPLY LAP SPLICED LENGTH BY 1.3.

CAST-IN-PLACE CONCRETE

1. ALL CONCRETE SHALL BE NORMAL WEIGHT AND HAVE THE FOLLOWING MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS:

PLACEMENT	MINIMUM STRENGTH	MAX WATER/CEMENT RATIO
FOOTINGS / SLAB ON GRADE:	3500 PSI	0.58
REMAINING CONCRETE:	4000 PSI	0.54

2. ALL CONCRETE SHALL HAVE A SLUMP OF 4" PLUS OR MINUS 1".
3. FOR COLD WEATHER CONCRETE SUBJECT TO FREEZE-THAW CYCLES: PROVIDE 4% AIR ENTRAINMENT.
4. CONCRETE MIX DESIGN SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF ACI 301 CHAPTER 3, METHOD 1 OR METHOD 2. SUBMIT BACKUP DATA AS REQUIRED BY CHAPTER 5 SECTION 5.3. OF THE LATEST EDITION OF ACI 318.
5. ALL REINFORCING STEEL SHALL BE NEW DOMESTIC DEFORMED BILLET STEEL CONFORMING TO ASTM A-615 GRADE 60.
6. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH "THE BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" ACI 318 LATEST EDITION, AND "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS," ACI 301, LATEST EDITION.
7. ALL REINFORCING DETAILS SHALL CONFORM TO "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES" ACI 315 LATEST EDITION, UNLESS DETAILED OTHERWISE ON THE STRUCTURAL DRAWINGS.
8. CONTRACTOR SHALL REVIEW ARCHITECTURAL, ELECTRICAL AND MECHANICAL DRAWINGS FOR SIZE AND LOCATION OF EMBEDDED ITEMS, SLEEVES, SLAB DEPRESSIONS, OPENINGS, ANCHOR BOLTS, SLOPES, ETC. REQUIRED BY OTHER TRADES. THESE ITEMS SHALL BE FURNISHED AND INSTALLED PRIOR TO PLACEMENT OF CONCRETE.
9. WHERE BAR LENGTHS ARE GIVEN ON THE DRAWINGS, THE LENGTH OF ANY HOOK, IF REQUIRED, IS NOT INCLUDED. HOOKS SHALL BE PROVIDED AT DISCONTINUOUS ENDS OF ALL TOP BARS OF BEAMS AND AT SLAB EDGES.
10. CONTRACTOR SHALL PROVIDE SPACERS, CHAIRS, BOLSTERS, ETC. NECESSARY TO SUPPORT REINFORCING STEEL. SUPPORT ITEMS WHICH BEAR ON EXPOSED CONCRETE SURFACES SHALL HAVE ENDS WHICH ARE PLASTIC TIPPED OR STAINLESS STEEL.
11. CONTRACTOR SHALL PROVIDE 3/4 INCH CHAMFER ON ALL EXPOSED CORNERS OF COLUMNS, BEAMS, AND WALLS UNLESS OTHERWISE INDICATED ON THE ARCHITECTURAL DRAWINGS.
12. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCEMENT:
    3" AT CONCRETE PERMANENTLY EXPOSED TO EARTH.
    1-1/2" AT ALL OTHER CONCRETE.
13. HORIZONTAL WALL AND FOOTING BARS SHALL BE BENT 1'-0" AROUND CORNERS OR CORNER BARS WITH 2'-0" LAP SHALL BE PROVIDED.
14. HORIZONTAL KEYWAYS IN CONSTRUCTION JOINTS SHALL BE PROVIDED IN BEAMS, SUPPORTED SLABS, AND WALL FOOTINGS WITH A DEPTH OF 1-1/2" AND HEIGHT EQUAL TO ONE-THIRD OF THE MEMBER'S DEPTH. REINFORCEMENT SHALL BE CONTINUOUS THROUGH CONSTRUCTION JOINTS UNLESS OTHERWISE NOTED ON THE DRAWINGS. CONSTRUCTION JOINTS MAY BE USED ONLY AT LOCATIONS SHOWN ON THE DRAWINGS OR AT OTHER LOCATIONS APPROVED BY THE ARCHITECT.
15. CONTRACTOR SHALL KEEP A COPY OF "FIELD REFERENCE MANUAL" (ACI PUBLICATION SP-15, LATEST EDITION) AT THE PROJECT FIELD OFFICE.
16. MINIMUM LAP LENGTHS ON ALL REINFORCING BAR SPLICES SHALL BE 48 BAR DIAMETERS: FOR BEAMS AND ELEVATED SLABS, LAP BOTTOM STEEL AT THE SUPPORT AND TOP STEEL OVER THE MIDSPAN, UNLESS OTHERWISE NOTED.
17. TESTING LABORATORY SHALL SUBMIT ONE COPY OF ALL CONCRETE TEST REPORTS DIRECTLY TO THE ENGINEER.

CONCRETE SLAB ON GRADE

1. SPECIFICATION: UNLESS NOTED OTHERWISE, SLAB ON GRADE CONSTRUCTION SHALL FOLLOW THE RECOMMENDATIONS OF "THE GUIDE FOR CONCRETE FLOOR AND SLAB CONSTRUCTION ACI 302.1R-04".
2. SUBGRADE PREPARATION: A. AREAS CONTAINING SLAB ON GRADE CONSTRUCTION SHALL BE STRIPPED TO SUFFICIENT DEPTH TO REMOVED ALL VEGETATION, TOP SOIL, ORGANIC AND OTHER UNSUITABLE MATERIALS.
3. REINFORCING STEEL:
   - A. SEE THE DRAWINGS FOR TYPICAL SLAB REINFORCEMENT REQUIREMENTS.
   - B. LAP CONTINUOUS SLAB ON GRADE REINFORCING STEEL 30 BAR DIAMETERS AT SPLICES BUT NOT LESS THAN 12".
   - C. ALL REINFORCING STEEL FOR SLABS ON GRADE SHALL BE CHAIRED WITH SLAB BOLSTERS DESIGNED FOR SUPPORT ON SOIL TO PROVIDED SPECIFIED COVER TO REINFORCING STEEL.
4. SEE DETAILS ON THE DRAWINGS FOR REQUIREMENTS OF CONSTRUCTION JOINTS, CONTROL JOINTS AND POUR SIZE AND SEQUENCE OF SLAB ON GRADE CONSTRUCTION.
5. OPENINGS ON SLAB ON GRADE: UNLESS DETAILED OTHERWISE ON THE DRAWINGS, PROVIDE (1) #5 x OPENING WIDTH +3'-0" AROUND ALL PENETRATION THROUGH SLAB ON GRADE ON GRADE 10" WIDE OR GREATER AND (1) #5 x 3'-0" DIAGONAL CORNERS BARS. SUCH REINFORCEMENT SHALL BE PROVIDED WHETHER OPENING IS SHOWN ON DRAWINGS OR NOT.
6. FIBROUS REINFORCING (OPTION): FIBROUS REINFORCING SHALL BE 100 PERCENT VIRGIN POLYPROPYLENE, FIBRILLATED FIBERS CONTAINING NO REPROCESS EDOLEFIN MATERIALS AND SPECIFICALLY MANUFACTURED TO AN OPTIMUM GRADATION FOR USE AS CONCRETE SECONDARY REINFORCEMENT. VOLUME PER CUBIC YARD SHALL EQUAL A MINIMUM OF 0.1% (1.5 LBS).
7. SLAB ON GRADE SHALL BE PLACED OVER A CONTINUOUS 10 MIL VAPOR BARRIER.

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BREC
A Stratus Team Company
1605 CURTIS BRIDGE ROAD - SUITE 1
WILKESBORO, NC 28697
PHONE : 336.844.4088
www.brec.biz

SEALS

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 057662 ENGINEER JOSEPH LAWRENCE JORDAN

10/15/2025

PERMIT SET

09/17/25

REVISIONS

SHEET SIZE: 24"x36"
PROJECT NUMBER: JLC25.0117.00
DRAWN BY: JJC, GJH
APPROVED BY: JTC

GENERAL NOTES STRUCTURAL

S002

Joseph, Lawrence & Co
Consulting Engineers
1180 HARWOOD AVE. SUITE 3000
ALTAMONTE SPRINGS, FLORIDA 32714
TEL: 321.972.4466
WWW.JLCENG.COM
FL CA NO. 37088
JLC25.0117.00

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MASONRY CONSTRUCTION

1. CONSTRUCTION SHALL MEET THE REQUIREMENTS OF ACI 530/ASCE 5, "BUILDING CODE REQUIREMENTS FOR CONCRETE MASONRY" AND ACI 530.1/ASCE6, "SPECIFICATIONS FOR THE DESIGN AND CONSTRUCTION OF LOAD BEARING CONCRETE MASONRY. ALL HOLLOW LOAD BEARING CONCRETE MASONRY UNITS SHALL CONFORM TO ASTM C90, MEDIUM WEIGHT, TYPE 1. ALL UNITS SHALL BE LAID IN RUNNING BOND USING TYPE S MORTAR WITH HEAD JOINTS. MASONRY MINIMUM STRENGTH F'M = 1500 PSI. MINIMUM BLOCK COMPRESSIVE STRENGTH IS 1900 PSI.

2. USE TYPE S MORTAR IN ACCORDANCE WITH ASTM C270 EXCEPT TYPE M MORTAR BELOW GRADE. HEAD AND BED JOINTS SHALL BE 3/8" FOR THE THICKNESS OF THE FACE SHELL. WEBS ARE TO BE FULLY MORTARED IN ALL COURSES OF PIERS, COLUMNS AND PILASTERS. IN STARTING COURSE, AND WHERE AN ADJACENT CELL IS TO BE GROUTED. REMOVE MORTAR PROTRUSIONS EXTENDING 1/2" OR MORE INTO THE CELL TO BE GROUTED.

3. USE STANDARD (9 GAUGE) HORIZONTAL JOINT REINFORCING CONFORMING TO ASTM A-82 IN EVERY OTHER COURSE. OVERLAP DISCONTINUOUS END 6". USE PREFABRICATED CORNER AND TEES. USE LADDER TYPE JOINT REINFORCING.

4. ALL CELLS CONTAINING REINFORCEMENT SHALL BE FILLED SOLID WITH CONCRETE GROUT CONFORMING TO ASTM C-476, GROUT MIXED SHALL CONTAIN PORTLAND CEMENT ONLY PLUS AGGREGATE. MAXIMUM SIZE OF AGGREGATE SHALL BE 3/8 INCH. SLUMP SHALL BE 8 TO 11 INCHES. WATER REDUCING ADMIXTURES MAY BE USED. GROUT SHALL BE VIBRATED WHILE PLACING TO ENSURE THAT CELLS ARE COMPLETELY FILLED. MINIMUM GROUT COMPRESSIVE STRENGTH BASED ON 28 DAY TEST SHALL BE 3000 PSI USING 3 1/2"X3 1/2"X7" OR 3"X3"X6" TEST SPECIMENS CAST IN MOIST WITH A FIST NON-ABSORBENT BASE AND MASONRY UNITS HAVING THE SAME MOISTURE CONDITIONS AT THOSE BEING LAID FORMING THE SIDE OF THE SPECIMENS. SPECIMEN SHALL BE TESTED ACCORDING TO ASTM C39.

5. VERTICAL BARS SHALL BE HELD IN POSITION AT THE TOP AND THE BOTTOM AND INTERVAL NOT EXCEEDING 8'-0". WHEN A FOUNDATION DOWEL DOES NOT LINE UP WITH CORRESPONDING VERTICAL BAR, IT SHALL NO BE SLOPED MORE THAN ONE HORIZONTAL IN SIX VERTICAL.

6. THE MINIMUM SPLICE LENGTH FOR ALL VERTICAL BARS SHALL BE:
   - 31 INCHES FOR #5 BARS
   - 56 INCHES FOR #6 BARS
   - 75 INCHES FOR #7 BARS

7. PROVIDE DOVETAIL ANCHORS AT 16" C/C, UNLESS NOTED OTHERWISE, WHERE MASONRY WALLS ABUT CONCRETE SURFACES.

WOOD CONSTRUCTION

1. WOOD CONSTRUCTION SHALL CONFORM TO THE NDS "NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION", LATEST EDITION.

2. LUMBER SHALL HAVE THE FOLLOWING MINIMUM PROPERTIES (UNO):

SPECIES	F_b(PSI)	F_{vw}(PSI)	F_c(PSI)	$F_{c\perp}$(PSI)	E(KSI)	E_{min}(KSI)
SYP No. 2-2x4	1100	1450	565	175	1400	510
SYP No. 2-2x6	1000	1400	565	175	1400	510
SYP No. 2-2x8	925	1350	565	175	1400	510
SYP No. 2-2x10	800	1300	565	175	1400	510
SYP No. 2-2x12	750	1250	565	175	1400	510
SPF No. 2	875	1150	425	135	1400	510
LVL BEAM	3100	3000	750	290	2000	1100
LVL COLUMN	2650	3000	750	285	1800	900
PSL BEAM	2900	2900	750	290	2000	1017
PSL COLUMN	2400	2500	425	190	1800	915
GLULAM BEAM	3000	2400	805	300	2100	1110
GLULAM COLUMN (4 PLY OR MORE)	2100	2300	650	300	1900	951
GLULAM COLUMN (2 OR 3 PLY)	2100	1700	650	300	1900	951

3. ALL WOOD IN CONTACT WITH CONCRETE OR EXPOSED TO WEATHER SHALL BE PRESSURE TREATED.

4. ROOF SHEATHING SHALL BE 15/32" PLYWOOD OR OSB, NAILED WITH 0.131"X2-1/2" RING SHANK NAILS AT 6" O.C. AT SUPPORTED EDGES, AND 0.131"X2-1/2" RING SHANK NAILS AT 12" O.C. AT INTERMEDIATE SUPPORTS. PROVIDE ONE PLYWOOD CLIP PER SPAN BETWEEN SHEET EDGES. PROVIDE SOLID 2x BLOCKING BETWEEN SUPPORTS AT ALL HIPS, RIDGES, ALLEYS, AND CHANGES IN ROOF SLOPE.

5. ALL LUMBER SHALL BE STAMPED WITH THE GRADE MARK OF AN APPROVED GRADING AGENCY.

6. PARALLEL STRAND LUMBER (PSL) MEMBER SIZES SHOWN ARE NET; OTHER MEMBER SIZES ARE NOMINAL.

7. NAILING SCHEDULE:

CONNECTION	COMMON NAIL	NUMBER OR SPACING
SOLE PLATE TO TRUSS OR BLOCKING	0.148"x3"	12" OC
STUD TO SOLE PLATE, TOE NAIL	0.131"x2-1/2"	4
DOUBLE STUDS, FACE NAIL	0.148"x3"	24" OC
DOUBLE TOP PLATES, FACE NAIL	0.148"x3"	16" OC
TOP PLATES LAPS AND INTERSECTIONS	0.148"x3"	3
TRUSSES, LAPS AND INTERSECTIONS	0.148"x3"	6
BUILT-UP CORNER STUDS	0.148"x3"	16" OC
STUDS TO SOLE PLATE, END WALL	0.148"x3"	4
TRUSSES TO TOP PLATE, TOE NAIL	0.131"x2-1/2"	3
LADDER TRUSS TO TOP PLATE	0.131"x2-1/2"	6" OC

8. WHERE WOOD BEAMS/HEADERS ABUT WOOD COLUMNS, PROVIDE SIMPSON "HUC" CONNECTORS WITH ALL NAILS SPECIFIED BY THE MANUFACTURER.

9. FASTENERS IN CONTACT WITH PRESERVATIVE-TREATED WOOD, INCLUDING NUTS AND WASHERS, SHALL BE HOT-DIP GALVANIZED PER ASTM 153. ALL CONNECTORS IN CONTACT WITH PRESSURE TREATED WOOD SHALL BE HOT-DIP GALVANIZED PER ASTM 653 AND MADE FROM CLASS G185 SHEER WITH 1.85 OUNCES (MINIMUM) OF ZINC COATING PER SQUARE FEET. FASTENERS AND CONNECTORS IN CONTACT WITH PRESERVATIVE-TREATED LUMBER WITH A USE CATEGORY OF UC4 SHALL BE STAINLESS STEEL. FASTENERS AND ANCHORS SHALL COMPLY WITH TYPE 304 OR 305. CONNECTORS SHALL COMPLY WITH TYPE 316L.

PREFABRICATED WOOD TRUSSES

1. ALL PREFABRICATED WOOD TRUSSES SHALL BE SECURELY FASTENED AT EACH END TO THEIR SUPPORTING WALLS OR BEAMS.

2. PREFABRICATED WOOD TRUSSES SHALL BE DESIGNED IN ACCORDANCE WITH THE LAST EDITION OF THE "NATIONAL DESIGN SPECIFICATION FOR STRESS-GRADE LUMBER AND ITS FASTENERS" AS RECOMMENDED BY THE NATIONAL FOREST PRODUCTS ASSOCIATION.

3. TRUSS MEMBERS AND CONNECTIONS SHALL BE DESIGNED (WITH A MAXIMUM ALLOWABLE STRESS INCREASE FOR LOAD DURATION OF 25% FOR ROOF TRUSSES ONLY) TO WITHSTAND THE LIVE LOADS GIVEN IN THE NOTES AND TOTAL DEAD LOAD.

4. TRUSS MANUFACTURER SHALL SUBMIT SHOP DRAWINGS AND DESIGN NOTES WITH A LICENSED ENGINEER'S SEAL FOR APPROVAL BY THE ARCHITECT. DESIGN NOTES TO INCLUDE THE RATED LOAD CAPACITY OF THE CONNECTORS USED TO SECURE THE MEMBERS, CERTIFICATION OF THE CONNECTOR CAPACITIES AND MANUFACTURER'S LICENSE TO FABRICATE TRUSSES UTILIZING THE CONNECTOR SYSTEM PROPOSED.

5. THE CONTRACTOR SHALL APPROVE FABRICATION AND INSTALLATION DRAWINGS SHOWING SIZE, SHAPE AND LAYOUT PRIOR TO SUBMITTAL FOR REVIEW BY THE ARCHITECT AND ENGINEER BEFORE FABRICATION HAS BEGUN.

6. BRIDGING FOR PRE-ENGINEERED TRUSSES SHALL BE AS REQUIRED BY TRUSS MANUFACTURER, AND THE LOCAL BUILDING CODE, UNLESS NOTED ON PLANS. ALSO WHERE HEEL HEIGHT ON BOTTOM CHORD BEARING TRUSSES EXCEEDS 11" PROVIDE CONTINUOUS LET IN 2x4'S.

ABBREVIATIONS

ABBREV	ABBREVIATION
ACI	AMERICAN CONCRETE INSTITUTE
ADD	ADDITIVE
ADDL	ADDITIONAL
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
AISI	AMERICAN IRON AND STEEL INSTITUTE
ALT	ALTERNATE / ALTERNATIVE
ALUM	ALUMINUM
AR	ANCHOR ROD
ARCH	ARCHITECTURE / ARCHITECTURAL
ASD	ALLOWABLE STRESS DESIGN
ASPH	ASPHALT
ASTM	AMERICAN SOCIETY OF TESTING MATERIALS
AWS	AMERICAN WELDING SOCIETY
B/	BOTTOM OF
BIT	BITUMINOUS / BITUMASTIC
BLDG	BUILDING
BLK	BLOCK
BM	BEAM
BMM	BENCH MARK
BOT	BOTTOM
BP	BASE PLATE
BRG	BEARING
BTWN	BETWEEN
BU	BUILT UP
C	CHANNEL
CB	CONCRETE BEAM
CC	CONCRETE COLUMN
CF	CUBIC FEET (FOOT)
CFS	COLD FORMED STEEL
CI	CAST-IRON
CIP	CAST IN PLACE
CJ	CONSTRUCTION / CONTRACTION JOINT
CL	CENTERLINE
CLR	CLEAR / CLEARANCE
CM	CONCRETE MASONRY
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
COM	COMMENT
CONC	CONCRETE
CONN	CONNECTION
CONST	CONSTRUCTION
CONT	CONTINUOUS
COORD	COORDINATE
CS	CAST-STEEL
CTR	CENTER
CTRD	CENTERED
CVR	COVER
CY	CUBIC YARD
DBA	DEFORMED BAR ANCHOR
DEG	DEGREE
DEMO	DEMOLITION
DEPT	DEPARTMENT
DIA	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DIST	DISTANCE
DN	DOWN
DR	DRAIN
DTL	DETAIL
DWG	DRAWING(S)
EA	EACH
EE	EACH END
EF	EACH FACE
EJ	EXPANSION JOINT
EL	ELEVATION
ELEC	ELECTRIC / ELECTRICAL
ELEV	ELEVATOR
ENGR	ENGINEER
EOS	EDGE OF SLAB
EQ	EQUAL
EQUIP	EQUIPMENT
ES	EACH SIDE
EW	EACH WAY
EXIST	EXISTING
EXP	EXPANSION
EXT	EXTERIOR
FD	FLOOR DRAIN
FDN	FOUNDATION
FIN	FINISH
FLR	FLOOR
FMG	FRAMING
FP	FULL PENETRATION WELD
FS	FAR SIDE
FT	FOOT / FEET
FTG	FOOTING
GA	GAGE / GAUGE
GALV	GALVANIZED
GB	GRADE BEAM
GC	GENERAL CONTRACTOR
GEN	GENERAL
GL	GRID LINE
GRTG	GRATING
GS	GALVANIZED STEEL
HCP	HOLLOW CORE PLANK
HDG	HOT DIP GALVANIZED
HK	HOOK
HORIZ	HORIZONTAL
HSA	HEADED STUD ANCHOR
HSB	HIGH STRENGTH BOLT
HSS	HOLLOW STRUCTURAL STEEL
HT	HEIGHT
ID	INSIDE DIAMETER
IF	INSIDE FACE
IN	INCH
INFO	INFORMATION
INT	INTERIOR
INV	INVERT
JST	JOIST
JT	JOINT
K	KIP (1000 LB)
KO	KNOCK OUT
KWY	KEYWAY
L	ANGLE
LB	POUND
LDG	LANDING
LDT	LONG DIAMETER TAPCON
LG	LONG
LGTH	LENGTH
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL LOC LOCATION
LRFD	LOAD RESISTANCE FACTOR DESIGN
LSH	LONG SIDE HORIZONTAL
LSV	LONG SIDE VERTICAL
LT WT	LIGHT WEIGHT
MATL	MATERIAL
MAX	MAXIMUM
MB	MASONRY BEAM / MACHINE BOLT
MECH	MECHANICAL
MEP	MECHANICAL/ELECTRICAL/PLUMBING
MFG	MANUFACTURING
MFR	MANUFACTURE / MANUFACTURER
MID	MIDDLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MO	MASONRY OPENING
MPH	MILES PER HOUR
MTL	METAL
NIC	NOT IN CONTRACT
NO	NUMBER
NS	NEAR SIDE
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OF	OUTSIDE FACE
OPNG	OPENING
OPP	OPPOSITE PAR PARALLEL
PC	PRECAST CONCRETE
PCF	POUNDS PER CUBIC FEET
PEN	PENETRATION
PERP	PERPINDICULAR
PJF	PREMOLDED BITUMINOUS JOINT FILLER
PL	PLATE
PLF	POUNDS PER LINEAR FOOT
PLY	PLYWOOD PREFAB PREFABRICATED
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	PRESSURE TREATED
QTY	QUANTITY
R	RADIUS
RCP	REINFORCED CONCRETE PIPE
RD	ROOF DRAIN
REF	REFERENCE
REINF	REINFORCE(MENT)
REQD	REQUIRED
RW	RETAINING WALL
SCHED	SCHEDULE
SDS	SELF DRILLING SCREWS
SIM	SIMILAR
SF	SQUARE FOOT
SFTG	STEP FOOTING
SJ	SAWCUT CONTRACTION JOINT
SJI	STEEL JOIST INSTITUTE
SOG	SLAB ON GRADE
SPC	SPACE / SPACES
SPCG	SPACING SPECS SPECIFICATION(S)
SQ	SQUARE
SS	STAINLESS STEEL
SSLT	SHORT SLOTTED TRANSVERSE
SSMA	STEEL STUD MANUFACTURER'S ASSOCIATION
STD	STANDARD
STIFF	STIFFENER
STL	STEEL
STRUCT	STRUCTURE / STRUCTURAL
SYM	SYMMETRICAL
T/	TOP OF
T&B	TOP AND BOTTOM
TB	TIE BEAM
TDS	TURNED DOWN SLAB
TEMP	TEMPERATURE
TENS	TENSION
THD	THREAD / THREADED
THK	THICK
THRU	THROUGH
TOL	TOLERANCE
TYP	TYPICAL
TSWF	THICKENED SLAB WALL FOOTINGS
UNO	UNLESS NOTED OTHERWISE
VERT	VERTICAL
VOL	VOLUME
W	WIDE FLANGE
W/	WITH
WD	WOOD
WF	WALL FOOTING
WFE	WALL FOOTING EXTENSION
WH	WEEP HOLE
W/O	WITHOUT
WP	WORK POINT
WS	WATER STOP
WT	STRUCTURAL TEE SECTION
WWR	WELDED WIRE REINFORCING
@	AT
#	NUMBER OR POUND
±	PLUS OR MINUS
Ø	DIAMETER
&	AND
S_p	SECTION MODULUS
I_p	MOMENT OF INERTIA
℄	CENTERLINE

BREC
A Stratus Team Company
1605 CURTIS BRIDGE ROAD - SUITE 1
WILKESBORO, NC 28697
PHONE : 336.844.4088
www.brec.biz

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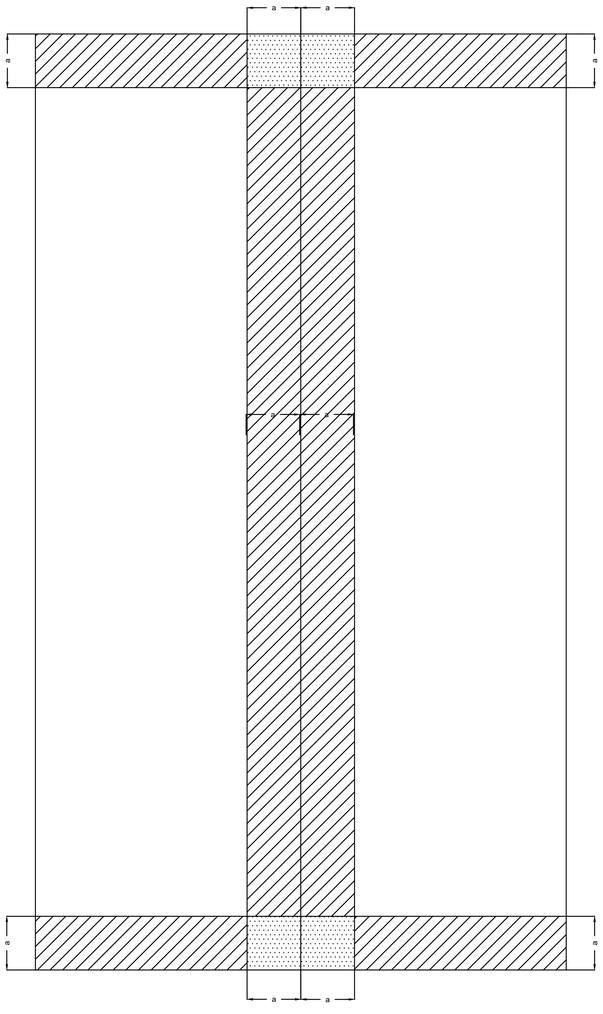
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GENERAL NOTES (CONT) STRUCTURAL

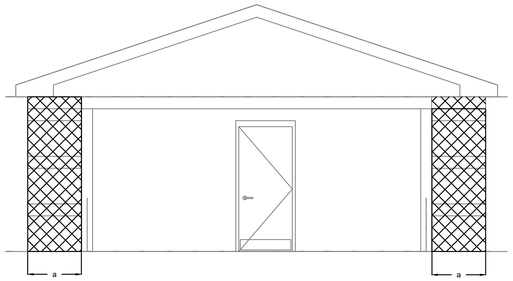
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Joseph, Lawrence & Co
Consulting Engineers
1180 HARWOOD AVE. SUITE 3000
ALTAMONTE SPRINGS, FLORIDA 32714
TEL: 321.972.4466
WWW.JLCENG.COM
FL CA NO. 37088
JLC25.0117.00

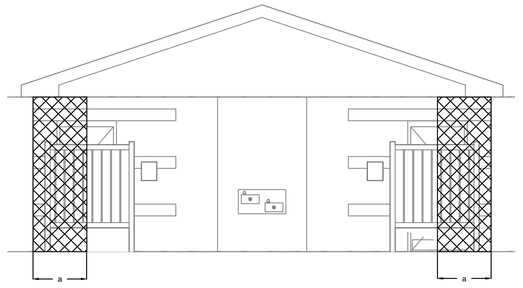
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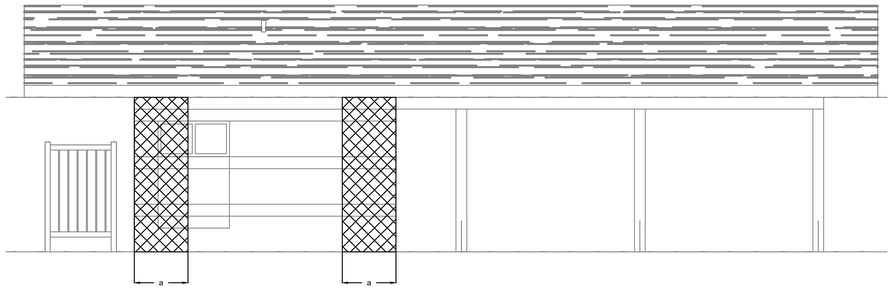
1 ROOF - COMPONENTS AND CLADDING



2 NORTH ELEVATION - COMPONENTS AND CLADDING



3 SOUTH ELEVATION - COMPONENTS AND CLADDING



4 EAST AND WEST ELEVATIONS - COMPONENTS AND CLADDING

COMPONENTS AND CLADDING LEGEND			
	ZONE 1 (UNSHADED)		ZONE 2
	ZONE 3		ZONE 4 (UNSHADED)
	ZONE 5		

COMPONENTS & CLADDING WIND PRESSURE SCHEDULE HIP

AREA (sq. ft.)	ZONE 1		ZONE 2		ZONE 3		ZONE 4		ZONE 5	
	+ (PSF)	- (PSF)	+ (PSF)	- (PSF)	+ (PSF)	- (PSF)	+ (PSF)	- (PSF)	+ (PSF)	- (PSF)
10	10.0	-17.0	10.0	-22.1	10.0	-13.8	10.1	-11.0	10.1	-13.5
20	10.0	-15.0	10.0	-19.9	10.0	-21.4	10.0	-10.5	10.0	-12.6
50	10.0	-12.4	10.0	-17.0	10.0	-18.3	10.0	-10.0	10.0	-11.4
100	10.0	-10.4	10.0	-14.9	10.0	-15.9	10.0	-10.0	10.0	-10.5
200	10.0	-10.0	10.0	-12.7	10.0	-13.5	10.0	-10.0	10.0	10.0

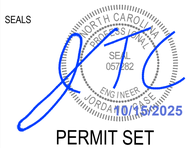
NOTES:

1. WIND PRESSURES ARE UNFACTORED (SERVICE LOAD) VALUES. TO OBTAIN ULTIMATE DESIGN PRESSURES FOR ASCE7-22 WIND LOAD COMBINATIONS, MULTIPLY THE PRESSURES SHOWN BY A FACTOR OF 1.67

Joseph, Lawrence & Co
Consulting Engineers
1180 HARWOOD AVE. SUITE 3000
ALTAMONTE SPRINGS, FLORIDA 32714
TEL: 321.972.4466
WWW.JLCENG.COM
FL CA NO. 37088
JLC25.0117.00

BREC
A Stratus Team Company
1605 CURTIS BRIDGE ROAD - SUITE 1
WILKESBORO, NC 28697
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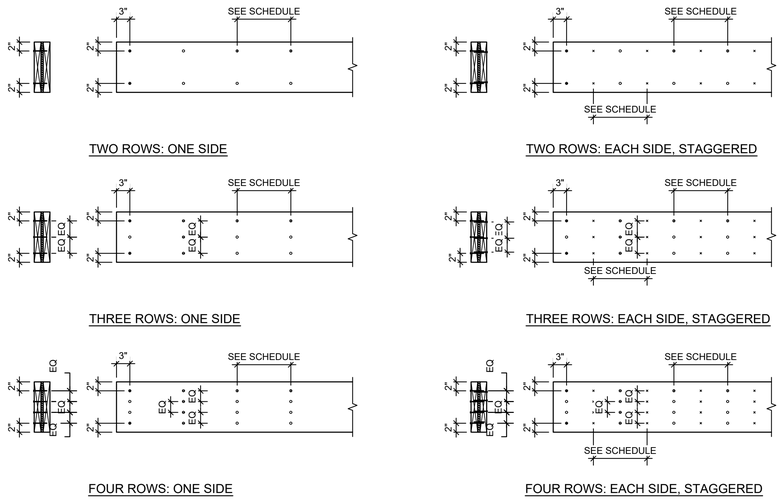
COMPONENTS AND CLADDING STRUCTURAL

S004

HEADER/BEAM SCHEDULE

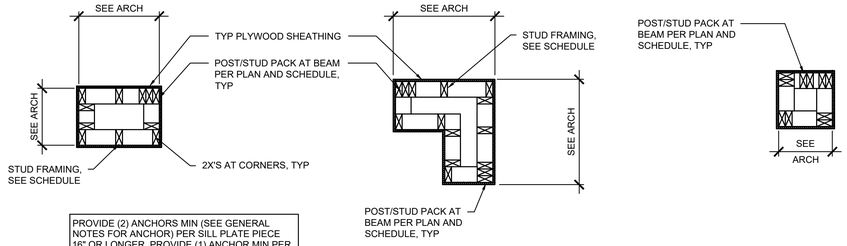
MARK	HEADER SIZE	FLITCH PLATE	NO. OF FLITCH PLATE PLIES	ASSEMBLY PATTERN
H2-08	(2) 2x8	1/2" PLY	3	A,B
H2-10	(2) 2x10	1/2" PLY	3	A,B
H2-12	(2) 2x12	1/2" PLY	3	A,B
H3-08	(3) 2x8	1/2" PLY	3	F,G
H3-10	(3) 2x10	1/2" PLY	3	F,G
H3-12	(3) 2x12	1/2" PLY	3	F,G
H4-08	3-1/2"x7-1/4" PSL 5	-		A,B
H4-10	3-1/2"x9-1/4" PSL 5	-	-	A,B
H4-12	3-1/2"x11-7/8" PSL 5	-	-	A,B
H4-14	3-1/2"x14" PSL 5	-	-	C,D
H4-16	3-1/2"x16" PSL 5	-	-	C,D
H4-18	3-1/2"x18" PSL 5	-	-	C,D
H4-20	(2) 1-3/4"x20" LVL	-	-	E
H6-08	5-1/4"x7-1/4" PSL 5	-	-	F,G
H6-10	5-1/4"x9-1/4" PSL 5	-	-	F,G
H6-12	5-1/4"x11-7/8" PSL 5	-	-	F,G
H6-14	5-1/4"x14" PSL 5	-	-	H,I
H6-16	5-1/4"x16" PSL 5	-	-	H,I
H6-18	5-1/4"x18" PSL 5	-	-	H,I
H6-20	(3) 1-3/4"x20" LVL	-	-	J
H8-08	7"x7-1/4" PSL 5	-	-	K,L
H8-10	7"x9-1/4" PSL 5	-	-	K,L
H8-12	7"x11-7/8" PSL 5	-	-	K,L
H8-14	7"x14" PSL 5	-	-	K,L
H8-16	7"x16" PSL 5	-	-	K,L
H8-18	7"x18" PSL 5	-	-	K,L
H8-20	(4) 1-3/4"x20" LVL	-	-	M

NOTE:
1. PROVIDE WOOD HEADERS OVER ALL OPENING. IF NO HEADER IS SPECIFIED, PROVIDE H2-10 AT ALL EXTERIOR WALLS AND PROVIDE H2-12 AT ALL INTERIOR LOAD BEARING WALLS.
2. FLITCH PLATES SHALL BE PROVIDED BETWEEN HEADER PLIES.
3. H#(F): INDICATES FLUSH BEAM WITH BOTTOM OF BEAM AT TRUSS BEARING ELEVATION, UNLESS NOTED OTHERWISE.
4. SEE SECTION **1/SXX** FOR ASSEMBLY PATTERN.
5. PSL: INDICATED PARALLEL STRAND LUMBER, SEE GENERAL NOTES FOR MINIMUM DESIGN VALUES. LVL OR GLULAM BEAMS OF THE SAME SIZE OR GREATER MAY BE USED LIN LIEU OF PSL BEAMS. SEE GENERAL NOTES FOR MINIMUM DESIGN VALUES OF BOTH MATERIALS.
6. SEE BUILDING AND UNIT PLANS FOR HEADER COLUMN SUPPORTS.
7. PROVIDE SQUASH BLOCKS IN FLOOR CAVITY TO MATCH COLUMN SUPPORTS.
8. ASSEMBLY PATTERN FOR ENGINEER WOOD LUMBER APPLIES ONLY IF THE BEAM HAS MULTIPLE PLIES.



1 WOOD TYP MULTIPLY BEAM ASSEMBLY

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



PROVIDE (2) ANCHORS MIN (SEE GENERAL NOTES FOR ANCHOR) PER SILL PLATE PIECE 16" OR LONGER. PROVIDE (1) ANCHOR MIN PER SILL PLATE PIECE LESS THAN 16".

2 TYP WOOD BOX COLUMNS

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

MULTI-PLY BEAM ASSEMBLY PATTERN

PATTERN MARK	NO. OF PLIES	SIDE LOADED 3					TOP LOADED			
		ROWS	FASTENER SIZE	SPACING	PLACEMENT	MAX UNIFORM LOAD 4,5	ROWS	NAILS SIZE	SPACING	PLACEMENT
A	2	3	0.131X3" NAIL	6" OC	ONE SIDE	1200 PLF	3	0.131X3" NAIL	12" OC	ONE SIDE
B	2	3	0.131X3" NAIL	8" OC	ONE SIDE	1200 PLF	2	0.148X3-1/4" NAIL	12" OC	ONE SIDE
C	2	3	SDS25312 SCREWS	20" OC	EACH SIDE, STAGGERED	1200 PLF	4	0.131X3" NAIL	12" OC	ONE SIDE
D	2	4	SDS25312 SCREWS	20" OC	ONE SIDE	1200 PLF	3	0.148X3-1/4" NAIL	12" OC	ONE SIDE
E	2	3	SDS25312 SCREWS	16" OC	ONE SIDE	2400 PLF	4	0.131X3" NAIL	12" OC	ONE SIDE
F	3	3	SDS25312 SCREWS	16" OC	EACH SIDE, STAGGERED	1200 PLF	3	0.131X3" NAIL	12" OC	ONE SIDE
G	3	3	SDS25312 SCREWS	12" OC	ONE SIDE	1200 PLF	2	0.148X3-1/4" NAIL	12" OC	EACH SIDE, STAGGERED
H	3	3	SDS25312 SCREWS	16" OC	EACH SIDE, STAGGERED	1200 PLF	4	0.131X3" NAIL	12" OC	EACH SIDE, STAGGERED
I	3	3	SDS25312 SCREWS	12" OC	ONE SIDE	1200 PLF	3	0.148X3-1/4" NAIL	12" OC	EACH SIDE, STAGGERED
J	3	4	SDS25312 SCREWS	8" OC	ONE SIDE	2400 PLF	4	0.131X3" NAIL	12" OC	EACH SIDE, STAGGERED
K 6	3	3	SDS25312 SCREWS	16" OC	EACH SIDE, STAGGERED	1200 PLF	2	SDS25600 SCREWS	24" OC	EACH SIDE, STAGGERED
L 6	3	3	SDS25312 SCREWS	12" OC	ONE SIDE	1200 PLF	2	SDW22634 SCREW	24" OC	ONE SIDE
M 6	3	4	SDS25312 SCREWS	8" OC	ONE SIDE	2400 PLF	3	SDW22634 SCREW	24" OC	ONE SIDE

NOTES:
1. SEE CORRESPONDING FASTENING DIAGRAMS.
2. ALL FASTENERS ARE AS MANUFACTURED BY THE SIMPSON STRONG-TIE COMPANY, INC (OR APPROVED EQUAL) AND INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
3. ALL FLUSH BEAMS ARE CONSIDERED TO SIDE LOADED UNLESS NOTED OTHERWISE OR NO TRUSSES./JOISTS/RAFTERS ARE HUNG INTO THE SIDE OF THE BEAM. THE ENGINEER SHALL BE NOTIFIED IF THERE IS A QUESTION IF THE BEAM IS SIDE LOADED OR TOP LOADED.
4. LOADS PROVIDED ARE UNFACTORED (SERVICE LOAD) VALUES.
5. LOADS ARE DUE TO TRUSSES/JOISTS/RAFTER HUNG INTO THE SIDE OF THE BEAM.
6. ASSEMBLY PATTERN MAY BE USED FOR 7" BEAM MADE OF (2)3-1/2" PLIES.

FOOTING SCHEDULE

MARK	SIZE WIDTHxLENGTH	SIZE DEPTH	REINFORCING		REMARKS
			BOTTOM	TOP	
F3.0	1'-0"xCONT.	1'-2"	(2) #5 CONT, #5 AT 12" OC		
TSE1.0	1'-0"xCONT.	2'-0"	(2) #5 CONT, #5 AT 12" OC		
WF2.0	2'-0"xCONT.	1'-0"	(3) #5 CONT, #5 AT 12" OC		

FOOTING NOTE:

EXCAVATIONS UNDER FOOTINGS TO INSTALL PIPING AND CONDUIT RUNS ARE PROHIBITED. ANY PIPE THAT PASSES UNDER A FOOTING OR THOUGH A FOUNDATION WALL SHALL HAVE A PIPE SLEEVE. THE SLEEVE SHALL BE TWO PIPE SIZES GREATER THAN THE PIPE PASSING THROUGH THE WALL. UNDERMINING OF FOOTINGS WOULD REQUIRED THE CONTRACTOR TO RETAIN A LICENSED STRUCTURAL ENGINEER IN THE STATE OF FLORIDA WHO SHALL INVESTIGATE THE CONDITIONS AND DESIGN TEMPORARY SHORING AS REQUIRED BY THE FLORIDA BUILDING CODE.

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1605 CURTIS BRIDGE ROAD - SUITE 1
WILKESBORO, NC 28697
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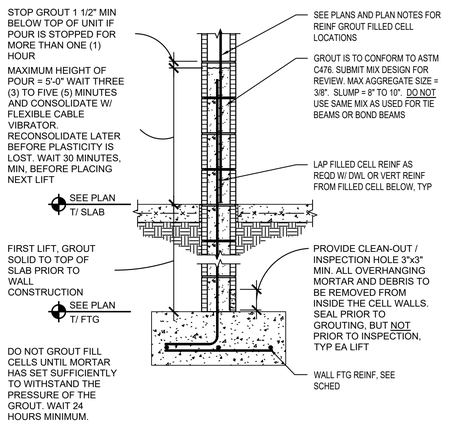
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HEADER, BEAM, AND FOOTING SCHEDULES

S005

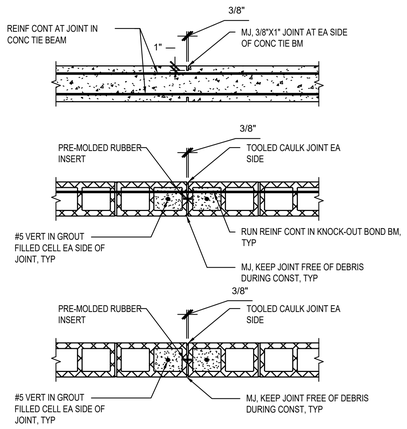
Joseph, Lawrence & Co
Consulting Engineers
1180 HARWOOD AVE. SUITE 3000
ALTAMONTE SPRINGS, FLORIDA 32714
TEL: 321.972.4466
WWW.JLCENG.COM
FL CA NO. 37088
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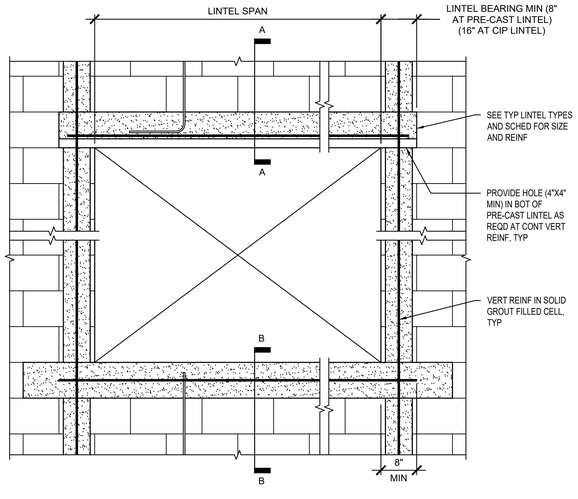
1 TYPICAL HIGH LIFT FILLED CELL GROUTING DIAGRAM

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



2 TYP MASONRY JOINTS DETAIL

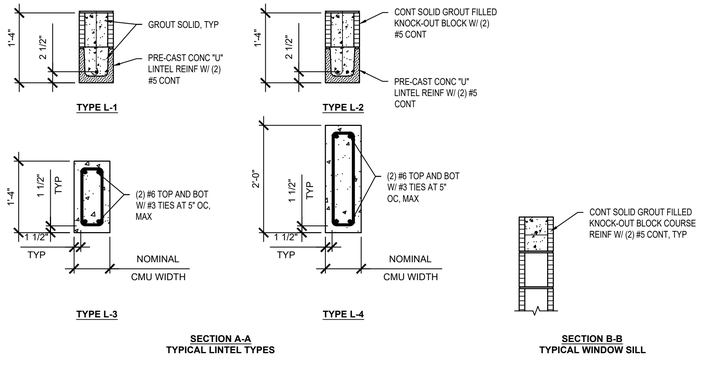
SCALE: 3/4" = 1'-0"



LINTEL SCHEDULE

TYPE	MAXIMUM SPAN	REMARK
L-1	6'-0"	
L-2	10'-0"	
L-3	16'-0"	CIP CONCRETE
L-4	20'-0"	CIP CONCRETE

LINTEL NOTES:
1. FOR 8" AND 12" CMU WALLS.
2. PRE-CAST LINTELS SHALL BE CAPABLE OF SUPPORTING 500 PER LINEAL FOOT IN ADDITION TO THEIR OWN WEIGHT.
3. PROVIDE CAST-IN-PLACE LINTEL FOR OPENING GREATER THAN 10'-0".
4. PROVIDE CAST-IN-PLACE LINTEL WHERE LINTEL SUPPORT IS A CAST-IN-PLACE COLUMN.

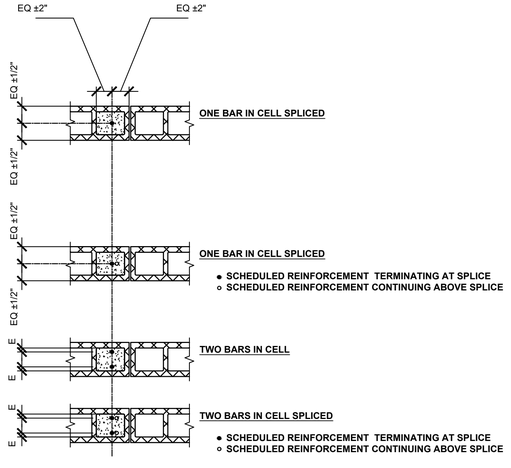


SECTION A-A
TYPICAL LINTEL TYPES

SECTION B-B
TYPICAL WINDOW SILL

3 TYP MASONRY OPENING DETAIL W/LINTELS

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



E = CLEARANCE
= 1/2" MIN, 1" MAX

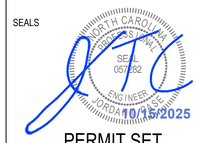
NOTES:
1. PROVIDE GALVANIZED REINFORCING POSITIONS TO MAINTAIN THE INDICATED POSITIONS AND CLEARANCES.
2. SPLICED REINFORCING MUST BE IN CONTACT WITH EACH OTHER
3. NOTIFY THE ENGINEER OF RECORD OF ANY DEVIATIONS FROM THE INDICATED POSITIONS AND/OR TOLERANCES.

4 TYP MASONRY SPLICE DETAILS

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

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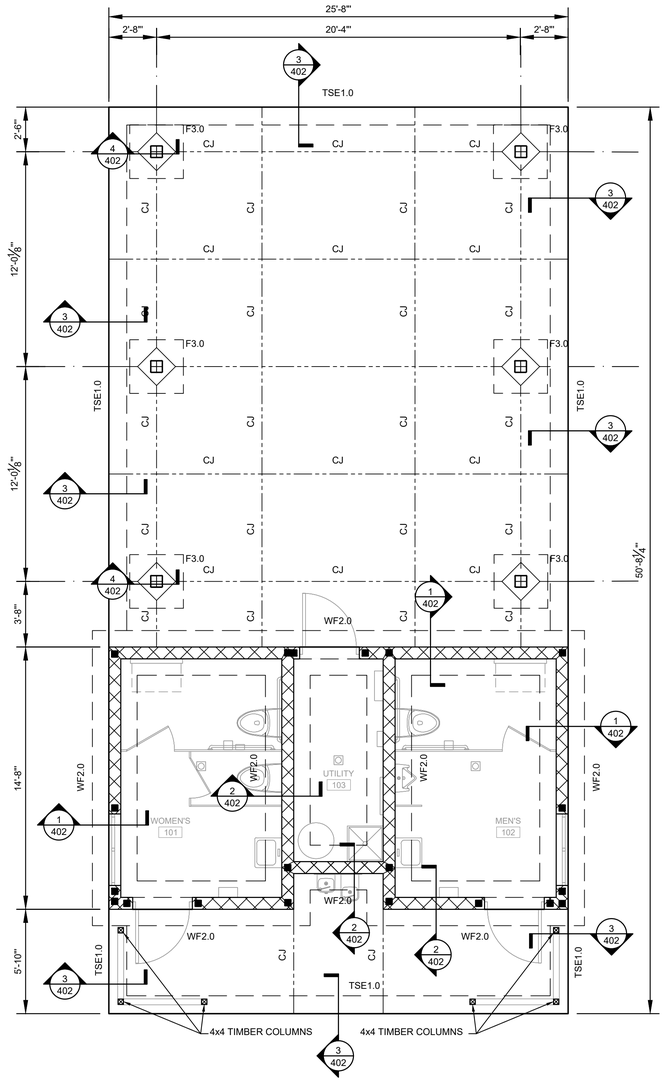
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Consulting Engineers
1180 HADWOOD AVE. SUITE 3000
ALTAMONTE SPRINGS, FLORIDA 32714
TEL: 321.972.4466
WWW.JLCENG.COM
FL CA NO. 37088
JLC25.0117.00

SHEET SIZE:	24"x36"
PROJECT NUMBER:	JLC25.0117.00
DRAWN BY:	JJC, GJH
APPROVED BY:	JTC

TYPICAL MASONRY DETAILS

S006

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1 S101 PAVILION FLOOR PLAN - STRUCTURAL
SCALE: 1/4" = 1'-0"

FOUNDATION PLAN NOTES

1. SEE SHEETS S002-S003 FOR GENERAL STRUCTURAL NOTES.
2. DO NOT SCALE DRAWINGS . SEE ARCHITECTURAL DRAWINGS FOR ADDITIONAL DIMENSIONS NOT SHOWN. VERIFY ALL DIMENSIONS W/ ARCHITECTURAL DRAWINGS PRIOR TO START OF CONSTRUCTION. IF A DISCREPANCY SHOULD OCCUR, CONTACT THE ARCHITECT IN WRITING FOR CLARIFICATION BEFORE PROCEEDING.
3. TYPICAL SLAB ON GRADE CONSTRUCTION:
   4" (MIN.) THICK CONCRETE SLAB REINF. W/ 6x6-W2.9xW2.9 W.W.F. (OR #4 AT 16"O.C. MAX. EACH WAY) OVER CONT. VAPOR BARRIER (SEE ARCH. DWGS.) ON COMPACTED SUBGRADE. COORDINATE ALL SLAB ELEVATIONS, DEPRESSIONS, AND SLOPES W/ ARCH. DWGS. (FOR ACTUAL TOP OF SLAB ELEVATIONS, SEE ARCH. AND/OR CIVIL DWGS).
4. THE SLAB AREA BETWEEN CONTROL JOINTS SHALL NOT EXCEED 150 SQ. FEET MAX.
5. REFER TO MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS FOR UNDERGROUND UTILITES AND SLAB PENETRATIONS.
6. SEE ARCHITECTURAL DRAWINGS FOR CONSTRUCTION INFORMATION OF INTERIOR NON-LOAD BEARING WALLS NOT SHOWN.
7. TYPICAL STAIR / LANDING CONSTRUCTION:
   SEE ARCHITECTURAL DRAWINGS FOR INFORMATION AND GEOMETRY. COORDINATE SUPPORT LOCATIONS AND ATTACHMENT W/ MANUFACTURER / SUPPLIERS APPROVED SHOP DRAWINGS.
8. PROVIDE CORNER BARS WHERE ALL THICKENED SLAB WALL FOOTINGS CHANGE DIRECTION, AND AT ALL THICKENED SLAB WALL FOOTING INTERSECTIONS. SEE SECTION 1/S401 FOR ADDITIONAL INFORMATION.
9. PROVIDE ADDITIONAL RE-ENTRANT CORNER BARS: (2) - #4x5'-0"LG. SPACED AT 3"O.C. (VERTICALLY) PLACED WITHIN MID-DEPTH OF CONCRETE SLAB THICKNESS AND 2" CLEAR (HORIZONTALLY) FROM RE-ENTRANT CORNERS.
10. MASONRY WALLS REINFORCED WITH (1) - #5 VERTICAL (WITH MATCHING DOWEL AT FOOTINGS) IN SOLID GROUT FILLED CELLS AT ALL CORNERS, INTERSECTIONS, ADJACENT MASONRY OPENINGS (COORDINATE SIZE, LOCATIONS, AND ELEVATIONS WITH ARCH. DWGS.) AND BETWEEN AT 32"O.C. (MAX). TYPICAL SPACING OF REINFORCED CELLS APPLIES ABOVE AND BELOW ALL MASONRY OPENINGS. EXTEND VERTICAL REINFORCING BARS THRU (SPLICE / LAP AS REQUIRED) TO UPPER CONCRETE TIE BEAM OR KNOCK-OUT BLOCK COURSE AND TERMINATE WITH STANDARD 90 DEGREE HOOK.

LEGEND

⊗	INDICATES HOLDOWN ANCHOR LOCATIONS.
▬	INDICATES EXTENT OF SHEAR WALL. SEE SHEAR WALL SCHEDULE FOR SHEAR WALL INFORMATION.
▩	INDICATES 8" CMU WALL REINFORCED (& MATCHING DOWEL AT FTG.) IN SOLID GROUT FILLED CELLS. SEE PLAN NOTE 10 FOR REINFORCEMENT SIZE AND SPACING.
■	INDICATES WOOD/PSL COLUMN. SEE COLUMN SCHEDULE FOR SIZE.
℄	INDICATES SLAB CONTROL JOINT. COORDINATE LAYOUT W/ARCH. FLOOR FINISH.
TSWF#	INDICATES THICKENED SLAB WALL FOOTING TYPES. SEE PLAN AND "FOOTING SCHEDULE" FOR SIZE AND REINFORCING INFORMATION.
WF#	INDICATES WALL FOOTING TYPES. SEE PLAN AND "FOOTING SCHEDULE" FOR SIZE AND REINFORCING INFORMATION.

ELEVATION LEGEND	
0'-0" (REF)	T/ SLAB, TSE, UNO
-2'-0" (REF)	T/ F, WF, UNO

BREC
A Stratus Team Company
1605 CURTIS BRIDGE ROAD - SUITE 1
WILKESBORO, NC 28697
PHONE : 336.844.4088
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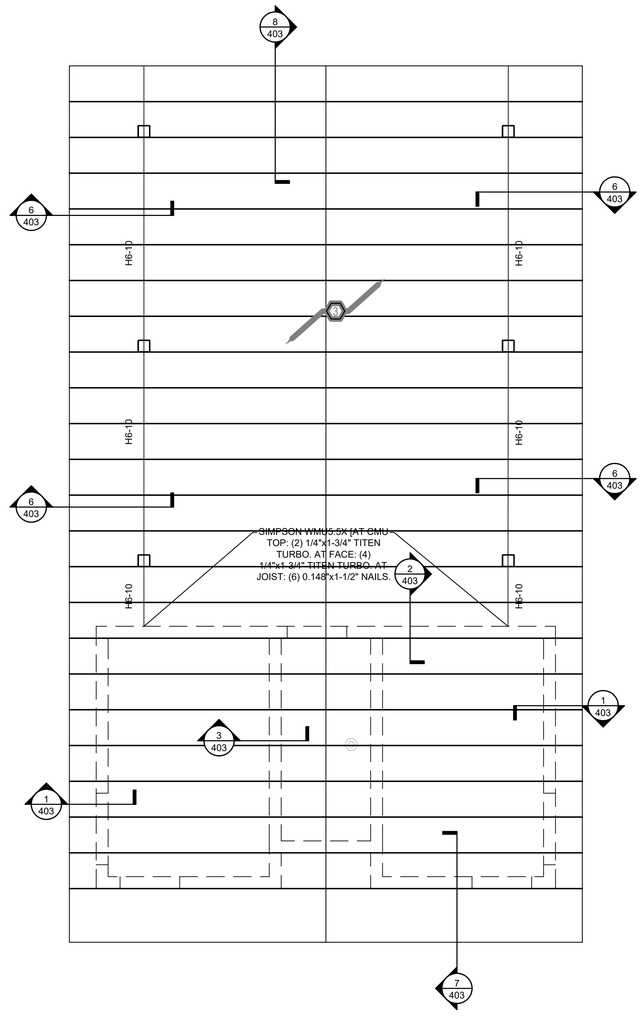
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Consulting Engineers
1180 HARWOOD AVE. SUITE 3000
ALTAMONTE SPRINGS, FLORIDA 32714
TEL: 321.972.4466
WWW.JLCENG.COM
FL CA NO. 37088
JLC25.0117.00

SHEET SIZE:	24"x36"
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DRAWN BY:	JJC, GJH
APPROVED BY:	JTC

PAVILION
FLOOR PLAN
STRUCTURAL

S101

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1 S102 PAVILION ROOF PLAN - STRUCTURAL
SCALE: 1/4" = 1'-0"

ROOF FRAMING PLAN NOTES

1. SEE SHEETS SX.XX FOR GENERAL STRUCTURAL NOTES.
2. DO NOT SCALE DRAWINGS. SEE ARCHITECTURAL DRAWINGS FOR ADDITIONAL DIMENSIONS NOT SHOWN. VERIFY ALL DIMENSIONS W/ ARCHITECTURAL DRAWINGS PRIOR TO START OF CONSTRUCTION. IF A DISCREPANCY SHOULD OCCUR, CONTACT THE ARCHITECT IN WRITING FOR CLARIFICATION BEFORE PROCEEDING.
3. TYPICAL ROOF CONSTRUCTION:
ROOFING SYSTEM (SEE ARCHITECTURAL DRAWINGS) OVER 15/32" SHEATHING (SEE GENERAL NOTES FOR ATTACHMENT) OVER PRE-ENGINEERED WOOD TRUSSES SPACED AT 24" OC MAX, COORDINATE ALL TRUSS PROFILES AND EXACT LAYOUT W/ ARCHITECTURAL DRAWINGS AND MANUFACTURER / SUPPLIER APPROVED SHOP DRAWINGS.
4. TYPICAL OVER BUILD ROOF FRAMING:
ROOFING SYSTEM (SEE ARCHITECTURAL DRAWINGS) OVER 15/32" SHEATHING (SEE GENERAL NOTES FOR ATTACHMENT) OVER PRE-ENGINEERED WOOD TRUSSES OR 2x FRAMING SPACED AT 24" OC MAX, COORDINATE ROOF PROFILES W/ ARCHITECTURAL DRAWINGS AND TRUSS MANUFACTURER / SUPPLIER APPROVED SHOP DRAWINGS.
5. PROVIDE CORNER BARS WHERE ALL CONCRETE BEAMS AND MASONRY BOND BEAMS CHANGE DIRECTION AND AT ALL CONCRETE BEAMS AND TIE BEAM INTERSECTIONS. SEE TYPICAL REINFORCING SECTIONS FOR ADDITIONAL INFROMATION.
6. SEE ARCH'L DWGS FOR CONSTRUCTION INFORMATION OF INTERIOR NON-LOAD BEARING PARTITION WALLS NOT SHOWN.
7. PROVIDE MASONRY LINTELS OVER ALL OPENINGS IN MASONRY WALLS, UNO ON PLAN (COORDINATE EXACT SIZE, LOCATION, AND ELEVATION WITH ARCH'L DRAWINGS). SEE TYPICAL MASONRY OPENING SCHEDULE ON SHEET SX.XX FOR LINTEL TYPE SIZES AND REINFORCING.
8. MASONRY WALLS REINFORCED WITH (1) - #5 VERTICAL IN SOLID GROUT FILLED CELLS AT ALL CORNERS, INTERSECTIONS, ADJACENT MASONRY OPENINGS (COORDINATE SIZE, LOCATIONS, AND ELEVATIONS WITH ARCH. DWGS.) AND BETWEEN AT 32"O.C. (MAX). TYPICAL SPACING OF REINFORCED CELLS APPLIES ABOVE AND BELOW ALL MASONRY OPENINGS. EXTEND VERTICAL REINFORCING BARS THRU (SPLICE / LAP AS REQUIRED) TO UPPER CONCRETE TIE BEAM OR KNOCK-OUT BLOCK COURSE AND TERMINATE WITH STANDARD 90 DEGREE HOOK.
9. PROVIDE WOOD HEADERS OVER ALL OPENINGS. IF NO HEADER TYPE IS SPECIFIED, PROVIDE H2-10 AT INTERIOR LOAD BEARING WALLS AND H2-12 AT EXTERIOR LOAD BEARING WALLS. SEE HEADER / BEAM SCHEDULE AND COLUMN SCHEDULE AT BEAM LOCATIONS. (USE H3-XX VARIANT FOR 6" FRAME WALL)
10. PROVIDE ADDITIONAL STUDS AT EACH END OF GIRDER TRUSSES TO FOUNDATION. REFER TO WOOD GENERAL NOTES FOR ADDITIONAL INFO.

LEGEND

- INDICATES LOAD BEARING WALL. SEE PLAN FOR SIZE AND SPACING
- (BB-) INDICATES MASONRY BOND BEAM. SEE CONCRETE BEAM SCHEDULE.
- INDICATES GIRDER TRUSS OR WOOD BEAM. SEE PLAN AND SCHEDULE FOR SIZE AND SUPPORT.
- INDICATES PRE-ENGINEERED WOOD TRUSS. SEE PLAN FOR SIZE AND SPACING.

ELEVATION LEGEND
- 8'-0" (REF) ___ T/ BOND BEAM, UNO
- 8'-1 1/2" (REF) ___ B/ TRUSS BRNG, UNO

Joseph, Lawrence & Co
Consulting Engineers
1180 HARWOOD AVE. SUITE 3000
ALTAMONTE SPRINGS, FLORIDA 32714
TEL. 321.972.4466
WWW.JLCENG.COM
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1605 CURTIS BRIDGE ROAD - SUITE 1
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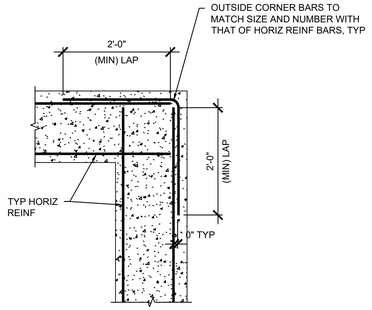
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APPROVED BY:	JTC

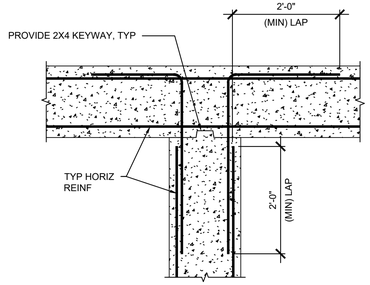
PAVILION
ROOF PLAN
STRUCTURAL

S102

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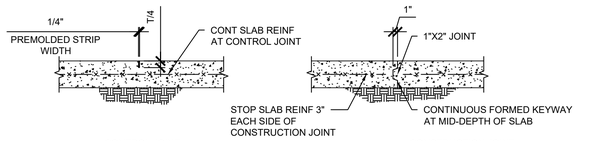
CORNERS



INTERSECTIONS

1 HORIZONTAL REINFORCEMENT FOR CAST-IN-PLACE CONCRETE

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



CONTROL JOINT

CONSTRUCTION JOINT

SAW CONTROL JOINTS NOTES:
1. MAKE SAW CUT AS SOON AS SLAB IS ABLE TO SUPPORT WEIGHT OF WORKES AND SAWING EQUIPMENT WITHOUT DAMAGE TO FINISH SURFACE OF SLAB.
2. ALL SAW CUT CONTROL JOINTS SHALL BE "SOFT CUT" WITHIN 2 HOURS AFTER FINAL FINISHING.
3. CLEAN JOINT PRIOR TO FILLING THE JOINT.

JOINT SPACING NOTE:
1. PROVIDE CONTROL AND/OR CONSTRUCTION JOINTS AT EACH COLUMN LINE AND BETWEEN THE COLUMN LINES SUCH THAT THE JOINT SPACING DOES NOT EXCEED 12 FEET. THE SLAB AREA BETWEEN JOINTS SHALL NOT EXCEED A 2:1 RATIO OF PROPORTION (150 SQ. FT. MAX.)

CONSTRUCTION JOIINT NOTES:
1. SEE PLAN FOR SLAB THICKNESS (T) AND REINFORCEMENT.
2. SLAB REINFORCEMENT SHALL BE CHAIRED BY SOIL SUPPORTED SLAB BOLSTERS 3'-0" O.C. EA. WAY.
3. BREAK BOND BETWEEN NEW AND PREVIOUSLY PLACED SLAB BY SPRAYING OR PAINTING EXPOSED SIDE OF SLAB AND DOWEL WITH A CURING COMPOUND, ASPHALTIC EMULSION, OR FORM OIL.
4. REFER TO GENERAL NOTES, GENERAL SPECIFICATINS, AND DRAWINGS FOR SUB-FLOOR DRAINAGE SYSTEM, SUBGRADE PREPARATION AND/OR MUD SLAB REQUIRMENTS.
5. SUBGRAD FILL SHALL BE FREE OF STANDING WATER AT THE TIME OF CONCRETE PLACEMENT.

2 FOUNDATION CONTROL AND CONSTRUCTION JOINTS

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

SECTION

ELEVATION

3 PENETRATION THRU SHALLOW WALL FOOTING

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

SECTION

ELEVATION

4 PENETRATION BELOW SHALLOW WALL FOOTING

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

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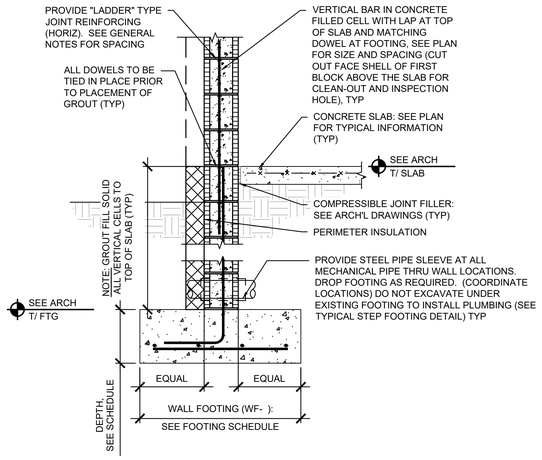
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FOUNDATION DETAILS

S401

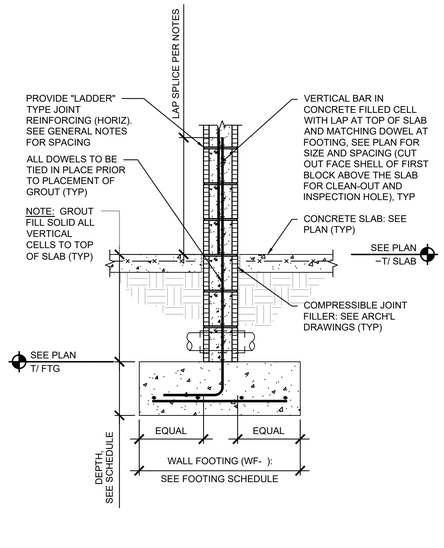
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Consulting Engineers
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ALTAMONTE SPRINGS, FLORIDA 32714
TEL: 321.972.4466
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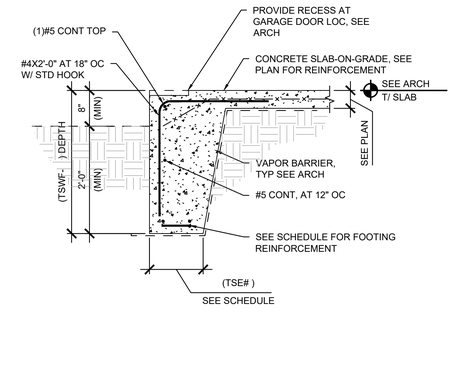
1 CMU EXTERIOR WALL FOOTING

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



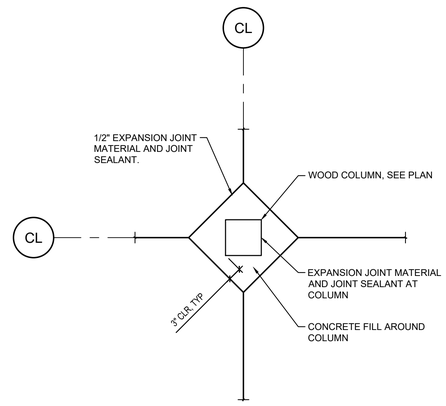
2 CMU INTERIOR WALL FOOTING

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



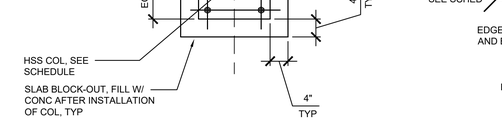
3 EXTERIOR SLAB EDGE

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

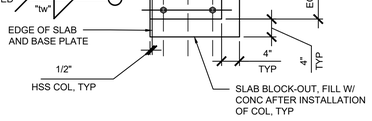


4 SLAB JOINT/BLOCKOUT AT COLUMN

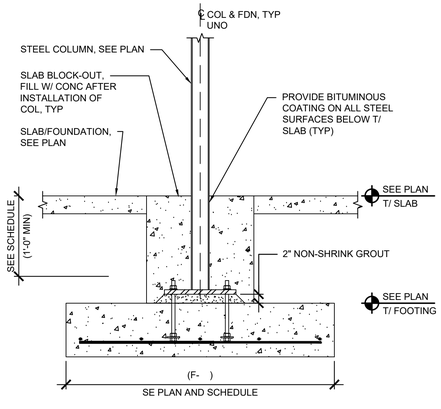
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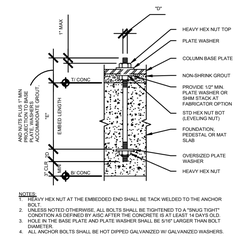
HSS PLAN VIEW



HSS PLAN VIEW AT SLAB EDGE



SE PLAN AND SCHEDULE



NOTES:
1. HEAVY HEX NUT AT THE EMBEDDED END SHALL BE TACK WELDED TO THE ANCHOR BOLT.
2. UNLESS NOTED OTHERWISE, ALL BOLTS SHALL BE TIGHTENED TO A "SNUG TIGHT" CONDITION AS DEFINED BY AISC AFTER THE CONCRETE IS AT LEAST 14 DAYS OLD.
3. HOLE IN THE BASE PLATE AND PLATE WASHER SHALL BE 1/16" LARGER THAN BOLT DIAMETER.
4. ALL ANCHOR BOLTS SHALL BE HOT DIPPED GALVANIZED W/ GALVANIZED WASHERS.

TYPICAL ANCHOR BOLT DIAGRAM

BASE PLATE SCHEDULE

COLUMN	BASE PLATE	ANCHOR BOLT	"tw"
HSS5x5x3/8	PL3/4"x12"x1'-0"	3/4" DIA x 8" EMBED	1/4"

5 STEEL COLUMN BASEPLATE DETAIL AND SCHEDULE

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

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WILKESBORO, NC 28697
PHONE : 336.844.4088
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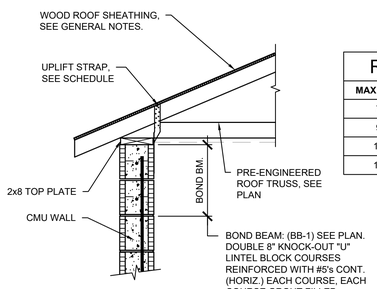
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FOUNDATION DETAILS (CONT)

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Joseph, Lawrence & Co
Consulting Engineers
1180 HARWOOD AVE SUITE 3000
ALTAMONTE SPRINGS, FLORIDA 32714
TEL: 321.972.4466
WWW.JLCENG.COM
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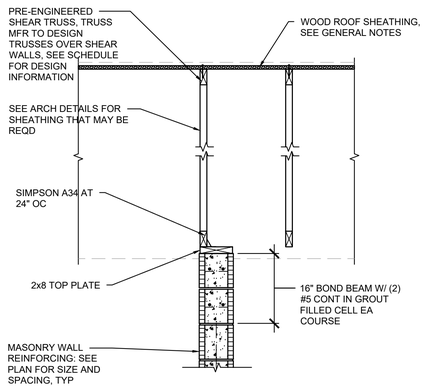


ROOF TRUSS TO MASONRY CONNECTION

MAX UPLIFT	TYPE	QTY	TO TRUSS	TO CMU
715	MTSM	1	(7) 0.148" x 1-1/2"	(4) 1/4" x 1-1/2" TITEN TURBO
955	HTSM	1	(8) 0.148" x 1-1/2"	(4) 1/4" x 1-1/2" TITEN TURBO
1430	MTSM	2	(14) 0.148" x 1-1/2"	(8) 1/4" x 1-1/2" TITEN TURBO
1910	HTSM	2	(16) 0.148" x 1-1/2"	(8) 1/4" x 1-1/2" TITEN TURBO

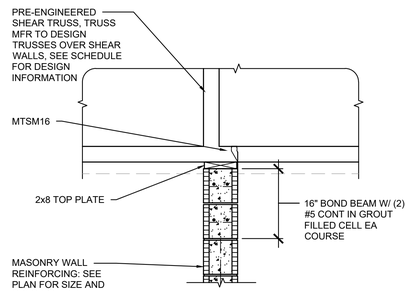
1 CMU EXTERIOR ROOF FRAMING AND HOLDOWNS

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



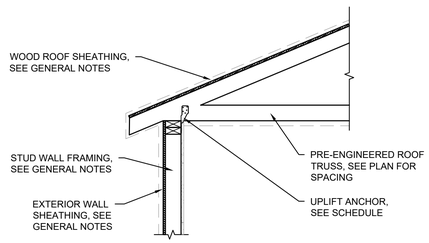
2 CMU INTERIOR ROOF FRAMING

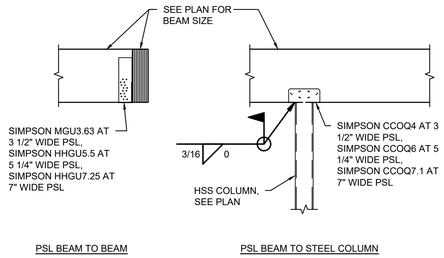
SCALE: 3/4" = 1'-0"

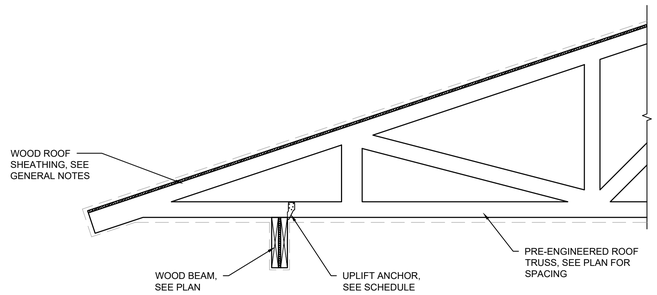


3 CMU INTERIOR ROOF FRAMING

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

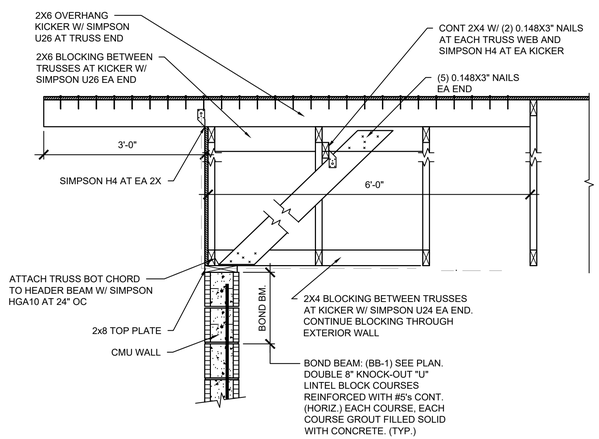






4 EXTERIOR ROOF FRAMING

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

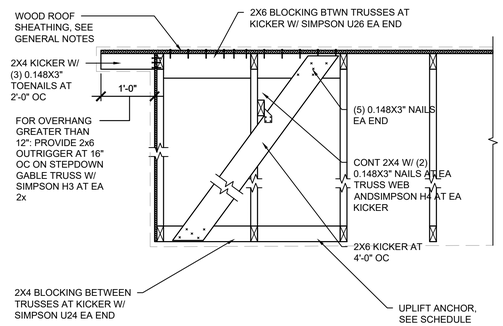


5 TYP BEAM TO POST CONNECTION

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

6 ROOF FRAMING AT WOOD SUPPORT BEAM

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



7 GABLE ROOF FRAMING AT CMU EXTERIOR

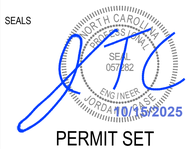
SCALE: 3/4" = 1'-0"

8 GABLE ROOF FRAMING AT WOOD SUPPORT BEAM

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

BREC
A Stratus Team Company
1605 CURTIS BRIDGE ROAD - SUITE 1
WILKESBORO, NC 28697
PHONE : 336.844.4088
www.brec.biz

SEALS



PERMIT SET

09/17/25

REVISIONS

SHEET SIZE:	24"x36"
PROJECT NUMBER:	JLC25.0117.00
DRAWN BY:	JJC, GJH
APPROVED BY:	JTC

ROOF DETAILS

S403

Joseph, Lawrence & Co
Consulting Engineers
1180 HADWOOD AVE. SUITE 3000
ALTAMONTE SPRINGS, FLORIDA 32714
TEL: 321.972.4466
WWW.JLCENG.COM
FL CA NO. 37088
JLC25.0117.00

GENERAL PLUMBING NOTES:

ADMINISTRATIVE:

1. THE FOLLOWING ABBREVIATIONS SHALL APPLY TO NOTES AND PLANS:
   PC - PLUMBING CONTRACTOR,
   EC - ELECTRICAL CONTRACTOR,
   MC - MECHANICAL CONTRACTOR,
   GC - GENERAL CONTRACTOR,
   FASC - FIRE ALARM SYSTEM CONTRACTOR.
   SPC- CURRENT STATE PLUMBING CODE (NORTH CAROLINA STATE BUILDING CODE: PLUMBING CODE)
2. "PROVIDE" MEANS TO FURNISH AND INSTALL. THE PLUMBING CONTRACTOR SHALL ALSO INSTALL MATERIALS FURNISHED BY OTHERS AND THE GENERAL CONTRACTOR.
3. THE PC SHALL BE RESPONSIBLE FOR A COMPLETE AND OPERATIONAL SYSTEM AS DESCRIBED BY THESE PLANS AND SPECIFICATIONS.
4. ALL MATERIALS AND EQUIPMENT SHALL BE DELIVERED TO THE SITE AND UNLOADED AT AN APPROVED LOCATION. PC SHALL PROTECT ALL MATERIALS AND EQUIPMENT FROM BREAKAGE, THEFT, AND THE ELEMENTS. ALL MATERIALS AND EQUIPMENT SHALL REMAIN THE PROPERTY OF THE PC UNTIL THE PROJECT HAS BEEN COMPLETED AND TURNED OVER TO THE OWNER.
5. ALL MATERIALS USED SHALL BE NEW AND FREE OF DEFECTS. ANY MATERIALS FOUND TO BE DEFECTIVE SHALL BE REPLACED AT NO EXPENSE TO THE OWNER. ALL MATERIALS AND EQUIPMENT SHALL BEAR APPROVAL FROM UL OR AN APPROVED THIRD-PARTY AGENCY. WHERE A MANUFACTURER AND MODEL NUMBER IS GIVEN, IT IS TO ESTABLISH A STANDARD OF QUALITY AND NOT TO LIMIT PRODUCTS TO A PARTICULAR MANUFACTURER. PRODUCTS DETERMINED TO BE EQUAL BY THE ENGINEER WILL BE ACCEPTED.
6. THE PLUMBING SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH THE SPC AND ANY APPLICABLE LOCAL CODES. WHERE A CONFLICT EXISTS BETWEEN THE ABOVE REQUIREMENTS, THE CONTRACTOR SHALL OBTAIN CLARIFICATION FROM THE ENGINEER OR IN THE EVENT ANY PART OF THESE PLANS CONFLICTS WITH THE ABOVE REQUIREMENTS.
7. THE PC SHALL OBTAIN AND PAY FOR ALL PERMITS, FEES, AND INSPECTIONS NECESSARY FOR THE COMPLETION OF THE WORK UNDER THIS CONTRACT.
8. DO NOT SCALE THESE DRAWINGS-REFER TO ARCHITECTURAL SHEETS FOR DIMENSIONS.
9. THESE PLANS ARE DIAGRAMMATIC. THE PC SHALL ADJUST THE LOCATIONS OF EQUIPMENT, FIXTURES, PIPING, ETC, TO ACCOMMODATE PLANNED AND ENCOUNTERED INTERFERENCES. THE DRAWINGS DO NOT SHOW ALL BENDS, OFFSETS, AND FITTINGS THAT MAY BE REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM. THE PC SHALL MAKE ALLOWANCES FOR SUCH DEVIATIONS AND CONTINGENCIES IN BID TO IMPLEMENT THEM WITHOUT ADDITIONAL COST TO THE OWNER.
10. THE PC SHALL VISIT THE SITE PRIOR TO BIDDING TO BECOME FAMILIAR WITH EXISTING CONDITIONS. CONTRACTOR SHALL CONTACT THE ENGINEER TO RESOLVE ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THESE PLANS. TO AVOID POTENTIAL CONFLICTS, COORDINATE WITH OTHER TRADES PRIOR TO THE START OF CONSTRUCTION.
11. ALL UNDERGROUND UTILITIES SHALL BE LOCATED PRIOR TO ANY DIGGING.
12. TRENCHING, COMPACTION, AND BACKFILL SHALL BE BY PC AND SHALL BE IN ACCORDANCE WITH SECTION 306 OF THE SPC. UNDERGROUND LINES SHALL BE LOCATED SUCH THAT THEY DO NOT ENDANGER FOOTINGS OR FOUNDATION WALLS.
13. THE PC SHALL PROVIDE FIRESTOPPING AT ALL PENETRATIONS OF RATED FLOOR/CEILING ASSEMBLIES AND RATED WALL ASSEMBLIES TO PRESERVE OR RESTORE THE FIRE RESISTANCE RATING. SEAL ALL PENETRATIONS USING A UL LISTED SYSTEM FOUND IN THE UL DIRECTORY SPECIFIC TO THE UL LISTING OF THE ASSEMBLY BEING PENETRATED. SEE ARCHITECTURAL PLANS FOR UL RATED ASSEMBLIES SPECIFIC TO THE PROJECT.
14. SYSTEM TESTING SHALL BE PERFORMED BY PLUMBING CONTRACTOR IN ACCORDANCE WITH SPC, SECTIONS 312.2, 312.3, AND 312.5.
15. PC SHALL DISINFECT THE ENTIRE DOMESTIC WATER PIPING SYSTEM IN ACCORDANCE WITH THE AMERICAN WATER WORKS ASSOCIATION'S SPECIFICATIONS AND LOCAL HEALTH DEPARTMENT REGULATIONS.
16. AT THE COMPLETION OF WORK AND PRIOR TO ACCEPTANCE BY OWNER, THE PC SHALL CLEAN ALL EXPOSED FIXTURES, MATERIALS, AND EQUIPMENT UNDER THIS CONTRACT.
17. PC SHALL COORDINATE WITH THE GENERAL CONTRACTOR TO ENSURE ALL APPLICABLE CONSTRUCTION WASTE IS RECYCLED DURING THE CONSTRUCTION PHASE OF THE PROJECT.
18. ALL PLUMBING SCOPE IS WITHIN FIVE (5) FEET OF EXTERIOR OF BUILDING OR AS SHOWN ON PLANS.

METHODS:

1. EXTEND DOMESTIC WATER PIPE AS INDICATED ON THE PLANS AND INSTALL DOMESTIC WATER DISTRIBUTION PIPING TO ALL FIXTURES AND EQUIPMENT REQUIRING THE SAME. WATER SERVICE PIPE AND THE BUILDING SEWER SHALL BE SEPARATED BY 5 FEET OF UNDISTURBED OR COMPACTED EARTH IN ACCORDANCE WITH 603.2 SPC. PROVIDE ALL FITTINGS, VALVES, AND OTHER ACCESSORIES AS NECESSARY FOR A COMPLETE INSTALLATION. ALL DOMESTIC WATER PIPING SHALL BE CONCEALED IN FINISHED AREAS. ANY OPEN ENDS SHALL BE PROTECTED UNTIL FINAL CONNECTIONS ARE MADE.
2. ABOVE GRADE DOMESTIC WATER PIPING SHALL BE SLOPED AT A MINIMUM OF 1/32 INCH PER FOOT AND ARRANGED TO DRAIN AT LOW POINTS. INSTALL PIPING TO ALLOW FOR EXPANSION AND CONTRACTION WITHOUT STRESSING PIPE, JOINTS, OR CONNECTED EQUIPMENT. ROUTE PIPING IN AN ORDERLY MANNER-PARALLEL OR PERPENDICULAR TO WALLS WHEN POSSIBLE-AND MAINTAIN GRADIENT. EACH SUPPLY BRANCH LINE SERVING MORE THAN ONE FIXTURE SHALL HAVE A SHUTOFF VALVE INSTALLED TO ISOLATE ALL FIXTURES AND PIECES OF EQUIPMENT SUPPLIED BY THE BRANCH LINE. THE SHUTOFF VALVE SHALL BE LABELED AND LOCATED AS CLOSE TO THE CONNECTION TO THE SUPPLY MAIN AND RISER AS POSSIBLE. PROVIDE A FULL-OPEN VALVE ON THE BASE OF EVERY WATER RISER PIPE AND ON THE TOP OF EVERY WATER DOWN-FEED PIPE. PROVIDE VALVE HANDLE EXTENSIONS AS NECESSARY FOR INSULATION.
3. IT SHALL BE THE RESPONSIBILITY OF THE PC TO SUSPEND AND SUPPORT ALL PIPING SYSTEMS FOLLOWING RECOGNIZED ENGINEERING PRACTICES AND USING STANDARD, COMMERCIALLY ACCEPTED PIPE HANGERS AND SUSPENSION EQUIPMENT. ALL FIXTURES, DEVICES, AND EQUIPMENT SHALL BE SECURELY MOUNTED TO THE BUILDING STRUCTURE AND SHALL NOT RELY ON CEILING OR WALL SURFACES FOR SUPPORT. THE SUPPORT ATTACHMENT SHALL SUPPORT THE WEIGHT OF THE FIXTURE OR EQUIPMENT PLUS THE WEIGHT OF THE SUPPORT ATTACHMENT ITSELF. SUPPORT FROM THE TOP CHORD OF THE ROOF JOISTS, GIRDERS, AND BEAMS. THE BOTTOM CHORD IS NOT TO BE USED FOR EQUIPMENT AND PIPING SUPPORT. HANGERS SHALL NOT BE ATTACHED TO CORRUGATED STEEL DECKING. USE STEEL HANGERS FOR STEEL AND PLASTIC PIPE AND COPPER OR COPPER-PLATED HANGERS FOR COPPER PIPE. PROVIDE PROTECTION FOR COPPER PIPING IN CONTACT WITH DISSIMILAR METALS. WHERE COPPER PIPING IS SUPPORTED ON HANGERS WITH OTHER PIPING, PROVIDE A PERMANENT ELECTROLYTIC ISOLATION MATERIAL TO PREVENT CONTACT WITH OTHER METALS. IN GENERAL, HANGERS SHALL BE CLEVIS TYPE, STANDARD WEIGHT. FOR PIPING, HANGER SPACING SHALL BE IN ACCORDANCE WITH TABLE 308.5 OF THE SPC. HANGERS AND ACCESSORIES SHALL BE GRINNEL, MASON, OR B-LINE.
4. SLEEVE ALL PIPES PASSING THROUGH PARTITIONS, WALLS, AND FLOORS. SLEEVES IN FLOORS AND INTERIOR WALLS OF POURED IN PLACE CONCRETE, BRICK, TILE, OR MASONRY SHALL BE SCHEDULE 40 STEEL PIPE, MACHINE CUT. SLEEVES IN GYPSUM BOARD WALLS SHALL BE 22 GAUGE, ROLLED GALVANIZED SHEET METAL. TACK WELD ON THE LONGITUDINAL SEAM. PROVIDE SLEEVES WHERE PIPES PASS THROUGH FLOORS AND WALLS ABOVE AND BELOW CEILINGS. PROVIDE SPLIT PIPE SLEEVES IN NEW WALLS BUILT UP AROUND EXISTING PIPES. TACK WELD SPLIT SLEEVES TOGETHER. SLEEVES IN WALLS SHALL BE INSTALLED FLUSH WITH THE WALL. SLEEVES IN FLOORS SHALL EXTEND 3/4 INCH ABOVE THE FLOOR-EXCEPT THEY SHALL BE FLUSH FOR 2 HOUR RATED FLOORS-AND SHALL BE FLUSH WITH THE STRUCTURE BELOW. EACH SLEEVE SHALL HAVE AN INSIDE DIAMETER 1 INCH LARGER THAN THE OUTSIDE DIAMETER OF THE COVERING OF EACH COVERED PIPE TO ALLOW CONTINUOUS INSULATION-BUT NOT LESS THAN TWO PIPE SIZES LARGER THAN EACH UNCOVERED. ANNULAR SPACES BETWEEN SLEEVES AND PIPES SHALL BE FILLED OR CAULKED IN AN APPROVED MANNER.
5. THE TOP OF WATER PIPES INSTALLED BELOW GRADE OUTSIDE THE BUILDING SHALL BE BELOW THE FROST LINE OR A MINIMUM OF 12 INCHES BELOW FINISHED GRADE WHICHEVER IS GREATER. WATER PIPING INSTALLED IN A WALL EXPOSED TO THE EXTERIOR SHALL BE LOCATED ON THE HEATED SIDE OF THE WALL INSULATION. WATER PIPING INSTALLED IN AN UNCONDITIONED UTILITY ROOM OR UNCONDITIONED ATTIC SHALL BE INSULATED TO A MINIMUM OF R6.5 DETERMINED IN ACCORDANCE WITH ASTM C 177.
6. HOT WATER PROVIDED TO PUBLIC HAND-WASHING FACILITIES/LAVATORIES SHALL BE TEMPERED WATER DELIVERED THROUGH AN APPROVED WATER-TEMPERATURE LIMITING DEVICE THAT CONFORMS TO ASSE 1070 OR CSA B125.3.
7. INSULATE ALL EXPOSED WASTE AND SUPPLY PIPING UNDER LAVATORIES, SINKS, AND ELECTRIC WATER COOLERS WITH THE HANDI-LAV GUARD INSULATION KIT BY TRUEBRO OR EQUAL.
8. POTABLE WATER OUTLETS SHALL BE PROTECTED FROM BACKFLOW IN ACCORDANCE WITH 608.15 SPC. PRESSURE TYPE VACUUM BREAKERS SHALL CONFORM TO ASSE 1020 AND SPILPROOF VACUUM BREAKERS SHALL COMPLY WITH ASSE 1056. HOSE-CONNECTION VACUUM BREAKERS SHALL CONFORM TO ASSE 1011, ASSE 1019, ASSE 1035, OR ASSE 1052. CONNECTIONS TO BEVERAGE DISPENSERS, COFFEE MACHINES, AND NON-CARBONATED BEVERAGE DISPENSERS SHALL BE PROTECTED BY A BACKFLOW PREVENTER IN ACCORDANCE WITH ASSE 1022.
9. THE PC SHALL INSTALL WATER HAMMER ARRESTORS ON BRANCH LINES WITH QUICK CLOSING VALVES PER MANUFACTURER'S INSTALLATION INSTRUCTIONS. WATER HAMMER ARRESTORS SHALL CONFORM TO ASSE 1010.
10. THE PC SHALL PROVIDE CHECK VALVES AT ALL FIXTURES WITH THREADED OUTLETS AS REQUIRED BY CODE. TRAP PRIMERS SHALL BE PROVIDED AS SHOWN ON THE PLANS OR AS REQUIRED.
11. ADJUST STOPS AND VALVES FOR INTENDED FLOW RATE TO FIXTURES WITHOUT SPLASHING, NOISE, OR OVERFLOW.
12. BEFORE COMMENCING WORK, CHECK INVERT ELEVATIONS REQUIRED FOR SEWER CONNECTIONS, CONFIRM INVERTS, AND VERIFY THESE CAN BE PROPERLY CONNECTED TO WITH SLOPE FOR DRAINAGE AND COVER TO AVOID FREEZING. ONCE INVERTS AND FALL HAVE BEEN ESTABLISHED, EXTEND SANITARY SEWER AS SHOWN AND INSTALL ALL DRAINS, STACKS, VENTS, FLOOR DRAINS, AND CLEANOUTS NECESSARY FOR A COMPLETE INSTALLATION.
13. ALL SANITARY SEWER PIPING IS BELOW GRADE OR WITHIN WALLS UNLESS OTHERWISE NOTED. ALL SANITARY VENT PIPING IS ABOVE THE CEILING OR WITHIN WALLS UNLESS OTHERWISE NOTED. SOIL AND WASTE PIPING SHALL BE INSTALLED TO PROVIDE PROTECTION AGAINST FREEZING PER 305.4.1 SPC. WASTE AND SOIL LINES LEAVING THE BUILDING MUST HAVE A MINIMUM COVER OF 3 INCHES.
14. SOIL AND WASTE LINES 2-1/2 INCHES AND SMALLER SHALL BE SLOPED AT 1/4 INCH PER FOOT MINIMUM. SOIL AND WASTE LINES 3 INCHES TO 6 INCHES IN DIAMETER SHALL BE SLOPED AT 1/8 INCH PER FOOT MINIMUM.
15. FOR WATER CLOSET WASTE CONNECTIONS, A 4 INCH BY 3 INCH CLOSET BEND SHALL BE ACCEPTABLE. WHERE A 3 INCH BEND IS UTILIZED ON WATER CLOSETS, A 4 INCH BY 3 INCH FLANGE SHALL BE INSTALLED TO RECEIVE THE FIXTURE HORN.
16. FOR PLASTIC PIPE SIZES GREATER THAN 6 INCHES, AND OTHER PIPE SIZES GREATER THAN 4 INCHES, RESTRAINTS SHALL BE PROVIDED FOR DRAINPIPES AT ALL CHANGES IN DIRECTION AND AT ALL CHANGES IN DIAMETER GREATER THAN TWO PIPE SIZES. BRACES, BLOCKS, RODDING, BACKFILL AND OTHER SUITABLE METHODS AS SPECIFIED BY THE COUPLING MANUFACTURER SHALL BE UTILIZED.
17. BASES OF STACKS SHALL BE SUPPORTED BY THE BUILDING STRUCTURE, VIRGIN OR COMPACTED EARTH, OR OTHER SUITABLE MATERIAL TO SUPPORT THE WEIGHT OF THE PIPING.
18. HORIZONTAL DRAINPIPES SHALL HAVE CLEANOUTS IN ACCORDANCE WITH 708.1 SPC. EXTEND CLEANOUTS TO FINISHED FLOOR OR WALL SURFACE. LUBRICATE THREADED CLEANOUT PLUGS WITH A MIXTURE OF GRAPHITE AND LINSEED OIL. ENSURE CLEARANCE AT ALL CLEANOUTS FOR RODDING OF DRAINAGE SYSTEM. INSTALL FLOOR CLEANOUTS AT AN ELEVATION TO ACCOMMODATE FINISHED FLOOR. EVERY CLEANOUT SHALL BE INSTALLED TO ALLOW CLEANING IN THE DIRECTION OF FLOW OF THE DRAINAGE PIPE OR AT RIGHT ANGLES THERETO. CLEANOUTS ON 6 INCH AND SMALLER PIPES SHALL BE PROVIDED WITH A CLEARANCE OF NOT LESS THAN 18 INCHES FOR RODDING.
19. DRAINAGE PIPING FOR FUTURE FIXTURES SHALL TERMINATE WITH AN APPROVED CAP OR PLUG.
20. AIR ADMITTANCE VALVES SHALL BE INSTALLED AFTER THE DWV TESTING REQUIRED BY SECTIONS 312.2 AND 312.3 OF THE SPC. PROVIDE ACCESS TO ALL AIR ADMITTANCE VALVES PER CODE. INSTALLATION OF ALL AIR ADMITTANCE VALVES SHALL CONFORM TO SECTION 918 OF THE SPC. AIR ADMITTANCE VALVES SHALL CONFORM TO ASSE 1050 OR 1051.
21. INDIRECT WASTE PIPING THAT EXCEEDS 2 FEET IN DEVELOPED LENGTH MEASURED HORIZONTALLY, OR 4 FEET IN TOTAL DEVELOPED LENGTH, SHALL BE TRAPPED. THE AIR GAP BETWEEN THE INDIRECT WASTE PIPE AND THE FLOOD LEVEL RIM OF THE WASTE RECEPTOR SHALL BE A MINIMUM OF TWICE THE EFFECTIVE OPENING OF THE INDIRECT WASTE PIPE.
22. THE PC SHALL PROVIDE UNIONS FOR DISASSEMBLY AND SERVICE OF ALL FIXTURES AND OTHER RELEVANT PLUMBING EQUIPMENT. UNIONS SHALL BE GROUND-JOINT WITH BRASS SEAT. PROVIDE INSULATING UNIONS AT EACH JUNCTION OF DISSIMILAR MATERIALS.
23. THE PC SHALL ACCURATELY ROUGH-IN ALL FIXTURES ACCORDING TO MANUFACTURER'S INSTALLATION DIMENSIONS AND INSTRUCTIONS. OFFSET ADAPTERS AND FLEXIBLE CONNECTORS ARE NOT ACCEPTABLE. FLUSH HANDLES SHALL BE MOUNTED ON THE WIDE SIDE OF TOILET AREAS FOR ADA COMPLIANCE. INSTALL EACH FIXTURE WITH TRAP EASILY REMOVABLE FOR SERVICING AND CLEANING. SEAL FIXTURES TO WALL AND FLOOR SURFACES WITH SEALANT. SOLIDLY ATTACH WATER CLOSESTS TO FLOOR WITH LAG SCREWS. SEAL ALL SELF-RIMMING LAVATORIES AND SINKS (VITREOUS CHINA AND STAINLESS STEEL) WITH A COMMERCIAL GRADE PLUMBER'S PUTTY OR ACRYLIC LATEX CAULK APPLIED TO THE UNDERSIDE OF THE FIXTURE RIM IN A GENEROUS AMOUNT SO THAT WHEN FIXTURE IS SET, SEALANT SHALL OOZE OUT.
24. ALL VENT THRU THE ROOF (VTR) PENETRATIONS SHALL BE COORDINATED WITH THE GENERAL CONTRACTOR. PC SHALL PROVIDE FLASHING MATERIAL REQUIRED FOR VTRS. JOINTS AT THE ROOF AND AROUND VENT PIPES SHALL BE MADE WATERTIGHT BY THE USE OF LEAD, COPPER, GALVANIZED STEEL, ALUMINUM, OR OTHER APPROVED FLASHINGS OR FLASHING MATERIAL. MAINTAIN MINIMUM 10 FEET FROM ALL OUTSIDE AIR INTAKES.
25. INSTALL FULL OPEN VALVES PER SPC 606.1 ON THE MAIN WATER LINE INTO THE BUILDING. INSTALL SHUTOFF VALVES PER SPC 606.2.

MATERIALS:

1. BALL VALVES SHALL HAVE BRASS BODY, FULL PORT, CHROME PLATED BALL, WITH TEFLON SEATS, 150 PSI WSP, AND COMPLY WITH MSS SP-110. GATE VALVES SHALL HAVE BRONZE BODY, CLASS 150, AND COMPLY WITH MSS SP-80, TYPE 2 STANDARD. VALVE BODY SHALL BE ASTM B 62, BRONZE WITH INTEGRAL SEAT AND UNION RING BONNET. ENDS SHALL BE THREADED OR SOLDER WITH COPPER-SILICON BRONZE STEM AND SOLID-WEDGE BRONZE DISC. INSTALL VALVES IN LOCATIONS THAT PERMIT EASY ACCESS WITHOUT DAMAGE TO BUILDING OR FINISHED MATERIALS; PROVIDE ACCESS DOORS IF REQUIRED. VALVES SHALL BE BY NIBCO, WATTS, OR STOCKHAM.
2. COLD WATER LINES SHALL BE INSULATED WITH 1/2 INCH THICK FIBROUS GLASS INSULATION WITH A FLAME DENSITY RATING LESS THAN 25 AND A SMOKE DENSITY RATING LESS THAN 50 WHEN TESTED IN ACCORDANCE WITH ASTM E 84. HOT WATER LINES UP TO 2 INCHES DIAMETER SHALL HAVE 1 INCH THICK INSULATION CONFORMING TO THE SAME STANDARD. PIPING LARGER THAN 2 INCHES SHALL RECEIVE 1-1/2 INCH THICK INSULATION. CLOSED CELL RUBBER INSULATION MEETING THE SMOKE AND FLAME RATINGS ABOVE MAY BE SUBSTITUTED FOR FIBROUS GLASS TYPE IF SO DESIRED. INSULATION INSTALLED ON PIPING OPERATING BELOW AMBIENT TEMPERATURES MUST HAVE A CONTINUOUS VAPOR RETARDER. ALL JOINTS, SEAMS AND FITTINGS MUST BE SEALED. ON SYSTEMS OPERATING ABOVE AMBIENT, THE BUTT JOINTS SHOULD NOT BE SEALED. ON COLD SURFACES WHERE A VAPOR SEAL MUST BE MAINTAINED, INSULATION SHALL BE APPLIED WITH A CONTINUOUS, UNBROKEN MOISTURE AND VAPOR RETARDER. ALL HANGERS, SUPPORTS, ANCHORS, OR OTHER PROJECTIONS SECURED TO COLD SURFACES SHALL BE INSULATED AND VAPOR SEALED TO PREVENT CONDENSATION. ALL PIPE INSULATION SHALL BE CONTINUOUS THROUGH WALLS, CEILING OR FLOOR OPENINGS, OR SLEEVES EXCEPT WHERE FIRESTOP OR FIRESAFING MATERIALS ARE REQUIRED. INSULATION SHALL HAVE A FACTORY APPLIED ALL-SERVICE JACKET WITH SELF-SEALING LAP. WHITE-KRAFT PAPER BONDED TO ALUMINUM FOIL AND REINFORCED WITH GLASS FIBERS; CONFORMING TO ASTM C 1136 TYPE 1; VAPOR RETARDER; WITH A SELF-SEALING ADHESIVE. VERIFY THAT PIPING HAS BEEN TESTED, SURFACES ARE CLEAN AND DRY, AND ALL FOREIGN MATERIALS ARE REMOVED BEFORE APPLYING INSULATION MATERIALS. INSULATION SHALL BE BY KNAUF, ARMACELL, JOHNS-MANVILLE, OR OWENS-CORNING.
3. ALL INSULATION CONTAINING FIBROUS MATERIALS EXPOSED TO AIRFLOW SHALL BE RATED FOR THAT EXPOSURE OR SHALL BE ENCAPSULATED. INSULATING PROPERTIES FOR ALL MATERIALS SHALL MEET OR EXCEED INDUSTRY STANDARDS. POLYSTYRENE PRODUCTS SHALL MEET ASTM C578 91. ALL INSULATION SHALL BE LOW-EMITTING WITH NOT GREATER THAN 0.05 PPM FORMALDEHYDE EMISSIONS. THE MAXIMUM FLAME SPREAD AND SMOKE DEVELOPED INDEX FOR INSULATION SHALL MEET THE REQUIREMENTS OF THE LOCAL CODES AND ORDINANCES ADOPTED BY THE JURISDICTION IN WHICH THE BUILDING IS LOCATED.
4. FAUCETS AND FIXTURE FITTINGS SHALL CONFORM TO ASME A112.18.1. FAUCETS AND FIXTURE FITTINGS THAT SUPPLY DRINKING WATER FOR HUMAN CONSUMPTION SHALL CONFORM TO THE REQUIREMENTS OF NSF 61, SECTION 9. FIXTURE FITTINGS, FAUCETS, AND DIVERTERS SHALL BE INSTALLED AND ADJUSTED SO THAT THE FLOW OF HOT WATER FROM THE FITTINGS CORRESPONDS TO THE LEFT-HAND SIDE OF THE FIXTURE FITTING.
5. BACKFLOW PREVENTION SHALL BE IN ACCORDANCE WITH SECTION 608.13 OF THE SPC AND THE LOCAL AUTHORITY HAVING JURISDICTION. REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTERS SHALL CONFORM TO ASSE 1013 OR AWWA C511. THE RELIEF OPENING SHALL DISCHARGE BY AIR GAP. AIR GAPS SHALL COMPLY WITH ASME A112.1.1 AND AIR GAP FITTINGS WITH ASME A112.1.3. DOUBLE CHECK VALVE ASSEMBLIES SHALL CONFORM TO ASSE 1015 OR AWWA C510. ACCESS TO BACKFLOW PREVENTERS SHALL BE PROVIDED AS SPECIFIED BY THE INSTALLATION INSTRUCTIONS OF THE APPROVED MANUFACTURER.
6. FOR BELOW GRADE SANITARY WASTE PIPING, PC SHALL USE SERVICE WEIGHT CAST IRON PIPE WITH COMPRESSION JOINTS (ASTM A 74). USE MINIMUM 2" SIZE UNDERGROUND. SOLID WALL SCHEDULE 40 PVC (ASTM D 2665) WITH SCHEDULE 40 SOCKET TYPE PIPE FITTINGS (ASTM D 3311) MAY ALSO BE USED. DO NOT USE PVC PIPE FOR APPLICATIONS WHERE THE WASTEWATER TEMPERATURE EQUALS OR EXCEEDS 140°F OR IF THE BUILDING HEIGHT EXCEEDS 75 FEET.
7. FOR ABOVE GRADE SANITARY WASTE AND VENT PIPING, USE SERVICE WEIGHT CAST IRON NO-HUB TYPE WITH COUPLINGS (CISPI 301). SOLID WALL SCHEDULE 40 PVC (ASTM D 2665) WITH SCHEDULE 40 SOCKET TYPE FITTINGS (ASTM D 3311) MAY BE USED IF PERMITTED BY LOCAL CODE, EXCEPT IN BUILDINGS EXCEEDING 75 FEET IN HEIGHT. DO NOT INSTALL PVC IN RETURN AIR PLENUMS. ALL VENT AND BRANCH VENT PIPES SHALL BE SO GRADED AND CONNECTED AS TO DRAIN BACK TO THE DRAINAGE PIPE BY GRAVITY. BRANCH VENTS EXCEEDING 40 FEET IN DEVELOPED LENGTH SHALL BE INCREASED BY ONE NOMINAL SIZE FOR THE ENTIRE DEVELOPED LENGTH OF THE PIPE.
8. ALL OVERHEAD DOMESTIC WATER PIPING SHALL BE TYPE L COPPER WITH 95/5 LEAD FREE SOLDER, AND ALL BELOW GRADE WATER PIPING SHALL BE TYPE K COPPER WITH NO JOINTS. ALL PIPING SHALL HAVE MANUFACTURER'S NAME AND THE APPLICABLE STANDARD TO WHICH IT WAS MANUFACTURED CLEARLY MARKED ON EACH LENGTH. PIPING SHALL COMPLY WITH ASTM B-88. USE BRAZED JOINTS ON ALL COPPER PIPING 1-1/2 INCH AND LARGER. ALL PIPE AND PIPE FITTINGS, INCLUDING VALVES AND FAUCETS, USED IN THE WATER DISTRIBUTION SYSTEM SHALL HAVE A MAXIMUM LEAD CONTENT OF 0.25-PERCENT AND SHALL CONFORM TO NSF 61. HOT WATER DISTRIBUTION PIPE AND TUBING SHALL HAVE A MINIMUM PRESSURE RATING OF 100 PSI AT 180°F. COLD WATER DISTRIBUTION PIPE AND TUBING SHALL HAVE A MINIMUM PRESSURE RATING OF 160 PSI AT 73.4°F. DO NOT INSTALL PEX OR CPVC PIPING IN RETURN AIR PLENUMS.
   8.1 PC MAY USE PEX (ASTM F 877) WITH APPROVED FITTINGS (ASTM F 1807) WITH OWNER'S APPROVAL. CPVC PIPING (ASTM D 2846 OR ASTM F 441) WITH APPROVED FITTINGS (ASTM D 2846, ASTM F 438, OR ASTM F 439) MAY ALSO BE USED WHERE NOT LOCATED IN PLENUMS. ALL PLASTIC PIPE, FITTINGS, AND COMPONENTS SHALL BE THIRD-PARTY CERTIFIED AS CONFORMING TO NSF 14.
9. PC SHALL PROVIDE ALL WATER HEATERS (WATTAGE/INPUT AND CAPACITY AS NOTED IN SCHEDULE). ALL WATER HEATERS SHALL BE THIRD PARTY CERTIFIED; PROVIDE PANS FOR WATER HEATERS IN ACCORDANCE WITH 504.7 OF THE SPC. ELECTRICAL CONNECTIONS SHALL BE BY ELECTRICAL CONTRACTOR, PC SHALL COORDINATE WITH EC ON ELECTRICAL CHARACTERISTICS OF THE EQUIPMENT PROVIDED.
10. ALL PUMPS SHALL BE RATED FOR TRANSPORT OF POTABLE WATER. PUMPS IN AN INDIVIDUAL WATER SUPPLY SYSTEM SHALL BE CONSTRUCTED AND INSTALLED SO AS TO PREVENT CONTAMINATION FROM ENTERING THE WATER SUPPLY SYSTEM.

ABBREVIATIONS AND DEFINITIONS

ABBREVIATION	DEFINITION
CWS	COLD WATER SUPPLY
HWS	HOT WATER SUPPLY
SAN	SANITARY SEWER
GL	GREASE LADEN
VTR	VENT TO ROOF
FPHB	FREEZE PROOF HOSE BIBB
IHB	INTERIOR HOSE BIBB
PC	PLUMBING CONTRACTOR
BFP	BACK FLOW PREVENTOR
AFF	ABOVE FINISHED FLOOR
RI	ROUGH IN
CRI	CONCEALED ROUGH IN
ID	INTERIOR DRAIN-STORM
DS	DOWNSPUT-STORM
SS	SOIL STACK - SANITARY
FD	FLOOR DRAIN
RD	ROOF DRAIN
FU	FIXTURE UNIT
PT	PLASTER TRAP
PU	PROCTO UNIT
OS&Y	OUTSIDE STEAM AND YOKE
WH	WATER HEATER
OSD	OPEN-SITE DRAIN
VS	VENT STACK (SANITARY)
SV	STACK VENT (SANITARY)
FCO	FLOOR CLEAN OUT
WCO	WALL CLEAN OUT

LINETYPE LEGEND

COLD WATER SUPPLY
HOT WATER SUPPLY
SANITARY SEWER LINE
VENT LINE

DO NOT TAP WATER LINE AHEAD OF RPZ.

KILIAN
A Stratus Team Company
PO Box 3301, Henderson, NC 27536
www.kilianengineering.com | P| 252.436.8178
CORPORATE LICENSE C-2277

NORTH CAROLINA PROFESSIONAL SEAL 17304 ENGINEER MICHAEL W. KILIAN
10/02/2025
KILIAN ENGINEERING, INC. CORPORATE SEAL NORTH CAROLINA

NEW CONSTRUCTION FOR:

COVE CREEK PICNIC SHELTER & RESTROOMS

SUGAR GROVE, NC

REVISION

7	6	5	4	3	2	1	DATE
							DESCRIPTION

ISSUED: 10/02/2025

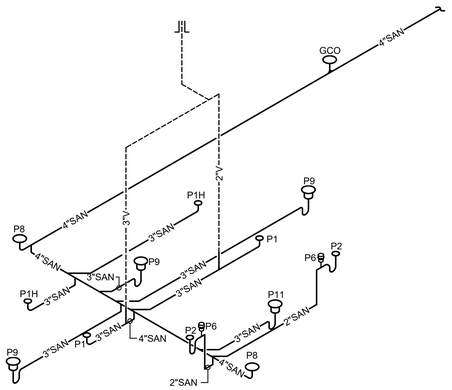
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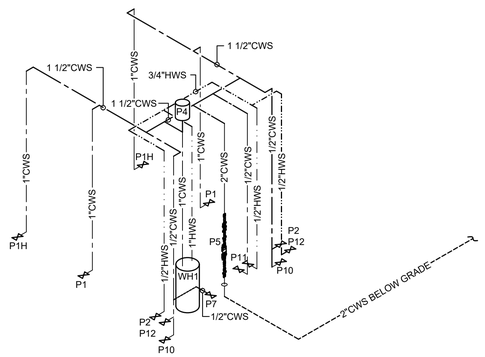
SHEET: PLUMBING NOTES AND SCHEDULES

SHEET NO. P-001

PROJECT NO: 250594



1 SANITARY RISER
Scale: NONE

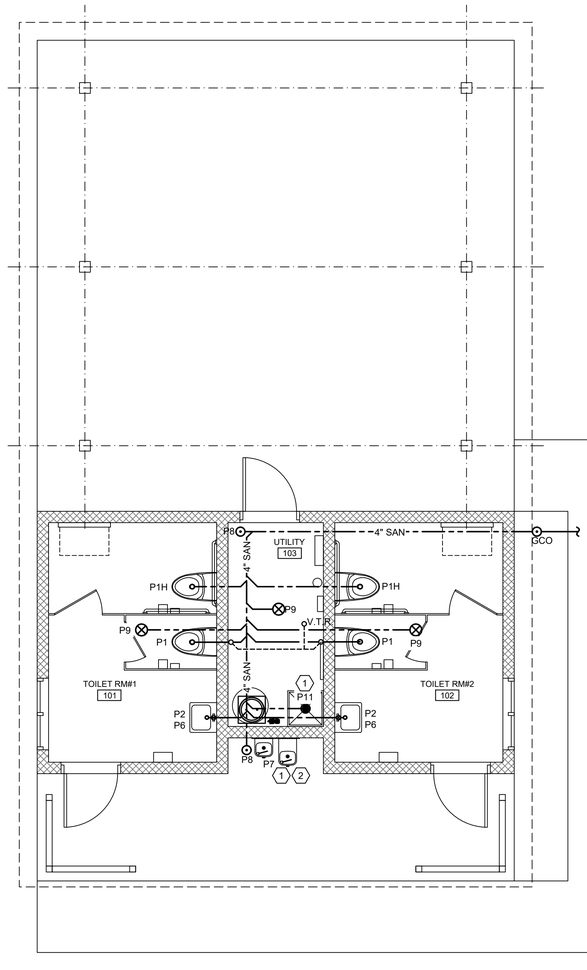


2 DOMESTIC SUPPLY RISER
Scale: NONE

SANITARY PLAN HEX NOTES

1. ROUTE WATER HEATER DRAIN PAN, BACKFLOW PREVENTER DRAIN AND DRINKING FOUNTAIN DRAIN INDEPENDENTLY TO MOP SINK AND TERMINATE WITH AIR GAP.
2. PROVIDE FREEZE PROTECTION FOR EWC. COORDINATE WITH EC.

- SECURE ALL EXPOSED WASTE AND VENT PIPING TO BLOCK WALL.



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

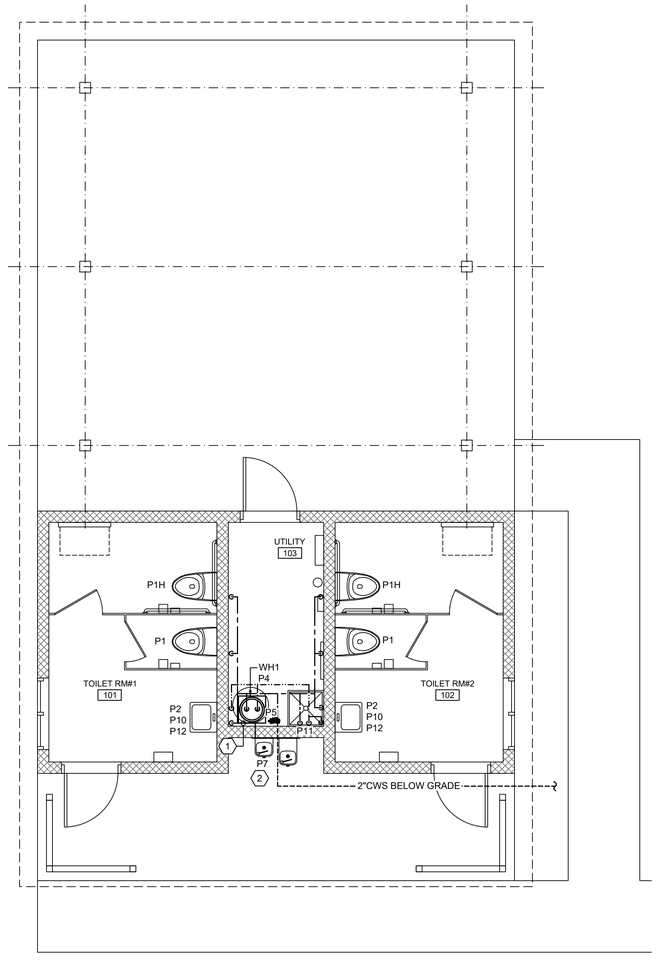
DOMESTIC SUPPLY PLAN HEX NOTES

1. BRANCH 1/2"CWS FROM LAV. VERTICAL BRANCH AND ROUTE SECURE ALONG WALL TO DRINKING FOUNTAIN.
2. PROVIDE FREEZE PROTECTION FOR EWC. COORDINATE WITH EC.

ALL REQUIRED VALVES NOT SHOWN.
- INSTALL FULL OPEN VALVES PER 2018 NC PLUMBING CODE 606.1.2, 606.1.5, AND 606.1.8
- INSTALL SHUT OFF VALVES PER 2018 NC PLUMBING CODE 606.2 AND 606.2.1

DO NOT TAP WATER SUPPLY AHEAD OF RPZ.

- SECURE ALL EXPOSED WATER SUPPLY PIPING TO BLOCK WALL.
- HOSE BIBBS AND MOP SINK USED FOR TRAP PRIMING



4 DOMESTIC SUPPLY PLAN
Scale: 1/4" = 1'-0"

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A Stratus Team Company
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DRAWN BY: JCL
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SHEET:
PLUMBING PLANS AND RISERS

SHEET NO.
P-101

PROJECT NO: 250594

PLUMBING FIXTURE SCHEDULE

SYMBOL	FIXTURE	MANUFACTURER	FITTING	HW	CW	WASTE
P1	FLUSH VALVE WATER CLOSET	TOTO CT705EN OR EQUAL BY AMERICAN STANDARD OR KOHLER	FLOOR MOUNTED, VITREOUS CHINA, 1.28 GPF LOW CONSUMPTION SIPHON JET FLUSHING TOILET COMPLYING WITH ASME 112. 19. 2. TOILET SHALL BE ELONGATED FONT BOWL. PROVIDE SC534 OPEN FRONT SEAT LESS COVER. SLOAN CROWN 111-1.28 FLUSHOMETER OR EQUAL BY ZURN OR TOTO.	-	1"	3"
P1H	ADA FLUSH VALVE WATER CLOSET	TOTO CT705ELN OR EQUAL BY AMERICAN STANDARD OR KOHLER	"FLOOR MOUNTED, VITREOUS CHINA, 1.28 GPF LOW CONSUMPTION SIPHON JET FLUSHING TOILET COMPLYING WITH ASME 112. 19. 2. TOILET SHALL BE ELONGATED FONT BOWL. PROVIDE SC534 OPEN FRONT SEAT LESS COVER. SLOAN CROWN 111-1.28 FLUSHOMETER OR EQUAL BY ZURN OR TOTO. TOP OF SEAT SHALL BE 17-19 INCHES AFF FOR ADA.	-	1"	3
P2	WALL MOUNT LAVATORY	TOTO LT307.4 OR EQUAL BY AMERICAN STANDARD OR KOHLER	VITREOUS CHINA LAVATORY WITH BACKSPLASH COMPLYING WITH ASME 112. 19. 2. TOP OF RIM SHALL BE 34 INCHES AFF FOR ADA. PROVIDE WITH LAV-GUARD PROTECTORS FOR SUPPLY AND DRAIN LINES. PROVIDE JR SMITH 0700 (CONCEALED ARMS) WITH 19" ARMS 0800 (WALL SUPPORT PLATE). USE A METERING TYPE FAUCET SIMILAR TO CHICAGO 3300-E280SAB.	1/2"	1/2"	2"
P3	WATER HAMMER ARRESTOR	ZURN Z1700 SERIES OR EQUAL BY WATTS OR SIOUX CHIEF	INSTALL ON BRANCH LINES PER MFG'S INSTRUCTIONS. PROVIDE ACCESS PANEL WHERE NECESSARY WHERE LOCATED ABOVE HARD CEILINGS OR WITHIN WALLS.	-	VARIES	-
P4	EXPANSION TANK	AMTROL ST-5 OR EQUAL BY WATTS OR BELL & GOSSETT	INSTALL ON COLD WATER LINE BETWEEN WATER HEATER AND RPZ	-	3/4"	-
P5	2" RPZ BACKFLOW PREVENTER	WATTS LF909 QT OR EQUAL BY CONBRACO OR WILKINS	RPZ ASSEMBLY CONSISTING OF A PRESSURE DIFFERENTIAL RELIEF VALVE LOCATED IN A ZONE BETWEEN TWO POSITIVE SEATING CHECK VALVES. THE ASSEMBLY SHALL INCLUDE TWO TIGHTLY CLOSING SHUTOFF VALVES BEFORE AND AFTER THE ASSEMBLY, TEST COCKS AND A PROTECTIVE STRAINER UPSTREAM OF THE FIRST SHUTOFF VALVE. THE ASSEMBLY SHALL MEET THE REQUIREMENTS OF ASSE 1013 AND AWWA C511	-	2"	-
P6	AIR ADMITTANCE VALVE	STUDOR REDIVENT OR APPROVED EQUAL	ANSI/ASSE 1051 LISTED. NSF STANDARD 14. PROVIDE PVC OR ABS CONNECTOR AS NECESSARY.CONNECT VALVE TO PIPING PER MANUFACTURER. INSTALL IN THE VERTICAL, UPRIGHT POSITION AFTER ROUGH-IN AND PRESSURE TESTING OF THE SYSTEM.PROVIDE WALL BOX IF NOT ABOVE CEILING OR OTHERWISE CONCEALED.	-	-	2"
P7	DRINKING FOUNTAIN	OASIS PG8ACSL OR EQUAL BY ELKAY OR STERN WILLIAMS	ADA COMPLIANT FOR ADULT AND CHILD. 8.0 GPH OF 50°F WATER AT 90°F AMBIENT. PROVIDE ACCESSORY APRON FOR ADA COMPLIANCE AS NECESSARY	-	3/8"	2"
P8	FLOOR CLEANOUT	ZURN, WATTS, JR SMITH	EPOXY COATED CAST IRON FLOOR CLEANOUT WITH ROUND ADJUSTABLE GASKETED NICKEL BRONZE TOP, REMOVABLE GAS TIGHT GASKETED BRASS CLEANOUT PLUG, AND NO HUB INLET.	-	-	4"
P9	FLOOR DRAIN	WATTS FD-200-A OR EQUAL BY ZURN OR JR SMITH	ON GRADE EPOXY COATED CAST IRON FLOOR DRAIN WITH ANCHOR FLANGE, WEEP HOLES, ADJUSTABLE ROUND NICKEL BRONZE STRAINER, AND NO HUB OUTLET. PROVIDE TRAP PRIMER CONNECTION OPTION IF NOTED.	-	-	3"
P10	INTERIOR HOSE BIBB	WOODFORD MODEL Y26 OR EQUAL BY ZURN OF MIFAB	PROVIDE CHECK VALVE AND ANTI-SIPHON PROTECTION IF NOT INTEGRAL TO UNIT. UNIT SHALL BE PROVIDED WITH THE LOOSE TEE KEY OPTION.		1/2"	
P11	MOP SINK	FIAT MSB2424 OR EQUAL BY FLORESTONE OR STERN WILLIAMS	OUTSIDE DIMENSIONS OF 24 X24 X10. 10 INCH HIGH WALLS WITH NOT LESS THAN 1 INCH WIDE. STAINLESS STEEL DRAIN BODY DESIGNED TO PROVIDE FOR A CAULK CONNECTION OR QDC-3 JOINT TO A 3 INCH DRAIN PIPE. INCLUDE A COMBINATION DOME STRAINER AND LINT BASKET OF STAINLESS STEEL. PROVIDE CHICAGO FAUCETS 8235-CP CHROME PLATED SERVICE FAUCET WITH VACUUM BREAKER, INTEGRAL STOPS, ADJUSTABLE WALL BRACE, PAIL HOOK AND 3/4 INCH HOSE THREAD ON SPOUT.	1/2"	1/2"	3"
P12	THERMOSTATIC MIXING VALVE	WATTS LFMMV OR EQUAL BY LAWLER OR LEONARD VALVE	ASSE STANDARD 1069 OR 1070 APPROVED WITH 1/2 INCH FEMALE NPT INLET AND OUTLET CONNECTIONS, BRASS BODY, AND INTEGRAL MOUNTING HOLES. TAMPER RESISTANT THERMOPLASTIC ENCLOSURE. SINGLE REPLACEABLE CARTRIDGE DESIGN.	1/2"	1/2"	-

WATER LINE SIZING TABLES

FIXTURE TYPE	QTY	DRAINAGE FIXTURE UNITS		WATER SUPPLY FIXTURE UNITS				
		EACH	TOTAL	CW	HW	CW & HW	HW TOTAL	TOTAL
WATER CLOSET, PUBLIC, FLUSH TANK	4	4.0	16.0	10.0	0.0	10.0	0.0	40.0
LAVATORY, PUBLIC	2	2.0	4.0	1.5	1.5	2.0	3.0	4.0
SERVICE SINK, OFFICES, ETC.	1	2.0	2.0	2.5	2.25	3.0	2.3	3.0
EMERGENCY FLOOR DRAIN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0

NOTE: HOSE BIBBS OMITTED FROM CALCULATION DUE TO BEING FOR INTERMEDIATE USE ONLY.

TOTAL DFU	22.0	
TOTAL WSFU	5.3	47.0
GPM	14.1	49.0
OTHER FIXTURES' GPM	0	0
TOTAL GPM	14.1	49.0

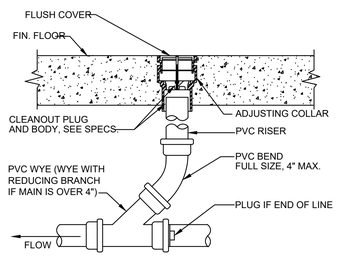
MINIMUM BUILDING DRAIN SIZE	4"
MINIMUM WATER LINE SIZE	2"

ELECTRIC WATER HEATER SCHEDULE

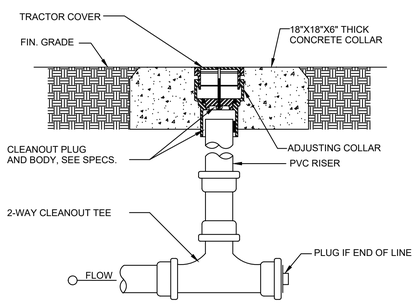
MARK	MFG	MODEL	TANK VOL	INPUT	RECOVERY	SET POINT	POWER		CONNECTIONS		OPTIONS
			GAL	KW	GPH @ 90°F ΔT	°F	VOLTAGE	PHASE	COLD	HOT	
WH1	A.O. SMITH	EJCT-20	20	2.5	11	110	120	1	3/4	3/4	1-5

1. PROVIDE GALVANIZED STEEL SAFETY PAN AND STAND
2. UL 174 LISTED
3. PROVIDE ASME LISTED TEMPERATURE AND PRESSURE RELIEF VALVE
4. MEET OR EXCEED ENERGY FACTOR REQUIREMENTS OF ASHRAE 90.1-2007
5. OR EQUAL BY RHEEM, BRADFORD WHITE, OR STATE

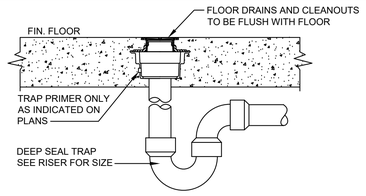
*SELECTION & SIZING NOTE: 11 GPH IS BASED ON 60° ΔT. SYSTEM IS DESIGNED FOR 60° ΔT WITH LIMITED USE OF MOP SINK



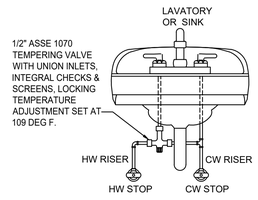
1 FLOOR CLEANOUT DETAIL
Scale: NONE



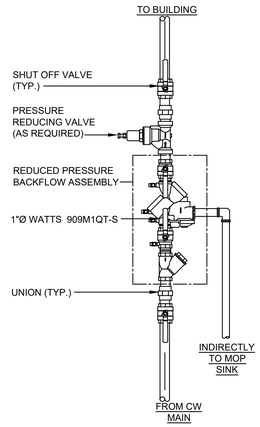
2 GRADE CLEANOUT DETAIL
Scale: NONE



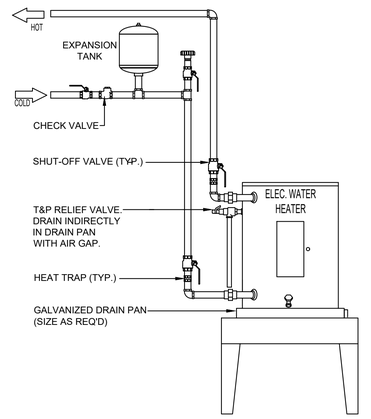
3 FLOOR DRAIN DETAIL
Scale: NONE



4 TEMPERING VALVE
Scale: NONE



5 BACKFLOW PREVENTER DETAIL
Scale: NONE



6 WATER HEATER DETAIL
Scale: NONE

KILIAN
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PO Box 3301, Henderson, NC 27536
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10/02/2025
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NEW CONSTRUCTION FOR:

COVE CREEK PICNIC SHELTER & RESTROOMS

SUGAR GROVE, NC

REVISION

7	6	5	4	3	2	1	0
							DATE

DESCRIPTION

ISSUED: 10/02/2025

ISSUED FOR PERMITTING
DESCRIPTION

DRAWN BY: JCL
CHECKED BY: MWK/REW

SHEET:
PLUMBING SCHEDULES AND DETAILS

SHEET NO.
P-301

PROJECT NO: 250594

GENERAL MECHANICAL NOTES:

ADMINISTRATIVE:

1. THE FOLLOWING ABBREVIATIONS SHALL APPLY TO NOTES AND PLANS:
   PC - PLUMBING CONTRACTOR,
   EC - ELECTRICAL CONTRACTOR,
   MC - MECHANICAL CONTRACTOR,
   GC - GENERAL CONTRACTOR,
   FASC - FIRE ALARM SYSTEM CONTRACTOR,
   AHJ - AUTHORITY HAVING JURISDICTION.
   SMC - CURRENT STATE MECHANICAL CODE (NORTH CAROLINA STATE BUILDING CODE: MECHANICAL CODE)
   SBC - CURRENT STATE BUILDING CODE (NORTH CAROLINA STATE BUILDING CODE: BUILDING CODE)
   SECC- CURRENT STATE ENERGY CONSERVATION CODE (NORTH CAROLINA STATE BUILDING CODE: ENERGY CONSERVATION CODE)
   NFPA - NATIONAL FIRE PROTECTION ASSOCIATION
2. "PROVIDE" MEANS TO FURNISH AND INSTALL. MC SHALL ALSO INSTALL MATERIALS FURNISHED BY OTHERS AND GENERAL CONTRACTOR AS SHOWN ON THE PLANS OR NECESSARY FOR A COMPLETE INSTALLATION.
3. THE MC SHALL BE RESPONSIBLE FOR A COMPLETE AND OPERATING SYSTEM AS DESCRIBED BY THESE PLANS AND SPECIFICATIONS.
4. ALL MATERIALS AND EQUIPMENT SHALL BE DELIVERED TO THE SITE AND UNLOADED BY THE CONTRACTOR AT AN APPROVED LOCATION. THE MC SHALL PROTECT ALL MATERIALS AND EQUIPMENT FROM BREAKAGE, THEFT, AND THE ELEMENTS. ALL MATERIALS AND EQUIPMENT SHALL REMAIN THE PROPERTY OF THE MC UNTIL THE PROJECT HAS BEEN COMPLETED AND TURNED OVER TO THE OWNER.
5. THE MC SHALL INSTALL ALL MATERIALS AND EQUIPMENT IN ACCORDANCE WITH THE SMC AND SBC AND ANY APPLICABLE LOCAL CODES. WHERE A CONFLICT EXISTS BETWEEN THE ABOVE REQUIREMENTS, THE MC SHALL OBTAIN CLARIFICATION FROM THE ENGINEER OR IN THE EVENT ANY PART OF THESE PLANS CONFLICTS WITH THE ABOVE REQUIREMENTS.
6. THE MC SHALL OBTAIN AND PAY FOR ALL PERMITS, FEES, AND INSPECTIONS NECESSARY FOR THE COMPLETION OF THE WORK UNDER THIS CONTRACT.
7. DO NOT SCALE THESE DRAWINGS-REFER TO ARCHITECTURAL SHEETS FOR DIMENSIONS.
8. THE MC SHALL VISIT THE SITE PRIOR TO BIDDING TO BECOME FAMILIAR WITH EXISTING CONDITIONS. THE MC SHALL CONTACT THE ENGINEER TO RESOLVE ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THESE PLANS. THE MC SHALL COORDINATE WITH OTHER TRADES PRIOR TO THE START OF CONSTRUCTION.
9. ALL MECHANICAL MATERIALS SHALL BE NEW AND FREE OF DEFECT AND LISTED AND LABELED BY UL OR AN APPROVED THIRD-PARTY AGENCY. ANY MATERIALS FOUND TO BE DEFECTIVE SHALL BE REPLACED BY THE MC WITHOUT ADDITIONAL COST TO THE OWNER. WHERE A MANUFACTURER AND MODEL NUMBER IS GIVEN, THE CITED EXAMPLE IS INTENDED TO ESTABLISH A STANDARD OF QUALITY AND NOT TO LIMIT PRODUCTS TO A PARTICULAR MANUFACTURER. SUCH EXAMPLES ARE USED TO CONVEY A GENERAL STYLE, TYPE, CHARACTER, AND QUALITY OF THE PRODUCT DESIRED; PRODUCTS DETERMINED TO BE EQUAL BY THE ENGINEER WILL BE ACCEPTED.
10. THESE PLANS ARE DIAGRAMMATIC. THE MC SHALL ADJUST THE LOCATIONS OF EQUIPMENT, DUCTS, REGISTERS, GRILLES, ETC, TO ACCOMMODATE PLANNED AND ENCOUNTERED INTERFERENCES. THE DRAWINGS DO NOT SHOW ALL BENDS, OFFSETS, AND FITTINGS THAT MAY BE REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM. THE MC SHALL MAKE ALLOWANCES FOR SUCH DEVIATIONS AND CONTINGENCIES IN BID TO IMPLEMENT THEM WITHOUT ADDITIONAL COST TO THE OWNER.
11. EC SHALL BE RESPONSIBLE FOR ALL POWER CONNECTIONS TO THE MECHANICAL EQUIPMENT. MC SHALL BE RESPONSIBLE FOR ALL CONTROL WIRING.
12. IT IS THE MC'S RESPONSIBILITY TO VERIFY THAT ITEMS FURNISHED FOR THIS CONTRACT WILL FIT IN THE SPACE AVAILABLE. THE MC SHALL MAKE FIELD MEASUREMENTS AS NECESSARY TO DETERMINE SPACE REQUIREMENTS. IF THE MC MUST ALTER EQUIPMENT DUE TO SPACE CONSIDERATIONS, THE MC SHALL PROVIDE SIZES AND SHAPES THAT FIT THE INTENT OF THESE DRAWINGS AND SPECIFICATIONS.
13. MC SHALL COORDINATE WITH THE EC REGARDING THE ELECTRICAL REQUIREMENTS OF ALL EQUIPMENT BEING PROVIDED.
14. MAINTAIN CLEARANCES FOR ALL EQUIPMENT ACCORDING TO MANUFACTURER'S RECOMMENDATIONS FOR SERVICEABILITY. ALL ROOFTOP EQUIPMENT MUST BE A MINIMUM OF 10 FEET FROM ROOF EDGE.
15. MC SHALL FURNISH A BOUND SET OF OPERATING AND MAINTENANCE INSTRUCTIONS FOR ALL EQUIPMENT TO THE OWNER UPON COMPLETION OF THE PROJECT. MC SHALL PROVIDE ALL DOCUMENTATION TO THE OWNER AS NECESSARY TO SUBMIT FOR FACTORY WARRANTIES.
16. CONTRACTOR SHALL PROTECT ALL HVAC EQUIPMENT FROM CONSTRUCTION AND SHEET ROCK DUST DURING CONSTRUCTION. ALL FILTERS SHALL BE REPLACED WITH NEW AT THE COMPLETION OF THE PROJECT.
17. ALL EQUIPMENT INSTALLED ON ROOF MUST BE WITHIN THE ROOF SCREEN.
18. IF A ROOF PENETRATION IS REQUIRED AND THE ROOF IS UNDER WARRANTY, USE THE AUTHORIZED ROOFER. PROVIDE DOCUMENTATION.
19. ALL PIPING, WIRING, CONDUIT, INSULATION, EQUIPMENT, SUPPORTS, ETC. SHALL BE SUITABLE FOR INSTALLATION IN A RETURN PLENUM AS NECESSARY. COORDINATE WITH OTHER TRADES ON LOCATIONS OF ALL PLENUMS.
20. MC SHALL COORDINATE WITH THE GENERAL CONTRACTOR TO ENSURE ALL APPLICABLE CONSTRUCTION WASTE IS RECYCLED DURING THE CONSTRUCTION PHASE OF THE PROJECT.

METHODS:

1. INSULATE DUCTWORK WITH FIBERGLASS DUCT WRAP; INSTALLED R-VALUE SHALL BE A MINIMUM R-6. COVERINGS AND LININGS, INCLUDING ADHESIVES WHEN USED, SHALL HAVE A FLAME SPREAD INDEX NOT MORE THAN 25 AND A SMOKE-DEVELOPED INDEX NOT MORE THAN 50 WHEN TESTED IN ACCORDANCE WITH ASTM E 84. ALL NEW DUCTWORK SHALL RECEIVE INSULATION ON THE OUTSIDE. INSTALL DUCT WRAP INSULATION WITH FACING OUTSIDE SO THAT TAPE FLAP OVERLAPS INSULATION AND FACING OF ADJACENT PIECE OF DUCT WRAP. INSULATION SHALL BE TIGHTLY BUTTED. FOR RECTANGULAR DUCTS, INSTALL SO INSULATION IS NOT EXCESSIVELY COMPRESSED AT DUCT CORNERS. STAPLE SEAMS APPROXIMATELY 6 INCHES ON CENTER WITH OUTWARD CLINCHING STAPLES. SEAL SEAMS WITH PRESSURE SENSITIVE TAPE MATCHING THE FACING. FOR RECTANGULAR DUCTS 24 INCHES IN WIDTH OR GREATER, SECURE DUCT WRAP TO THE BOTTOM OF THE DUCT WITH MECHANICAL FASTENERS SPACED 18 INCHES ON CENTER TO PREVENT SAGGING OF INSULATION. ADJACENT SECTIONS OF DUCT WRAP SHALL BE TIGHTLY BUTTED WITH THE 2 INCH TAPE FLAP OVERLAPPING. ALL TEARS, PUNCTURES, ETC. OF THE DUCT WRAP INSULATION SHALL BE SEALED WITH TAPE OR MASTIC TO PROVIDE A VAPOR TIGHT SYSTEM. INSULATION SHALL BE BY KNAUF INSULATION, OWENS CORNING CORP, OR CERTAINTEED CORPORATION.
2. VERIFY THAT DUCTS HAVE BEEN TESTED BEFORE APPLYING INSULATION MATERIALS. VERIFY THAT DUCT SURFACES ARE CLEAN, DRY AND FREE OF FOREIGN MATERIAL PRIOR TO INSULATING. DUCT COVERINGS SHALL NOT PENETRATE A WALL OR FLOOR REQUIRED TO HAVE A FIRE-RESISTANCE RATING OR REQUIRED TO BE FIRE BLOCKED.
3. WHERE DUCTS ARE CONNECTED TO EXTERIOR WALL LOUVERS AND DUCT OUTLET IS SMALLER THAN LOUVER FRAME, PROVIDE BLANK-OUT PANELS SEALING LOUVER AREA AROUND DUCT. USE SAME MATERIAL AS DUCT, PAINTED BLACK ON EXTERIOR SIDE. SEAL TO LOUVER FRAME AND DUCT.
4. PROVIDE DUCT ACCESS DOORS FOR INSPECTION AND CLEANING BEFORE AND AFTER FILTERS, COILS, FANS, AUTOMATIC DAMPERS, AT FIRE DAMPERS, COMBINATION FIRE AND SMOKE DAMPERS.
5. CONSTRUCT T's, BENDS, AND ELBOWS WITH RADII OF NOT LESS THAN 1-1/2 TIMES THE WIDTH OF THE DUCT ON CENTERLINE. WHERE NOT POSSIBLE AND WHERE RECTANGULAR ELBOWS MUST BE USED, PROVIDE TURNING VANES.
6. INCREASE DUCT SIZES GRADUALLY, NOT EXCEEDING 15 DEGREES DIVERGENCE; MAXIMUM OF 30 DEGREES DIVERGENCE UPSTREAM OF EQUIPMENT AND 45 DEGREES CONVERGENCE DOWNSTREAM.
7. IT SHALL BE THE RESPONSIBILITY OF THE MC TO SUSPEND AND SUPPORT ALL EQUIPMENT, DUCTWORK, DIFFUSERS, AND OTHER MATERIALS FOLLOWING RECOGNIZED ENGINEERING PRACTICES AND USING STANDARD, COMMERCIALLY ACCEPTED HANGERS AND SUSPENSION EQUIPMENT. ALL HVAC EQUIPMENT SHALL BE SECURELY MOUNTED TO THE BUILDING STRUCTURE AND SHALL NOT RELY ON CEILING OR WALL SURFACES FOR SUPPORT. THE SUPPORT ATTACHMENT SHALL SUPPORT THE WEIGHT OF THE EQUIPMENT PLUS THE WEIGHT OF THE SUPPORT ATTACHMENT ITSELF. SUPPORT FROM THE TOP CHORD OF THE ROOF JOISTS, GIRDERS, AND BEAMS. THE BOTTOM CHORD IS NOT TO BE USED FOR EQUIPMENT OR PIPING SUPPORT. HANGERS SHALL NOT BE ATTACHED TO CORRUGATED STEEL DECKING.
8. DUCTS SHALL BE SUPPORTED IN ACCORDANCE WITH SMACNA AT INTERVALS NOT EXCEEDING 10 FEET. DUCTS 36 INCHES OR LARGER SHALL HAVE TRAPEZE TYPE HANGERS SUSPENDED WITH THREADED ROD. SUPPORT DUCTS FROM BAR JOISTS, GIRDERS, OR BEAMS.
9. CHECK LOCATIONS OF AIR OUTLETS AND INLETS AND MAKE NECESSARY ADJUSTMENTS IN POSITION TO CONFORM WITH ARCHITECTURAL FEATURES, SYMMETRY, AND LIGHTING ARRANGEMENT. COORDINATE WITH SPRINKLER CONTRACTOR IF APPLICABLE.
10. PROVIDE BALANCING DAMPERS AT POINTS ON SUPPLY WHERE BRANCHES ARE TAKEN FROM LARGER DUCTS AS REQUIRED FOR AIR BALANCING. INSTALL MINIMUM 2 DUCT WIDTHS FROM DUCT TAKE-OFF. PROVIDE BALANCING DAMPERS ON DUCT TAKE-OFFS TO DIFFUSERS AND REGISTERS, REGARDLESS OF WHETHER DAMPERS ARE SPECIFIED AS PART OF THE DIFFUSER OR REGISTER ASSEMBLY. ADJUST AIR HANDLING AND DISTRIBUTION SYSTEMS TO PROVIDE DESIGN SUPPLY, RETURN, AND EXHAUST AIR QUANTITIES AT SITE ALTITUDE.
11. MC SHALL INSTALL PROGRAMMABLE THERMOSTATS AS SHOWN ON THE PLANS. THERMOSTAT SHALL BE MOUNTED AT 48 INCHES AFF. THERMOSTATS SHALL MEET THE REQUIREMENTS FOR THERMOSTATIC CONTROLS IN SECTION C403 OF THE SECC.
12. FRESH AIR INTAKES SHALL BE INSTALLED ON ALL UNITS AS SHOWN ON DRAWINGS. MAINTAIN 10 FEET OF DISTANCE BETWEEN FRESH AIR INTAKES AND ALL EXHAUST TERMINATIONS AND PLUMBING VENT THRU ROOFS.
13. MC SHALL INSTALL ALL EXHAUST FANS AND VENT TO THE BUILDING'S EXTERIOR. EC SHALL SWITCH FANS WITH LIGHTS OR ON SEPARATE SWITCH AS SHOWN.
14. P-TRAPS MUST BE INSTALLED ON ALL UNITS. MC SHALL INSTALL AUXILIARY DRAIN PANS UNDER OVERHEAD AIR HANDLERS AND AN AUTOMATIC CUT-OFF FLOAT SWITCH FOR EACH. P-TRAPS AND CONDENSATE LINES SHALL BE 1 INCH. P-TRAPS AND CONDENSATE LINES MAY BE PVC WHERE NOT LOCATED IN PLENUMS; OTHERWISE, THEY SHALL BE TYPE M COPPER.
15. INSTALL BACKDRAFT DAMPERS ON FRESH AIR AND EXHAUST DUCTS WHERE THEY PENETRATE THE THERMAL ENVELOPE PER SECC C402.5.5
16. DUCTS CONNECTING TO A FURNACE SHALL HAVE A CLEARANCE TO COMBUSTIBLES IN ACCORDANCE WITH THE FURNACE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
17. FOR STRUCTURES IN FLOOD HAZARD AREAS, DUCTS SHALL BE LOCATED ABOVE THE DESIGN FLOOD ELEVATION. DUCT SHALL NOT BE INSTALLED IN OR WITHIN 4 INCHES OF THE EARTH.
18. MC SHALL INSTALL FIRE DAMPERS AT EACH PENETRATION OF A RATED WALL AS INDICATED ON THE DRAWINGS OR AS REQUIRED BY THE AUTHORITY HAVING JURISDICTION. FIRE DAMPERS SHALL BE UL LABELED (UL 555), CURTAIN TYPE, WITH INTEGRAL FACTORY SLEEVE AND BLADES LOCATED OUTSIDE THE AIR STREAM. INSTALLATION OF ALL FIRE DAMPERS SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS AND SECTION 607 OF THE SMC. PROVIDE ACCESS PANELS FOR TESTING AND SERVICE AS NECESSARY. MC SHALL PROVIDE RADIATION DAMPERS AND THERMAL BLANKETS FOR ALL PENETRATIONS OF RATED CEILING ASSEMBLIES. RADIATION DAMPERS SHALL BE UL LABELED (UL 555C) AND INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFIC INSTALLATION INSTRUCTIONS. FIRE DAMPERS, COMBINATION FIRE/SMOKE DAMPERS, AND CEILING RADIATION DAMPERS SHALL BE BY RUSKIN, NAILOR, OR LLOYD INDUSTRIES.
19. MC SHALL INSTALL A SMOKE DETECTOR-UL LISTED FOR DUCT INSTALLATION (UL 268A) IN EACH UNIT'S RETURN UPSTREAM OF ANY FILTERS, OUTSIDE AIR CONNECTIONS, OR DECONTAMINATION EQUIPMENT. DUCT SMOKE DETECTORS SHALL BE INSTALLED IN ACCORDANCE WITH NFPA 72. DUCT SMOKE DETECTOR SUPERVISION SHALL COMPLY WITH 606.4.1 OF THE SMC. IF THE BUILDING IS (TO BE) EQUIPPED WITH A FIRE ALARM SYSTEM, THE FIRE ALARM SYSTEM CONTRACTOR SHALL FURNISH AND WIRE ALL DUCT SMOKE DETECTORS. IF THE BUILDING IS NOT PROVIDED WITH A FIRE ALARM SYSTEM, THE MC SHALL FURNISH AND WIRE THE DUCT SMOKE DETECTORS AND A/V DEVICE. IT SHALL BE THE RESPONSIBILITY OF THE MC TO INSTALL ALL SMOKE DUCT DETECTORS PER NFPA AND MFG'S INSTALLATION INSTRUCTIONS REGARDLESS OF WHO FURNISHES THE DEVICES.
20. UNITS PROVIDED WITH ECONOMIZERS SHALL ALSO BE PROVIDED WITH POWERED EXHAUST AND COMPARATIVE ENTHALPY CONTROLS.

MATERIALS:

1. THE MC SHALL PROVIDE ALL HEATING AND COOLING EQUIPMENT AS SCHEDULED ON THE DRAWINGS. ALTERNATES SHALL BE FROM MANUFACTURERS LISTED IN SCHEDULES. THE MC SHALL PROVIDE FACTORY AND FIELD INSTALLED ACCESSORIES AS SCHEDULED OR AS NECESSARY FOR A COMPLETE AND OPERATIONAL HVAC SYSTEM.
2. THE MC SHALL PROVIDE ALL EXHAUST AND SUPPLY FANS AS SCHEDULED OR BY EQUALS LISTED.
3. DUCTWORK IS SHOWN WITH FREE AREA DIMENSIONS. ALL DUCTWORK SHALL BE FABRICATED AND INSTALLED IN ACCORDANCE WITH SMACNA LOW PRESSURE DUCT STANDARD, 2 INCH S.P.
4. EXTERNAL DUCT INSULATION AND FACTORY-INSULATED FLEXIBLE DUCT SHALL BE LEGIBLY PRINTED OR IDENTIFIED AT INTERVALS NOT GREATER THAN 36 INCHES WITH THE NAME OF THE MANUFACTURER, THE THERMAL RESISTANCE R-VALUE AT THE SPECIFIED INSTALLED THICKNESS AND THE FLAME SPREAD AND SMOKE-DEVELOPED INDEXES OF THE COMPOSITE MATERIALS. ALL DUCT INSULATION PRODUCT R-VALUES SHALL BE BASED ON INSULATION ONLY, EXCLUDING AIR FILMS, VAPOR RETARDERS OR OTHER DUCT COMPONENTS, AND SHALL BE BASED ON TESTED C-VALUES AT 75ºF MEAN TEMPERATURE AT THE INSTALLED THICKNESS, IN ACCORDANCE WITH RECOGNIZED INDUSTRY PROCEDURES. THE INSTALLED THICKNESS OF DUCT INSULATION USED TO DETERMINE ITS R-VALUES SHALL BE DETERMINED AS FOLLOWS:
   4.1. FOR DUCT BOARD, DUCT LINER AND FACTORY-MADE RIGID DUCTS NOT NORMALLY SUBJECTED TO COMPRESSION, THE NOMINAL INSULATION THICKNESS SHALL BE USED.
   4.2. FOR DUCT WRAP, THE INSTALLED THICKNESS SHALL BE ASSUMED TO BE 75 PERCENT (25-PERCENT COMPRESSION) OF NOMINAL THICKNESS.
   4.3. FOR FACTORY-MADE FLEXIBLE AIR DUCTS, THE INSTALLED THICKNESS SHALL BE DETERMINED BY DIVIDING THE DIFFERENCE BETWEEN THE ACTUAL OUTSIDE DIAMETER AND NOMINAL INSIDE DIAMETER BY TWO.
5. ALL INSULATION CONTAINING FIBROUS MATERIALS EXPOSED TO AIRFLOW SHALL BE RATED FOR THAT EXPOSURE OR SHALL BE ENCAPSULATED. INSULATING PROPERTIES FOR ALL MATERIALS SHALL MEET OR EXCEED INDUSTRY STANDARDS. POLYSTYRENE PRODUCTS SHALL MEET ASTM C578. ALL INSULATION SHALL HAVE FORMALDEHYDE EMISSIONS NOT GREATER THAN 0.05 PPM. THE MAXIMUM FLAME SPREAD AND SMOKE DEVELOPED INDEX FOR INSULATION SHALL MEET THE REQUIREMENTS OF THE LOCAL CODES AND ORDINANCES ADOPTED BY THE JURISDICTION IN WHICH THE BUILDING IS LOCATED.
6. MASTIC USED TO SEAL DUCTWORK SHALL BE LISTED AND LABELED IN ACCORDANCE WITH UL 181A OR UL 181B MAINTAIN AMBIENT TEMPERATURES AND CONDITIONS REQUIRED BY MANUFACTURER OF ADHESIVES, MASTICS, AND INSULATION CEMENTS. DO NOT INSTALL DUCT SEALANT WHEN TEMPERATURES ARE LESS THAT THOSE RECOMMENDED BY THE SEALANT MANUFACTURER.
7. ALL ADHESIVES AND SEALANTS SHALL HAVE VOC CONTENT BELOW 20 GRAMS PER LITER AND WHICH MEET THE REQUIREMENTS OF THE MANUFACTURER OF THE PRODUCTS BEING ADHERED OR INVOLVED. ADHESIVES AND SEALANTS SHALL CONTAIN NO HEAVY METALS OR FORMALDEHYDE.
8. FACTORY-MADE AIR DUCTS AND CONNECTORS SHALL COMPLY WITH UL 181.
9. FLEXIBLE DUCT SHALL BE UL LISTED CLASS 0 OR CLASS 1, INSULATED, AND COMPLY WITH UL 181. FLEXIBLE DUCT SHALL BE FACTORY FORMED, COMPOSED OF SPIRAL WOUND CORROSION RESISTANT WIRE BONDED TO AN INNER FABRIC LINER. DUCT SHALL BE FACTORY INSULATED WITH A FOIL VAPOR BARRIER JACKET. CONNECT TO RIGID DUCT WITH SPIN-IN FITTING AND DAMPER. FLEXIBLE DUCTS AND AIR CONNECTORS SHALL NOT PASS THROUGH ANY FIRE RESISTANCE RATED ASSEMBLY.
10. THE MC SHALL PROVIDE ALL DIFFUSERS GRILLES, LOUVERS, AND OTHER AIR DISTRIBUTION OUTLETS AND INLETS. LOUVERS, GRILLES, AND DIFFUSERS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. FOR LAY-IN CEILINGS, INSTALL SUPPORT FROM THE STRUCTURE FOR EACH DIFFUSER OR DAMPER. AIR DISTRIBUTION OUTLETS AND INLETS SHALL BE AS SCHEDULE OR ALTERNATES LISTED.
11. AIR FILTERS SHALL BE INSTALLED IN ACCORDANCE WITH SECTION 605 OF THE SMC
12. THE MC SHALL PROVIDE ALL REFRIGERATION PIPING. ALL PIPE AND FITTINGS SHALL BE TYPE ACR HARD COPPER TUBING WITH SWEAT FITTINGS. REFRIGERATION LINES SHALL BE RUN NEATLY. WHERE A GROUP OF LINES ARE RUN, TRAPEZE HANGERS MAY BE USED. DO NOT USE CHAIN OR WIRE HANGERS. WRAP TUBING WITH RUBBER TAPE AT EACH CLAMP OR HANGER. FOR COVERED PIPES, HANGERS SHALL FIT AROUND THE OUTSIDE OF THE COVERING WITH 12 GAUGE GALVANIZED STEEL SHIELDS OF A LENGTH EQUAL TO THE OUTSIDE DIAMETER OF THE INSULATION AND COVERING 3/4 OF THE CIRCUMFERENCE OF THE INSULATION. SAGS SHALL NOT BE PERMISSIBLE. HORIZONTAL LINES SHALL PITCH DOWN NOT LESS THAN 1 INCH IN 40 FEET. INSULATE WITH 1 INCH CLOSED CELL ARMAFLEX TYPE INSULATION WITH A FLAME DENSITY RATING LESS THAN 25 AND A SMOKE DENSITY RATING LESS THAN 50. ALL JOINTS AND SPLICES IN INSULATION SHALL BE TAPED AND AIRTIGHT. SOLDER REFRIGERATION LINES USING 15 PERCENT SILVER SOLDER AND EVACUATE LINES TO 300 MICRONS. PROVIDE MOISTURE INDICATING SIGHT GLASS AND FILTER DRYER IN LIQUID LINE. PROVIDE OIL TRAPS AND DOUBLE RISERS IN REFRIGERANT SUCTION AND HOT GAS LINES WHERE REQUIRED TO PREVENT OIL SLUGGING AT THE COMPRESSOR AND INSURE PROPER LUBRICATION. MC SHALL BE RESPONSIBLE FOR SEALING LINE SET PENETRATIONS OF ANY RATED ASSEMBLIES IN ACCORDANCE WITH A SYSTEM LISTED IN THE UL DIRECTORY FOR THE SPECIFIC ASSEMBLY BEING PENETRATED. SEE ARCHITECTURAL PLANS FOR A LIST OF ALL UL FIRE RATED ASSEMBLIES.

KILIAN
A Stratus Team Company
PO Box 3301, Henderson, NC 27536
www.kilianengineering.com | P| 252.438.8178
CORPORATE LICENSE C-2277

NORTH CAROLINA PROFESSIONAL SEAL 17304 ENGINEER MICHAEL W. KILIAN
10/02/2025
KILIAN ENGINEERING CORPORATE SEAL NORTH CAROLINA

NEW CONSTRUCTION FOR:
COVE CREEK PICNIC SHELTER & RESTROOMS
SUGAR GROVE, NC

REVISION

7	6	5	4	3	2	1
						10/02/2025

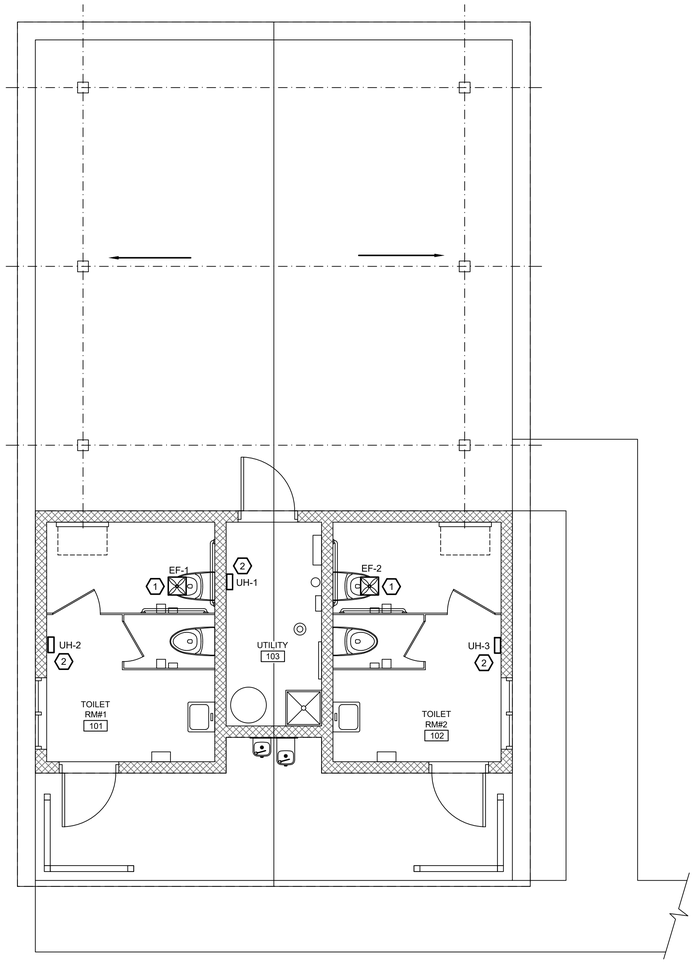
ISSUED: 10/02/2025
ISSUED FOR PERMITTING
DESCRIPTION

DRAWN BY: RSB
CHECKED BY: MWK/REW

SHEET:
MECHANICAL NOTES

SHEET NO.
M-001

PROJECT NO: 250594



1 MECHANICAL PLAN
Scale: 1/4" = 1'-0"

MECHANICAL PLAN HEX NOTES
1. ROUTE 6"Ø EXHAUST DUCT TO ROOF WITH APPROVED CAP.
2. INSTALL UNIT HEATER PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE WITH BUILT-IN THERMOSTAT, DISCONNECT, AND WALL MOUNTING KIT.

ELECTRIC HEATER SCHEDULE

MARK	MFG/Model #	AIR FLOW	HEATER	VOLT/PH	FLA	MOCP	NOTES
		CFM	KW		AMPS	AMPS	
UH-1	MARKEL HF3324TD-RP	175	2	240/1	-	8.3	1-3
UH-2	MARKEL HF3325TD-RP	175	3	240/1	-	12.5	1-3
UH-3	MARKEL HF3325TD-RP	175	3	240/1	-	12.5	1-3

1. BUILT-IN THERMOSTAT
2. BUILT-IN DISCONNECT SWITCH
3. PROVIDE WITH SURFACE MOUNTING SLEEVE KIT (FOR IN WALL INSTALLATION)

EXHAUST FAN SCHEDULE

MARK	MFG/MODEL #	TYPE	ESP (in WG)	CFM	VOLT/PH	FLA	SONES	NOTES
EF-1	GREENHECK SP-A200	CEILING	0.40	179	120/1	0.43	3	1-3

1. PROVIDE WITH PITCHED ROOF CURB & CAP FOR FLAT OR SLOPED ROOF, OR HOODED WALL WITH BACKDRAFT DAMPER CAP AS APPLICABLE
2. PROVIDE WITH SQUARE TO ROUND DUCT ADAPTER AS NECESSARY
3. OR EQUAL BY LOREN COOK OR PENNBARRY OR TWIN CITY

MECHANICAL DEVICE LEGEND		
SYMBOL	DESCRIPTION	REMARKS
T	THERMOSTAT	LOCATION MOUNT AT 48" A.F.F

MECHANICAL SYSTEM, SERVICE SYSTEMS, AND EQUIPMENT

METHOD OF COMPLIANCE:	PRESCRIPTIVE
THERMAL ZONE:	ZONE 5A
EXTERIOR DESIGN CONDITIONS:	
HEATING DESIGN DRY BULB	15.1°F
AT 50° SET POINT FOR HEATING ONLY	
INTERIOR DESIGN CONDITIONS:	
HEATING DESIGN DRY BULB	50°F
RESTROOM HEATING LOAD:	4,751 BTU/H
UTILTY ROOM HEATING LOAD:	3,313 BTU/H
MECHANICAL SPACING CONDITIONING SYSTEM:	
UNITARY	
DESCRIPTION OF UNIT(S)	(1) - 2KW ELECTRIC HEATER, (2) - 3KW ELECTRIC HEATER
BOILER	N/A
TOTAL BOILER OUTPUT	N/A
CHILLER	N/A
TOTAL CHILLER CAPACITY	N/A
EQUIPMENT EFFICIENCIES:	SEE SCHEDULES
EQUIPMENT SCHEDULES WITH MOTORS (MECHANICAL SYSTEMS):	SEE SCHEDULES
DESIGNER STATEMENT:	

TO THE BEST OF MY KNOWLEDGE, THE MECHANICAL DESIGN FOR THIS BUILDING COMPLIES WITH MECHANICAL AND EQUIPMENT REQUIREMENTS OF THE STATE BUILDING CODE AND ENERGY CONSERVATION CODE

2 MECHANICAL SCHEDULES

KILIAN
A Stratus Team Company
PO Box 3301, Henderson, NC 27536
www.Kilianengineering.com | P| 252.436.8178
CORPORATE LICENSE C-2277

NORTH CAROLINA PROFESSIONAL SEAL 17304 ENGINEER MICHAEL W. KILIAN
10/02/2025
KILIAN ENGINEERING, INC CORPORATE SEAL NORTH CAROLINA

NEW CONSTRUCTION FOR:
COVE CREEK PICNIC SHELTER & RESTROOMS
SUGAR GROVE, NC

REVISION

7	6	5	4	3	2	1	0

DESCRIPTION
DATE

ISSUED: 10/02/2025

ISSUED FOR PERMITTING
DESCRIPTION

DRAWN BY: RSB
CHECKED BY: MWK/REW

SHEET:
MECHANICAL PLAN & SCHEDULES

SHEET NO.
M-101

PROJECT NO: 250594

GENERAL ELECTRICAL NOTES:

ADMINISTRATIVE:

1. THE FOLLOWING ABBREVIATIONS SHALL APPLY TO NOTES AND PLANS:

   PC - PLUMBING CONTRACTOR,

   EC - ELECTRICAL CONTRACTOR,

   MC - MECHANICAL CONTRACTOR,

   GC - GENERAL CONTRACTOR,

   FASC - FIRE ALARM SYSTEM CONTRACTOR,

   AHJ - AUTHORITY HAVING JURISDICTION

   NECA- NATIONAL ELECTRICAL CONTRACTORS ASSOCIATION

   NEC- NATIONAL ELECTRICAL CODE

   SBC- CURRENT STATE BUILDING CODE (NORTH CAROLINA STATE BUILDING CODE: BUILDING CODE)

   SFC- CURRENT STATE BUILDING CODE: FIRE CODE (NORTH CAROLINA STATE BUILDING CODE: FIRE PREVENTION CODE)
2. "PROVIDE" MEANS TO FURNISH AND INSTALL. THE EC SHALL ALSO INSTALL MATERIALS AND EQUIPMENT FURNISHED BY OTHERS AND THE GENERAL CONTRACTOR AS REQUIRED.
3. EC SHALL PROVIDE LABOR, MATERIALS, EQUIPMENT, AND SERVICES NECESSARY AND REASONABLY INCIDENTAL TO INSURE A COMPLETE AND OPERATIONAL ELECTRICAL SYSTEM IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS. MINOR ITEMS, ACCESSORIES, AND DEVICES REASONABLY INFERABLE AS NECESSARY FOR THE COMPLETION AND PROPER OPERATION OF ANY ELECTRICAL SYSTEM SHALL BE PROVIDED BY THE EC.
4. WORKMANSHIP SHALL BE IN ACCORDANCE WITH NECA 1 "STANDARD PRACTICE FOR GOOD WORKMANSHIP IN ELECTRICAL CONTRACTING."
5. ALL MATERIALS AND EQUIPMENT SHALL BE DELIVERED TO THE SITE AND UNLOADED BY THE EC AT AN APPROVED LOCATION. THE EC SHALL PROTECT ALL MATERIALS AND EQUIPMENT FROM BREAKAGE, THEFT, AND THE ELEMENTS. ALL MATERIALS AND EQUIPMENT SHALL REMAIN THE PROPERTY OF THE EC UNTIL THE PROJECT HAS BEEN COMPLETED AND TURNED OVER TO THE OWNER.
6. THE EC SHALL OBTAIN AND PAY FOR ALL PERMITS, FEES, AND INSPECTIONS NECESSARY FOR THE COMPLETION OF THE WORK UNDER THIS CONTRACT.
7. DO NOT SCALE THESE DRAWINGS-REFER TO ARCHITECTURAL SHEETS FOR DIMENSIONS.
8. TRADE NAMES AND MANUFACTURERS ARE SPECIFIED TO ESTABLISH A QUALITY STANDARD. SUBSTITUTIONS SHALL BE PERMITTED IF APPROVED BY THE ENGINEER PRIOR TO INSTALLATION. ALL LISTED MODEL NUMBERS SHALL BE VERIFIED WITH THE MANUFACTURER FOR PROPER APPLICATION OF EQUIPMENT.
9. THE EC SHALL VISIT THE SITE PRIOR TO BIDDING TO BECOME FAMILIAR WITH EXISTING CONDITIONS. THE EC SHALL CONTACT THE ENGINEER TO RESOLVE ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THESE PLANS. THE EC SHALL COORDINATE WITH OTHER TRADES PRIOR TO THE START OF CONSTRUCTION.
10. GROUNDING AND BONDING SHALL BE PER NEC ARTICLE 250. THE RACEWAY SYSTEM SHALL NOT BE RELIED UPON FOR GROUNDING CONTINUITY. A GREEN EQUIPMENT GROUNDING CONDUCTOR, SIZED PER NEC TABLE 250-122, SHALL BE RUN IN ALL POWER RACEWAYS. FOR NON-ISOLATED GROUND CIRCUITS PROVIDE ONE EQUIPMENT GROUNDING CONDUCTOR PER CONDUIT RUN. FOR ISOLATED GROUND CIRCUITS, PROVIDE ONE NEUTRAL AND ONE ISOLATED GROUND WIRE FOR EACH CIRCUIT; IN ADDITION, PROVIDE ONE EQUIPMENT GROUNDING CONDUCTOR PER CONDUIT RUN. MAIN BONDING JUMPERS AND SYSTEM BONDING JUMPERS SHALL BE INSTALLED IN ACCORDANCE WITH 250.28 OF THE NEC. FOR BUILDINGS OR STRUCTURES SUPPLIED BY FEEDERS OR BRANCH CIRCUITS, GROUNDING AND BONDING SHALL BE IN ACCORDANCE WITH NEC 250.32. SEPARATELY DERIVED AC SYSTEMS SHALL BE GROUNDED IN ACCORDANCE WITH NEC 250.30. RESISTANCE TO GROUND SHALL NOT EXCEED 25 OHMS; ADDITIONAL GROUNDING ELECTRODES SHALL BE INSTALLED PER 250.56 AS NECESSARY.
11. ALL MATERIALS AND EQUIPMENT SHALL COMPLY WITH THE UNDERWRITERS' LABORATORIES, INC. STANDARDS OR HAVE UL APPROVAL, OR BEAR UL RE-EXAMINATION LISTING WHERE SUCH APPROVAL HAS BEEN ESTABLISHED FOR THE TYPE OF DEVICE IN QUESTION.
12. CONDUCTORS, FUSES, CIRCUIT BREAKERS, AND DISCONNECT SWITCHES SHOWN ON THESE PLANS HAVE BEEN SIZED FOR THE SPECIFIED EQUIPMENT. BEFORE ORDERING ELECTRICAL EQUIPMENT, THE EC SHALL COORDINATE WITH OTHER CONTRACTORS ON THE SITE AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES SHOULD CONDUCTOR, CIRCUIT BREAKER, OR FUSE SIZES REQUIRE CHANGE.
13. THE EC SHALL COORDINATE WITH THE GC TO ENSURE THE FOLLOWING MATERIALS ARE RECYCLED DURING THE CONSTRUCTION PHASE OF THE PROJECT: LIGHT FIXTURES, INCLUDING PROPER DISPOSAL OF BALLASTS, FLUORESCENT LIGHT BULBS, AND TRANSFORMERS, WIRING AND ELECTRICAL EQUIPMENT, AND INSULATION. WASTE MATERIALS CONTAINING LEAD, ASBESTOS, PCBs (FLUORESCENT LAMP BALLASTS), OR OTHER HARMFUL SUBSTANCES SHALL BE HANDLED AND DISPOSED OF IN ACCORDANCE WITH FEDERAL AND STATE LAWS AND REQUIREMENTS CONCERNING HAZARDOUS WASTE.
14. ALL WORK SHALL CONFORM TO NEC, SBC, AND ALL APPLICABLE LOCAL CODES.
15. THE EC SHALL ALSO COORDINATE WITH THE GC REGARDING THE BONDING OF THE FOOTING REBAR, SO THAT IT WILL BE IN PLACE AND READY AT TIME OF FOOTING INSPECTION.

METHODS:

1. EC SHALL REVIEW THE MECHANICAL PLANS TO ESTABLISH POINTS OF CONNECTION AND THE EXTENT OF THE ELECTRICAL WORK TO BE PROVIDED IN THE CONTRACT.
2. ALL CIRCUIT BREAKERS FEEDING HVAC EQUIPMENT SHALL BE HACR BREAKERS. ALL BRANCH CIRCUIT CONDUCTORS SHALL BE MINIMUM #12 AWG IN 3/4 in CONDUIT. EACH MULTI-WIRE BRANCH CIRCUIT SHALL BE PROVIDED WITH A MEANS TO SIMULTANEOUSLY DISCONNECT ALL UNGROUNDED CONDUCTORS AT THE SOURCE PER NEC 210.4(B). GROUP ALL CONDUCTORS OF EACH MULTI-WIRE BRANCH CIRCUIT PER 210.4(D) WITH WIRE TIES OR SIMILAR MEANS. DO NOT EXCEED THREE HOMERUNS PER CONDUIT. DO NOT INSTALL ISOLATED GROUND AND NON-ISOLATED GROUND CIRCUITS IN THE SAME CONDUIT. INSTALL CONDUCTORS OF DIFFERENT VOLTAGES IN SEPARATE CONDUITS.
3. ALL LIGHT FIXTURES SHALL BE SUPPORTED INDEPENDENTLY OF THE SUSPENDED CEILING. COORDINATE LIGHTING LAYOUT WITH CEILING GRID, MECHANICAL EQUIPMENT, DUCTWORK AND SPRINKLER HEADS AS NECESSARY. SEE REFLECTED CEILING PLAN FOR DETAILS. FLUORESCENT FIXTURES UTILIZING DOUBLE-ENDED LAMPS MUST HAVE A DISCONNECTING MEANS COMPLYING WITH NEC 410.130(G).
4. MOUNT LIGHT SWITCHES AT 48 in AFF. MULTIPLE SWITCHES AT SAME LOCATION SHALL BE UNDER ONE WALL PLATE. VERIFY WALL PLATE COLOR AND MATERIAL WITH THE ARCHITECT/OWNER. INSTALL SWITCHES WITH off POSITION DOWN. ALL SWITCHES SHALL BE HEAVY DUTY, IVORY PLASTIC WITH TOGGLE HANDLE, RATED 120-277V AC, AND COMPLYING WITH NEMA WD 6 AND WD 1. SWITCHES SHALL BE BY COOPER WIRING DEVICES, LEVITON MANUFACTURING, PASS & SEYMOUR, OR HUBBELL. PROVIDE BOX DEVICE PARTITION/DIVIDERS FOR MULTI-GANG BOXES FOR COMPLIANCE WITH NEC 404.8(B).
5. EC SHALL PROVIDE FIRE-STOPPING AT ALL ELECTRICAL PENETRATIONS OF RATED FLOORS AND WALLS TO PRESERVE OR RESTORE THE FIRE-RESISTANCE RATING. SEAL PENETRATIONS USING A UL LISTED SYSTEM FOUND IN THE UL DIRECTORY SPECIFIC TO THE UL LISTING OF THE ASSEMBLY BEING PENETRATED. SEE ARCHITECTURAL PLANS FOR UL RATED ASSEMBLIES SPECIFIC TO THIS PROJECT.
6. EC SHALL PROVIDE GFCI RECEPTACLES IN KITCHENS, RESTROOMS, OUTDOORS, AND IN SHOP AREAS AS REQUIRED BY NEC. REFRIGERATORS AND WATER COOLERS MUST HAVE A DEDICATED GFCI BREAKER. EACH OUTDOOR HVAC UNIT MUST HAVE A GFCI RECEPTACLE WITHIN 25 FEET FOR SERVICING. GFCI RECEPTACLES SHALL CONFORM TO UL 943 CLASS A AND UL 498 STANDARDS. SHOW WINDOW RECEPTACLES SHALL BE PROVIDED IN ACCORDANCE WITH 210.62 OF THE NEC. RECEPTACLES SHALL BE BY COOPER WIRING DEVICES, LEVITON MANUFACTURING, PASS & SEYMOUR, OR HUBBELL. ALL RECEPTACLES SHALL BE 125V RATED, HEAVY DUTY, AND COMPLY WITH NEMA WD 6 AND WD 1.
7. LOCATIONS AND HEIGHTS OF ALL WALL-MOUNTED DEVICES SHALL BE COORDINATED WITH THE ARCHITECT PRIOR TO INSTALLATION.
8. CONCEAL ALL CONDUIT EXCEPT IN MECHANICAL ROOMS OR UNFINISHED AREAS AS NOTED. USE EMT CONDUIT FOR ALL BRANCH CIRCUITS AND FEEDERS INSIDE THE BUILDING. TYPE MC CABLE AND TYPE AC CABLE MAY BE INSTALLED WITHIN WALLS IF ALL NEUTRAL WIRES, ISOLATED GROUND WIRES, AND EQUIPMENT GROUND WIRES AS LISTED ABOVE ARE CONTAINED IN THE CABLE. *** TYPE NM CABLE MAY BE USED FOR INTERIOR BRANCH CIRCUITS IN NORMALLY DRY LOCATIONS SUBJECT TO THE RESTRICTIONS OF NEC 334.10 AND 334.12. TYPE NM CABLE CONDUCTORS SHALL BE DERATED PER NEC 334.80. *** FLEXIBLE CONNECTIONS TO MOTORS AND OTHER EQUIPMENT SHALL BE MADE USING WEATHERPROOF FLEXIBLE CONDUIT. FOR LAY-IN LIGHT FIXTURES, USE MAXIMUM OF SIX (6) FEET OF FLEXIBLE MC CABLE (OR THE FLEXIBLE CONDUIT PROVIDED BY THE FIXTURE MANUFACTURER). SCHEDULE 40 PVC CONDUIT MAY BE USED FOR THE SECONDARY UNDERGROUND SERVICE, UNDERGROUND TELEPHONE SERVICE, AND BRANCH AND FEEDER CIRCUITS UNDER SLAB OR EXTERIOR TO THE BUILDING. EXPOSED EXTERIOR CONDUIT SHALL BE SCHEDULE 80 PVC. ALL UNDERGROUND RACEWAYS SHALL BE IDENTIFIED WITH UNDERGROUND LINE MARKING TAPE 6-8 in BELOW GRADE DIRECTLY ABOVE THE RACEWAY. PROVIDE PULL WIRE IN EMPTY CONDUITS. UPSIZE CONDUIT FROM MINIMUM SIZE AS NECESSARY FOR LONGER PULLS. UNDERGROUND RACEWAYS THAT STUB INTO THE BOTTOM OF SWITCHBOARDS, OUTDOOR TRANSFORMERS, GENERATORS, ETC., SHALL RISE AT LEAST 2 in ABOVE THE FINISHED SLAB TO PREVENT WATER FROM DRAINING INTO THE RACEWAYS. RACEWAYS THAT PENETRATE EXTERIOR WALLS OR INTERIOR PARTITIONS SEPARATING SPACES THAT WILL BE AT SIGNIFICANTLY DIFFERENT TEMPERATURES SHALL BE SEALED IN ACCORDANCE WITH ARTICLES 300.5(G), 300.7(A), AND 300.50(F) OF THE NEC. ROUTE CONDUIT IN AND UNDER SLAB FROM POINT-TO-POINT. ROUTE EXPOSED CONDUIT AND CONDUIT INSTALLED ABOVE ACCESSIBLE CEILINGS PARALLEL AND PERPENDICULAR TO WALLS. COMPLETELY AND THOROUGHLY SWAB ALL RACEWAYS BEFORE INSTALLING WIRE. PULL ALL CONDUCTORS INTO EACH RACEWAY AT ONE TIME. USE A SUITABLE WIRE PULLING LUBRICANT FOR BUILDING WIRE #4 AWG AND LARGER.
9. CABLES, RACEWAYS, OR BOXES, INSTALLED IN EXPOSED OR CONCEALED LOCATIONS UNDER METAL-CORRUGATED SHEET ROOF DECKING, SHALL BE INSTALLED AND SUPPORTED SO THERE IS NOT LESS THAN 1-1/2 in MEASURED FROM THE LOWEST SURFACE OF THE ROOF DECKING TO THE TOP OF THE CABLE, RACEWAY, OR BOX. A CABLE, RACEWAY, OR BOX SHALL NOT BE INSTALLED IN CONCEALED LOCATIONS IN METAL-CORRUGATED, SHEET DECKING-TYPE ROOF. SEE NEC 300.4(E)
10. THE EC SHALL PROVIDE ALL OUTLET, JUNCTION, PULL BOXES, FITTINGS, AND SUPPORTS. ALL OUTLET AND JUNCTION BOXES SHALL BE GALVANIZED STEEL TYPE BY APPLETON, STEEL CITY, OR RACO. EXTERIOR BOXES SHALL BE TYPE FS. VAPORTITE BOXES SHALL BE TYPE GS. WHERE SURFACE MOUNTED BOXES ARE USED, THOSE BOXES AND THEIR FACEPLATES SHALL HAVE ROUNDED CORNERS. BOXES INSTALLED IN FLOORS SHALL BE RATED FOR THE APPLICATION. MOUNT JUNCTION AND OUTLET BOXES FLUSH WITH FINISH SURFACES UNLESS OTHERWISE NOTED. WHERE MOUNTING HEIGHTS ARE GIVEN, THEY SHALL BE MEASURED FROM THE FINISHED FLOOR TO THE CENTER OF THE BOX. ALL BOXES SHALL BE SIZED PER NEC ARTICLE 314. ALL OUTLET AND JUNCTION BOXES SHALL HAVE A COVER PLATE, PROVIDED BY THE EC. OUTLET BOXES IN RATED WALLS SHALL BE INSTALLED IN ACCORDANCE WITH SBC 714.3.2 (MAXIMUM BOX SIZE IS 16 SQUARE in AND MAXIMUM OF SIX (6) BOXES PER 100 SQUARE FEET). INSTALL OUTLET BOXES IN RATED WALLS SUCH THAT OPENINGS OCCUR IN ONE SIDE ONLY WITHIN ANY GIVEN STUD SPACE. ALL CLEARANCES BETWEEN THE OUTLET BOX AND THE GYPSUM BOARD SHALL BE FILLED WITH JOINT COMPOUND OR OTHER APPROVED FIRE STOP MATERIAL. FLUSH MOUNTED JUNCTION BOXES IN ADJACENT ROOMS SHALL NOT BE MOUNTED BACK-TO-BACK. SURFACE MOUNTED FIXTURES SHALL BE FED THROUGH FLUSH MOUNTED 4x4 OCTAGONAL OR SQUARE BOXES.
11. ALL CONDUIT, BOXES, AND ELECTRICAL EQUIPMENT SHALL BE FIRMLY AND SECURELY FASTENED TO OR SUPPORTED FROM THE BUILDING STRUCTURAL MEMBERS OR EMBEDDED IN CONCRETE OR MASONRY. ELECTRICAL SUPPORTS SHALL NOT BE ATTACHED TO DUCTWORK, PIPING, OR THEIR SUPPORTS. HANGERS SHALL BE CATALOG ITEMS COMPATIBLE WITH AND SUITABLE FOR THE INTENDED USE. FOR METAL ROOF DECK INSTALLATIONS, 1 in EMT CONDUIT MAXIMUM AND 4 in JUNCTION BOXES MAXIMUM MAY BE SUPPORTED BY DECKING. THE SUSPENDED CEILING SYSTEM SHALL NOT BE USED FOR THE SUPPORT OF ELECTRICAL RACEWAY SYSTEMS OR SUPPORT OF COMMUNICATIONS OR DATA SYSTEMS WIRING. CONTRACTOR SHALL COMPLY WITH 1613 OF THE SBC.
12. ALL TELEPHONE AND COMMUNICATIONS OUTLETS AND RACEWAYS ARE ROUGH-INS ONLY. EACH TELEPHONE AND COMMUNICATIONS OUTLET SHALL BE A 4 in SQUARE BY 2-1/8 in DEEP BOX WITH 3/4 in KNOCK-OUTS AND A 3/4 in CONDUIT STUBBED FROM THE OUTLET BOX TO ABOVE THE CEILING. PROVIDE A NON-METALLIC INSULATING BUSHING ON ALL CONDUITS STUBBED ABOVE THE CEILING. PROVIDE A BLANK COVER PLATE ON ALL OUTLET BOXES.
13. EC SHALL INSTALL DISCONNECT SWITCHES IN SIGHT OF ALL HARDWIRED EQUIPMENT AND APPLIANCES OR PROVIDE BREAKERS CAPABLE OF BEING LOCKED IN THE OPEN POSITION PER NEC 422.31. FOR MOTOR DRIVEN APPLIANCES, PROVIDE A DISCONNECTING MEANS PER NEC 422.31 AND 430 PART IX. WHERE AN INDIVIDUAL DISCONNECT SWITCH, CIRCUIT BREAKER, STARTER, ETC, IS SHOWN ON THE PLANS ADJACENT TO ITS LOAD AND NOT LOCATED ON A WALL, PROVIDE NECESSARY MATERIALS AND LABOR TO SUPPORT THE DEVICE.
14. EC SHALL FIELD IDENTIFY ALL SWITCH BOARD, PANEL BOARDS, CONTROL PANELS, METER SOCKETS, ETC., TO WARN QUALIFIED PERSONS OF POTENTIAL ELECTRICAL ARC FLASH HAZARDS PER 110.16 OF NEC.
15. EC SHALL PROVIDE NAMEPLATES FOR IDENTIFICATION OF ALL EQUIPMENT, SWITCHES, PANELS, ETC. THE NAMEPLATES SHALL BE LAMINATED PHENOLIC PLASTIC, BLACK FRONT, AND BACK WITH WHITE CORE, WHITE ENGRAVED LETTERS (1/4 in MINIMUM) ETCHED INTO THE WHITE CORE. EC SHALL PROVIDE A TYPE WRITTEN DIRECTORY CARD THAT ACCURATELY IDENTIFIES CIRCUITS INSIDE EACH PANEL. HANDWRITTEN LABELS ARE NOT ACCEPTABLE.
16. IN ACCORDANCE WITH SECTION 510 OF THE SFC, TESTING WILL BE REQUIRED TO DETERMINE SATISFACTORY FIRST RESPONDER RADIO SIGNAL STRENGTH INSIDE EACH BUILDINGS ON SITE. TESTING WILL NEED TO EITHER BE COMPLETED BY A COUNTY FIRE INSPECTOR (OBTAIN BY REQUESTING A COURTESY INSPECTION) OR A CERTIFIED 3RD PARTY. TESTING SHALL TAKE PLACE AT BOTH 80% PROJECT COMPLETION AND AGAIN AT 100% COMPLETION. IF UNACCEPTABLE SIGNAL DEGRADATION IS PRESENT AT EITHER 80% OR 100% INSPECTION, THEN AN ACCEPTABLE BOOSTER SYSTEM SHALL BE ADDED TO THE BUILDING DESIGN AT THAT TIME.
17. COLOR CODE CONDUCTORS PER NEC. FEEDERS SHALL BE IDENTIFIED IN ACCORDANCE WITH NEC 215.12. USE BLACK AND RED FOR PHASES A AND B RESPECTIVELY ON 120/240 VOLT SINGLE-PHASE SYSTEMS AND WHITE FOR THE NEUTRAL. USE BLACK, RED, AND BLUE FOR PHASES A, B, AND C RESPECTIVELY ON 208Y/120 VOLT THREE-PHASE Y SYSTEMS AND WHITE FOR THE NEUTRAL. ISOLATED GROUND WIRES SHALL BE GREEN WITH YELLOW BANDS OR STRIPES. USE BROWN, ORANGE, AND YELLOW FOR PHASES A, B, AND C RESPECTIVELY FOR 480Y/277 VOLT THREE-PHASE Y SYSTEMS AND GRAY FOR THE NEUTRAL. ON 4 WIRE DELTA CONNECTED SYSTEMS WHERE THE MIDPOINT OF ONE PHASE WINDING IS GROUNDED, THE PHASE CONDUCTOR HAVING THE HIGHER PHASE TO GROUND VOLTAGE SHALL BE PERMANENTLY IDENTIFIED WITH AN OUTER FINISH THAT IS ORANGE IN COLOR; THIS IDENTIFICATION SHALL BE MADE AT EACH POINT WHERE A CONNECTION IS MADE. COLORS SHALL BE FACTORY APPLIED FOR CONDUCTORS #6 AWG AND SMALLER. ALL EQUIPMENT GROUNDING CONDUCTORS SHALL BE GREEN IN COLOR AND MINIMUM #12 AWG. THE EC SHALL PROVIDE PLENUM RATED CABLE FOR ANY ELECTRICAL, TELEPHONE, COMMUNICATION, OR OTHER CABLE THAT ENTERS CEILING RETURN PLENUMS.
18. ABANDONED CONDUIT AND BOXES SHALL HAVE ALL ELECTRICAL WIRING REMOVED COMPLETELY AND NOT JUST "MADE SAFE." CONDUIT AND BOXES SHALL BE REMOVED WHERE PRACTICAL WITHOUT CREATING ADDITIONAL DEMOLITION/RESTITUTION WORK FOR OTHER TRADES.
19. WHERE CONDUCTORS ARE RUN IN PARALLEL, THE EC SHALL COMPLY WITH NEC 310.10(G).
20. ALL EQUIPMENT LOCATED UNDER KITCHEN HOODS SHALL BE WIRED FROM SHUNT TRIP BREAKERS.
21. ISOLATED-GROUND TYPE RECEPTACLES SHALL BE INSTALLED IN ACCORDANCE WITH NEC 250.146(D). ISOLATED GROUND RECEPTACLES SHALL BE ORANGE IN COLOR.
22. ALL RECEPTACLES LOCATED WITHIN DWELLING UNITS SHALL HAVE AFCI PROTECTION IN ACCORDANCE WITH SECTION 210.12 OF THE NEC. RECEPTACLES IN DWELLING UNITS SHALL BE LISTED TAMPER-RESISTANT PER NEC 406.12.
23. PROVIDE AND INSTALL LISTED TAMPER PROOF RECEPTACLES IN CLASSROOMS.
24. IN PATIENT CARE AREAS, EQUIPMENT GROUNDING SHALL COMPLY WITH NEC 517.13 (THIS INCLUDES LIGHTS AND SWITCHES). THE METAL RACEWAY SYSTEM, METALLIC CABLE ARMOR, OR SHEATH ASSEMBLY SHALL ITSELF QUALIFY AS AN EQUIPMENT GROUNDING CONDUCTOR PER NEC 250.118.
25. IN ASSEMBLY AREAS EXCEEDING 100 PERSONS OCCUPANCY, WIRING METHODS SHALL COMPLY WITH NEC 518.
26. TRANSFER EQUIPMENT SHALL BE LISTED FOR THE PARTICULAR USE (I.E., "EMERGENCY" OR "STANDBY") AND SHALL BE APPROVED BY THE AUTHORITY HAVING JURISDICTION.
27. PROVIDE AN UNDERGROUND PVC CONDUIT SYSTEM FOR TELEPHONE SERVICE WITH PULL WIRES. EC SHALL COORDINATE WITH TELEPHONE UTILITY REGARDING ADDITIONAL FACILITIES REQUIRED FOR THE SERVICE INSTALLATION.
28. INSTALL ONE (1) 3/4 in FIRE RETARDANT TREATED PLYWOOD BACKBOARD WHERE INDICATED ON THE DRAWINGS FOR THE USE BY THE TELEPHONE SYSTEM. PROVIDE A 120 VOLT RECEPTACLE ADJACENT TO THE TELEPHONE BOARD. GROUND ALL TELEPHONE AND COMMUNICATIONS CIRCUITS PER NEC 800.

MATERIALS:

1. THE EC SHALL PROVIDE ALL NECESSARY DISCONNECTS, SWITCHES, RECEPTACLES, TERMINALS, ETC, UNDER THE ELECTRICAL BID AND SHALL INCLUDE ALL NECESSARY CIRCUITS AND CONNECTIONS TO THE EQUIPMENT PROVIDED BY ALL SUPPLIERS, UNLESS NOTED OTHERWISE BY OTHER DISCIPLINES.
2. EC SHALL PROVIDE ALL SERVICE ENTRANCE EQUIPMENT, SUB PANELS, AND OTHER ELECTRICAL DISTRIBUTION EQUIPMENT AS NECESSARY FOR A COMPLETE INSTALLATION. EC SHALL COORDINATE WITH UTILITY REGARDING SERVICE AND METERING DETAILS. *PRIOR TO ORDERING EQUIPMENT, THE EC SHALL OBTAIN THE AVAILABLE FAULT CURRENT OR TRANSFORMER SIZE AND IMPEDANCE FROM THE UTILITY AND CONTACT THE ENGINEER IF THE VALUE EXCEEDS THE EQUIPMENT SPECIFIED.* PANEL BOARDS AND SWITCH BOARDS SHALL BE SQUARE D, CUTLER-HAMMER, SIEMENS, OR GE. BUSES SHALL BE COPPER UNLESS OTHERWISE APPROVED BY THE ENGINEER. RECESSED PANEL BOARDS SHALL BE INSTALLED FLUSH WITH THE WALL FINISH. METER BASES SHALL COMPLY WITH THE UTILITY'S SPECIFICATIONS AND SHALL BE MOUNTED AT A HEIGHT APPROVED BY THE UTILITY. ALL EQUIPMENT IDENTIFIED FOR SERVICE ENTRANCE USE SHALL BE SO LABELED AND UL LISTED FOR SUCH USE. EC SHALL INSTALL ALL ELECTRICAL EQUIPMENT WITH CLEARANCES PER NEC 110.26. EC SHALL PERMANENTLY LABEL EQUIPMENT PER NEC 110.24.
3. ENCLOSED SAFETY SWITCHES SHALL BE HEAVY DUTY TYPE BY SQUARE D, EATON, OR GE. ENCLOSED SWITCHES SHALL HAVE A HANDLE LOCKABLE IN THE OFF POSITION AND SHALL HAVE A HANDLE INTERLOCKED TO PREVENT OPENING THE FRONT COVER WHILE IN THE ON POSITION. ENCLOSED SWITCHES OF THE FUSIBLE TYPE SHALL BE FUSED IN ACCORDANCE WITH NAMEPLATE DATA WITH DUAL ELEMENT TYPE FUSES BY BUSSMAN, LITTELFUSE, OR MERSEN.
4. OCCUPANCY SENSORS SHALL BE BY WATTSTOPPER, LUTRON, LEVITON, SENSOR SWITCH, HUBBELL, OR APPROVED EQUAL.
5. CIRCUIT BREAKERS SHALL BE MOLDED-CASE, THERMAL MAGNETIC TYPE WITH QUICK-MAKE, QUICK-BREAK MECHANISM, COMMON TRIP ON MULTI-POLE BREAKERS, AND UL LISTED FOR BOTH COPPER AND ALUMINUM CONDUCTORS. CIRCUIT BREAKERS IN PANELS SHALL BE SERIES RATED WITH THE MAIN BREAKER, FULLY RATED FOR THE SYSTEM, OR SERIES RATED WITH THE BREAKER FEEDING THE PANEL FROM THE FACTORY.
6. ALL WIRE, CONNECTORS, TERMINALS, AND LUGS SHALL BE PROVIDED BY THE EC. WHERE CONDUCTORS ARE RUN IN PARALLEL, LUGS SHALL BE LISTED FOR PARALLEL CONDUCTORS. PUSH WIRE CONNECTORS ARE NOT ALLOWED FOR BUILDING WIRE. PUSH CONNECTORS ARE ONLY ALLOWED, WHEN APPROVED, AS PART OF MANUFACTURED LISTED PRODUCTS. ALL WIRE SHALL BE INSTALLED IN CONDUIT UNLESS SPECIFICALLY NOTED OTHERWISE.
7. THE INSULATION TYPE FOR INTERIOR WIRING SHALL BE DUAL RATED THHN/THWN OR XHHW; ALL WIRING INSTALLED BELOW GRADE OR IN MOIST OR WET LOCATIONS SHALL HAVE TYPE THWN OR XHHW INSULATION. INSULATION VOLTAGE RATING SHALL BE 600 VOLTS AND A MINIMUM TEMPERATURE RATING OF 75°C. CONDUCTORS SHALL BE SOLID OR STRANDED COPPER FOR #10 AWG AND #12 AWG, AND STRANDED COPPER FOR #8 AWG AND LARGER SIZES. ALL WIRING AND CABLE SHALL BE UL LISTED. ALL TERMINATIONS AND DEVICES SHALL BE RATED FOR USE WITH 75°C CONDUCTORS. FINAL CONNECTIONS TO ALL MOTORS AND EQUIPMENT SUBJECT TO VIBRATION OR MOVEMENT SHALL BE MADE WITH STRANDED COPPER CONDUCTORS. CONDUCTORS SHALL BE BY CERRO WIRE, INC, INDUSTRIAL WIRE & CABLE, INC, ENCORE WIRE CORPORATION, OR SOUTHWIRE COMPANY.
8. JOINTS IN SOLID CONDUCTORS SHALL BE SPLICED USING IDEAL "WIRE NUTS", 3M "SCOTCH LOCK", OR T&B "PIGGY" CONNECTORS IN JUNCTION BOXES, OUTLET BOXES, AND LIGHTING FIXTURES. JOINTS IN STRANDED CONDUCTORS SHALL BE SPLICED BY APPROVED MECHANICAL CONNECTORS AND GUM RUBBER TAPE OR FRICTION TAPE. SOLDERLESS MECHANICAL CONNECTORS FOR SPLICES AND TAPS, PROVIDED WITH UL APPROVED INSULATING COVERS, MAY BE USED INSTEAD OF MECHANICAL CONNECTORS PLUS TAPE. IN ALL CASES, CONDUCTORS SHALL BE CONTINUOUS FROM OUTLET TO OUTLET AND NO SPLICING SHALL BE MADE EXCEPT WITHIN OUTLET OR JUNCTION BOXES, TROUGHS, OR GUTTERS. WHERE CONCENTRIC, ECCENTRIC, OR OVERSIZED KNOCKOUTS ARE ENCOUNTERED, A GROUNDING TYPE INSULATED BUSHING SHALL BE PROVIDED.
9. ALL LUMINAIRES SHALL BE LISTED. LUMINAIRES IN WET OR DAMP LOCATIONS SHALL BE MARKED AS SUITABLE FOR THE RESPECTIVE USE. EMERGENCY LIGHTING SHALL BE INSTALLED AS SHOWN. FINAL LOCATIONS OF ALL EXIT AND EMERGENCY LIGHTS SHALL BE VERIFIED WITH THE BUILDING INSPECTOR PRIOR TO INSTALLATION. ALL FLUORESCENT FIXTURES SHALL HAVE ELECTRONIC BALLASTS MEETING ANSI C82.11 FOR ELECTRONIC BALLAST PERFORMANCE. ALL BALLASTS SHALL BE UL LISTED AND MEET FEDERAL AND STATE EFFICIENCY REQUIREMENTS.
10. ALL CONDUIT, FITTINGS, COUPLINGS, AND SUPPORTS SHALL BE PROVIDED BY THE EC. CONDUIT FITTINGS AND COUPLINGS SHALL BE BY APPLETON, RACO, OR O-Z/GEDNEY. COUPLINGS SHALL BE THREADED, SET-SCREW, OR COMPRESSION TYPE. INDENTER OR CRIMP TYPE ARE NOT PERMITTED. CONDUIT FITTINGS AT ALL ELECTRICAL BOXES INCLUDING PULL, JUNCTION, AND OUTLET BOXES, SHALL HAVE INSULATED THROATS TO PREVENT INSULATION SCORING. DIE CAST FITTINGS ARE NOT PERMITTED
11. EMT SHALL BE MANUFACTURED IN ACCORDANCE WITH AMERICAN NATIONAL STANDARDS INSTITUTE-AMERICAN NATIONAL STANDARD FOR STEEL ELECTRICAL METALLIC TUBING (EMT), ANSI C80.3 AND UL 797. RIGID METAL CONDUIT SHALL BE MANUFACTURED IN ACCORDANCE WITH ANSI-AMERICAN NATIONAL STANDARD FOR ELECTRICAL RIGID STEEL CONDUIT (ERSC), ANSI C80.1 AND UL 6. INTERMEDIATE METAL CONDUIT SHALL BE MANUFACTURED IN ACCORDANCE WITH ANSI-AMERICAN NATIONAL STANDARD FOR INTERMEDIATE METAL CONDUIT ANSI C80.6 AND UL 1242.
12. METAL CONDUIT SHALL BE BY ALLIED TUBING & CONDUIT, BECK MANUFACTURING, INC, OR WHEATLAND TUBE COMPANY. FLEXIBLE METAL CONDUIT, LIQUID-TIGHT FLEXIBLE METAL CONDUIT, AND NONMETALLIC CONDUIT SHALL BE BY AFC CABLE SYSTEMS, INC, ELECTRI-FLEX COMPANY, OR INTERNATIONAL METAL HOSE.

KILIAN
A Stratus Team Company
PO Box 3301, Henderson, NC 27536
www.kilianengineering.com | P| 252.436.8178
CORPORATE LICENSE C-2277

NORTH CAROLINA PROFESSIONAL SEAL 17304 ENGINEER MICHAEL W. KILIAN
10/02/2025
KILIAN ENGINEERING, INC. CORPORATE SEAL NORTH CAROLINA

NEW CONSTRUCTION FOR:

COVE CREEK PICNIC SHELTER & RESTROOMS

SUGAR GROVE, NC

REVISION

7	6	5	4	3	2	1	NO
							DESCRIPTION

ISSUED: 10/02/2025

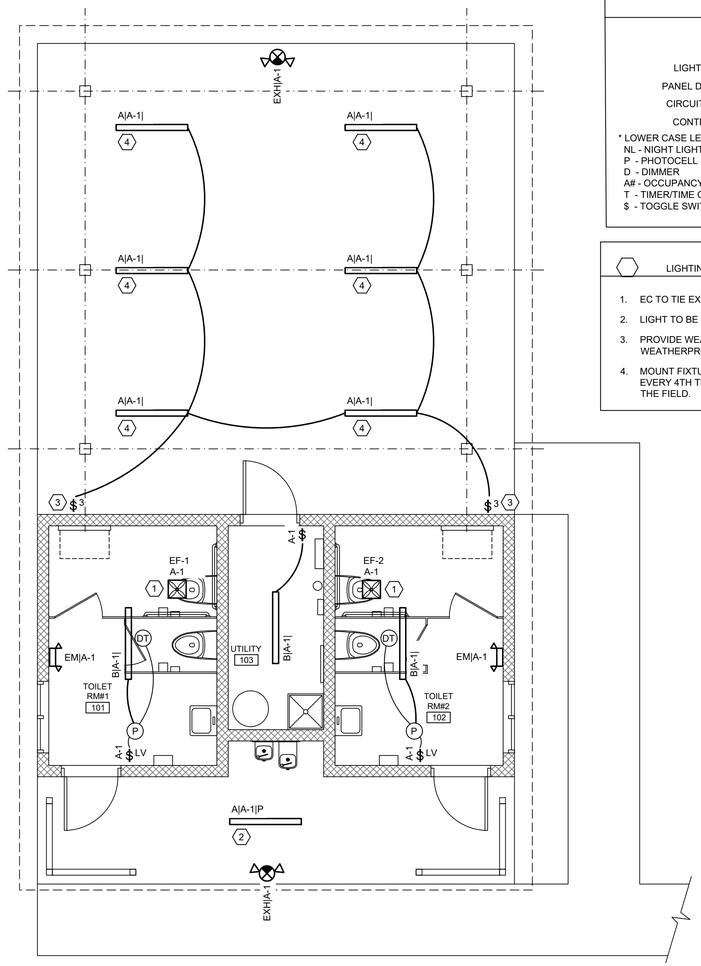
ISSUED FOR PERMITTING
DESCRIPTION

DRAWN BY: RSB
CHECKED BY: MWK/REW

SHEET: ELECTRICAL NOTES

SHEET NO.
E-001

PROJECT NO: 250594



1 LIGHTING PLAN

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

LIGHTING CIRCUIT DESIGNATIONS

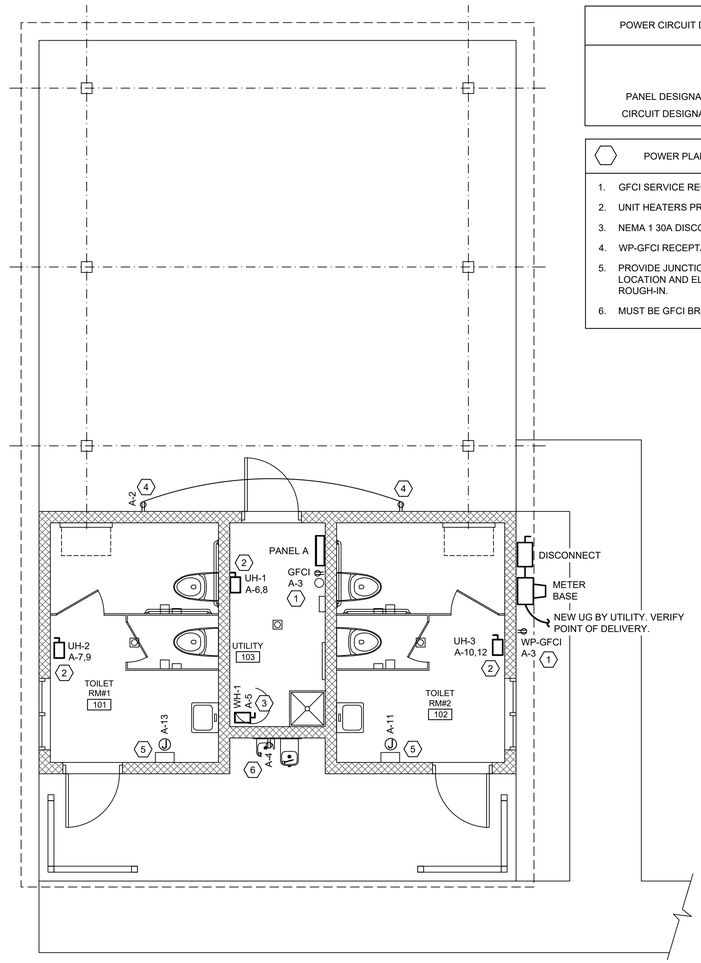
A | A#-# | C

- LIGHT FIXTURE
- PANEL DESIGNATION
- CIRCUIT DESIGNATION
- CONTROL DESIGNATION

* LOWER CASE LETTER INDICATES SWITCH ID
NL - NIGHT LIGHT - 24/7 OPERATION
P - PHOTOCELL
D - DIMMER
A# - OCCUPANCY SENSOR CIRCUIT (E.G. RMJ-B1)
T - TIMER/TIME CLOCK
$ - TOGGLE SWITCH

LIGHTING PLAN HEX NOTES

1. EC TO TIE EXHAUST FAN INTO SWITCH FOR LIGHT.
2. LIGHT TO BE CONTROLLED BY PHOTOCELL.
3. PROVIDE WEATHERPROOF SWITCH, OR INSTALL IN WEATHERPROOF BOX.
4. MOUNT FIXTURE TO TOP EDGE OF THE BOTTOM CHORD ON EVERY 4TH TRUSS. COORDINATE MOUNTING LOCATIONS IN THE FIELD.



2 POWER PLAN

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

POWER CIRCUIT DESIGNATIONS

A - #

- PANEL DESIGNATION
- CIRCUIT DESIGNATION

POWER PLAN HEX NOTES

1. GFCI SERVICE RECEPTACLE.
2. UNIT HEATERS PROVIDE WITH INTERNAL DISCONNECT.
3. NEMA 1 30A DISCONNECT FOR WH-1 LOCATED NEAR DEVICE.
4. WP-GFCI RECEPTACLE MOUNTED AT 24" AFF.
5. PROVIDE JUNCTION BOX FOR HAND DRYER. VERIFY LOCATION AND ELECTRICAL REQUIREMENTS PRIOR TO ROUGH-IN.
6. MUST BE GFCI BREAKER.

KILIAN
A Stratus Team Company
PO Box 3301, Henderson, NC 27536
www.kilianengineering.com | P| 252.436.8178
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NORTH CAROLINA PROFESSIONAL SEAL 17304 ENGINEER MICHAEL W. KILIAN
10/02/2025

KILIAN ENGINEERING, INC. CORPORATE SEAL NORTH CAROLINA

NEW CONSTRUCTION FOR:

COVE CREEK PICNIC SHELTER & RESTROOMS

SUGAR GROVE, NC

REVISION

7	6	5	4	3	2	1	NO.
							DESCRIPTION
							DATE

ISSUED: 10/02/2025

ISSUED FOR PERMITTING
DESCRIPTION

DRAWN BY: RSB
CHECKED BY: MWK/REW

SHEET:
LIGHTING & POWER PLAN

SHEET NO.
E-101

PROJECT NO: 250594

LIGHT FIXTURE SCHEDULE										
MARK	DESCRIPTION	LOUVER/LENS	LAMPS		VOLTAGE	INPUT WATTAGE	MOUNTING	REMARKS	MFG	MODEL
			TYPE	CCT						
A	LED STRIP LIGHT, WET LISTED	-	LED	4000K	120	36	SURFACE	2	COOPER	HVSL2 4 LD4 STD 40 UNV 0 EDC1 WL
B	LED STRIP LIGHT	-	LED	4000K	120	36	SURFACE	2	LITHONIA	CSS L48 4000LM MVOLT 40K 80CRI
EM	DUAL HEAD EMERGENCY FIXTURE	ACRYLIC	LED	N/A	-	2	VARIES	1	LITHONIA	ELM2L-SDRT
EXH	LED EXIT/EMERGENCY COMBO, WET LOCATION	ACRYLIC	LED	N/A	-	-	VARIES	1	EELP	XCR-CW

1. FIXTURE SHALL HAVE BATTERY BACKUP FOR 90 MINUTE ILLUMINATION.
2. OR EQUAL BY COOPER, MOBERN, OR CURRENT BY GE LIGHTING

LIGHTING DEVICE LEGEND		
SYMBOL	DESCRIPTION	REMARKS
$	SINGLE POLE WALL SWITCH	HEAVY DUTY, AC ONLY, COMMERCIAL GRADE GENERAL USE SNAP SWITCH COMPLYING WITH NEMA WD 6 AND WD 1. IVORY PLASTIC BODY WITH TOGGLE HANDLE. 120-277V, 20A. MEET FEDERAL SPECIFICATION W-S-896.
$M	WALL MOUNTED OCCUPANCY SENSOR	WATTSTOPPER DSW-301 LINE VOLTAGE OCCUPANCY SENSOR. ULTRA SONIC AND INFRARED.
$LV	LOW VOLTAGE SWITCH	WATTSTOPPER LVSW-101 LOW VOLTAGE MOMENTARY CONTROL SWITCH.
$3	3 WAY SWITCH	3-WAY TYPE SWITCH WITH SAME CHARACTERISTICS AS SINGLE POLE SWITCH ABOVE.
(DT)	CEILING OCCUPANCY SENSOR	WATTSTOPPER, UT-300-3 LOW VOLTAGE OCCUPANCY SENSOR. 360° ULTRA SONIC AND INFRARED.
(P)	POWER PACK	WATTSTOPPER, BZ-150 LOW VOLTAGE POWER PACK FOR CEILING PACK SENSORS.
(J)	JUNCTION BOX	GALVANIZED METAL BOX CONSTRUCTED IN ACCORDANCE WITH 314.40 OF THE NEC.
⊠	EXHAUST FAN	VENT FAN, 120V, CFM AS NOTED MC TO PROVIDE AND VENT, EC TO WIRE.

POWER DEVICE LEGEND		
SYMBOL	DESCRIPTION	REMARKS
	DUPLEX RECEPTACLE	NEMA 5-20R, HEAVY DUTY, COMMERCIAL GRADE, 125V, 20A COMPLYING WITH NEMA WD 6 AND WD 1. GFCI OR AFCI IF NOTED. 'WP' DENOTES WEATHERPROOF COVER. 'CH' DENOTES COUNTER HEIGHT. LISTED TAMPERPROOF IF NOTED. MEET FEDERAL SPECIFICATION W-C-596.
	FUSIBLE DISCONNECT SWITCH	HEAVY DUTY TYPE. TYPE 1 ENCLOSURE IN INTERIOR APPLICATIONS, TYPE 3R ENCLOSURE IN EXTERIOR APPLICATIONS, FUSE ACCORDING TO NAMEPLATE DATA.
	DISCONNECT SWITCH	HEAVY DUTY TYPE. TYPE 1 ENCLOSURE IN INTERIOR APPLICATIONS, TYPE 3R ENCLOSURE IN EXTERIOR APPLICATIONS.
(J)	JUNCTION BOX	GALVANIZED METAL BOX CONSTRUCTED IN ACCORDANCE WITH 314.40 OF THE NEC.

RESTROOM

ELECTRICAL DESIGNER'S STATEMENT		
ELECTRICAL SYSTEM AND EQUIPMENT METHOD OF COMPLIANCE PRESCRIPTIVE _X_ PERFORMANCE ___ ENERGY COST BUDGET ___		
LIGHTING SCHEDULE:		
LAMP TYPE REQUIRED IN FIXTURE:	SEE LIGHTING LEGEND	
NUMBER OF LAMPS PER FIXTURE:	SEE LIGHTING LEGEND	
BALLAST TYPE USED IN FIXTURE:	SEE LIGHTING LEGEND	
NUMBER OF BALLASTS IN FIXTURE:	SEE LIGHTING LEGEND	
TOTAL WATTAGE PER FIXTURE:	SEE LIGHTING LEGEND	
TOTAL INTERIOR WATTAGE SPECIFIED VS ALLOWED:	WATTS SPECIFIED	WATTS ALLOWED
	108.0	369.00

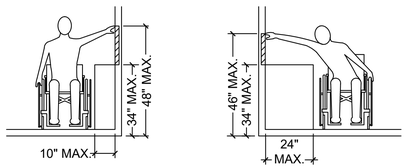
OCCUPANCY	AREA (sf)	ALLOWANCE (W/sf)	WATTAGE ALLOWED
RESTROOM	376.00	0.98	369
TOTAL	376		369.00

EQUIPMENT SCHEDULES WITH MOTORS (NOT USED FOR MECHANICAL SYSTEMS)
MOTOR HORSEPOWER: N/A
NUMBER OF PHASES: N/A
MINIMUM EFFICIENCY: N/A
MOTOR TYPE: N/A
NUMBER OF POLES: N/A

DESIGNER STATEMENT: TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE DESIGN OF THIS BUILDING COMPLIES WITH THE 2020 NORTH CAROLINA ENERGY CONSERVATION CODE.

FOR THE ADDITIONAL PRESCRIPTIVE REQUIREMENT REQUIRED BY C406 OF 2020 NORTH CAROLINA ENERGY CONSERVATION CODE, WE ARE CHOOSING C406.3 - REDUCED LIGHTING POWER DENSITY.

108 W SPECIFIED <= 332 W (369 W ALLOWED X 90%)



ANSI A117.1 FIG. 308.3.2 OBSTRUCTED HIGH REACH SIDE.

ALL SWITCHES AND CONTROLS MUST COMPLY FOR ALL COUNTERTOPS

NOTES FOR EMERGENCY FIXTURES

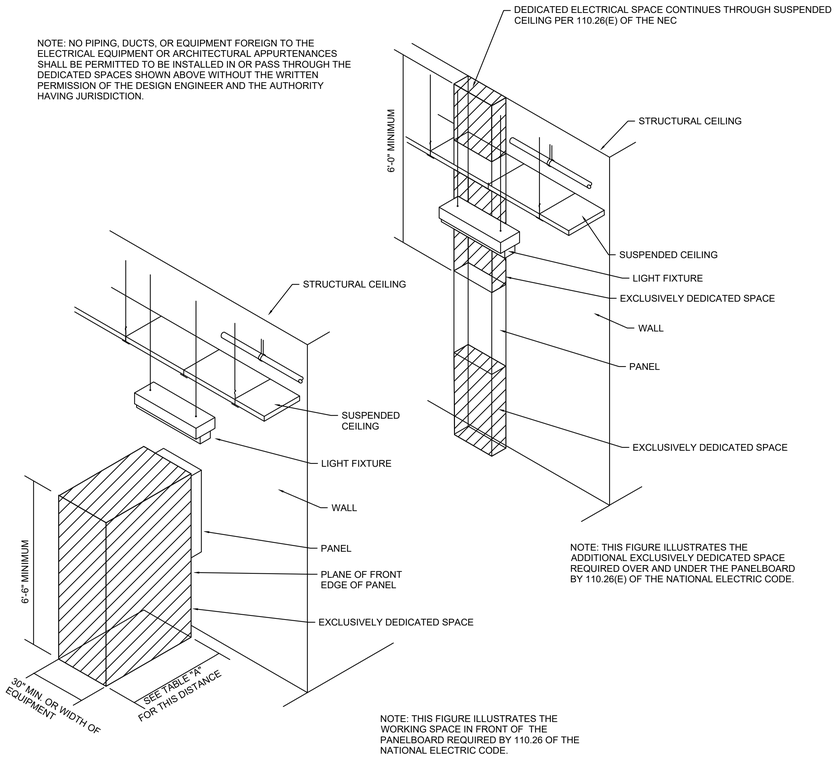
1. FOR INTERIOR FIXTURES WITH EMERGENCY BATTERIES, WIRE THE BATTERY CHARGER ON THE SAME CIRCUIT AS THE FIXTURE BALLAST AHEAD OF ALL SWITCHES, SENSORS, ETC.
2. FOR EXTERIOR FIXTURES WITH EMERGENCY BATTERIES, WIRE THE BATTERY CHARGER ON THE SAME CIRCUIT AS THE NORMAL EXTERIOR LIGHTS OR AS SHOWN ON PLANS AHEAD OF ALL CONTACTORS, PHOTOCELLS, ETC.
3. IN BOTH CASES, EMERGENCY POWER SHOULD INITIATE ONLY IN THE EVENT OF THE LOSS OF NORMAL POWER. ALL BATTERIES SHALL BE RATED TO POWER EMERGENCY ILLUMINATION FOR 90 MINUTES MINIMUM.

OCCUPANCY SENSORS SEQUENCE OF OPERATION WITH LOW-VOLTAGE MOMENTARY SWITCH

1. OCCUPANCY SENSOR DETECTS MOTION AND TURNS THE LIGHTS ON. SENSOR HOLDS LIGHTS ON AS LONG AS MOTION IS DETECTED. IF AFTER THE SET TIME DELAY, NO MOTION IS DETECTED, LIGHTS TURN OFF. CONSULT OWNER FOR DESIRED TIME DELAY SETTING.
2. THE LOAD CAN BE TURNED ON USING THE MANUAL SWITCH AND IT STAYS ON ACCORDING TO THE OCCUPANCY LOGIC SETTING. THE TIME DELAY OPERATES AS PROGRAMMED. WHEN THE LOAD TURNS OFF DUE TO LACK OF OCCUPANCY DETECTION, IT CAN BE TURNED ON AGAIN BY OCCUPANCY DETECTION OR THE SWITCH.
3. ACTIVATING THE MANUAL SWITCH WHILE THE LOAD IS ON TURNS THE LOAD OFF.
   - 3.1. WHEN THE LOAD IS TURNED OFF MANUALLY, AS LONG AS THE SENSOR CONTINUES TO DETECT OCCUPANCY THE LOAD STAYS OFF. FIVE MINUTES AFTER THE LAST OCCUPANCY DETECTION, THE LIGHTS STAY OFF AND THE SENSOR REVERTS TO THE AUTOMATIC-ON MODE.
   - 3.2. WHEN THE LOAD IS TURNED OFF MANUALLY, PRESSING THE SWITCH AGAIN TURNS THE LOAD ON AND THE SENSOR REVERTS TO THE AUTOMATIC-ON MODE.
   - 3.3. ONCE RETURNING TO AUTOMATIC-ON MODE, EITHER THE SWITCH OR OCCUPANCY DETECTION CAN TURN THE LOAD ON.
4. LOW-VOLTAGE INPUT SIGNAL FROM TIME CLOCK HOLDS LIGHTS ON DURING RETAIL HOURS REGARDLESS OF OCCUPANCY DETECTION.

1 SCHEDULES

NOTE: NO PIPING, DUCTS, OR EQUIPMENT FOREIGN TO THE ELECTRICAL EQUIPMENT OR ARCHITECTURAL APPURTENANCES SHALL BE PERMITTED TO BE INSTALLED IN OR PASS THROUGH THE DEDICATED SPACES SHOWN ABOVE WITHOUT THE WRITTEN PERMISSION OF THE DESIGN ENGINEER AND THE AUTHORITY HAVING JURISDICTION.



NOTE: THIS FIGURE ILLUSTRATES THE ADDITIONAL EXCLUSIVELY DEDICATED SPACE REQUIRED OVER AND UNDER THE PANELBOARD BY 110.26(E) OF THE NATIONAL ELECTRIC CODE.

NOTE: THIS FIGURE ILLUSTRATES THE WORKING SPACE IN FRONT OF THE PANELBOARD REQUIRED BY 110.26 OF THE NATIONAL ELECTRIC CODE.

NOTE: WHERE THE CONDITIONS ARE AS FOLLOWS: CONDITION 1 - EXPOSED LIVE PARTS ON ONE SIDE OF THE WORKING SPACE AND NO LIVE OR GROUNDED PARTS ON THE OTHER SIDE OF THE WORKING SPACE, OR EXPOSED LIVE PARTS ON BOTH SIDES OF THE WORKING SPACE THAT ARE EFFECTIVELY GUARDED BY INSULATING MATERIALS. CONDITION 2 - EXPOSED LIVE PARTS ON ONE SIDE OF THE WORKING SPACE AND GROUNDED PARTS ON THE OTHER SIDE OF THE WORKING SPACE. CONCRETE, BRICK, OR TILE WALLS SHALL BE CONDITION 3 - EXPOSED LIVE PARTS ON BOTH SIDES OF THE WORKING SPACE CONSIDERED AS GROUNDED

TABLE 110.26(A)(1) WORKING SPACE			
VOLTAGE TO GROUND, NOMINAL	MINIMUM CLEAR DISTANCE (FEET)		
	CONDITON 1	2	3
0-150	3	3	3
151-600	3	3-1/2	4
601-1000	3	4	5

2 PANEL CLEARANCES DETAIL
Scale: None

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A Stratus Team Company
PO Box 3301, Henderson, NC 27536
www.Kilianengineering.com | P| 252.438.8178
CORPORATE LICENSE C-2277

NORTH CAROLINA PROFESSIONAL SEAL 17304 ENGINEER MICHAEL W. KILIAN
10/02/2025
KILIAN ENGINEERING CORPORATE SEAL NORTH CAROLINA

NEW CONSTRUCTION FOR:
COVE CREEK PICNIC SHELTER & RESTROOMS
SUGAR GROVE, NC

REVISION

NO	DESCRIPTION	DATE
1		
2		
3		
4		
5		
6		
7		

ISSUED: 10/02/2025
ISSUED FOR PERMITTING
DESCRIPTION

DRAWN BY: RSB
CHECKED BY: MWK/REW

SHEET: ELECTRICAL SCHEDULES & DETAILS

SHEET NO. E-301

PROJECT NO: 250594

PANEL A								
CKT	LOAD	BKR	LOAD kVA	PH	LOAD kVA	BKR	LOAD	CKT
1	LIGHTING	20/1	0.00	A	0.36	20/1	RECEPTS. SHELTER	2
3	GFCI SERVICE RECEPT.	20/1	0.36	B	1.00	20/1	EWC	④
5	WATER HEATER	30/1	2.50	A	1.00	20/2	UH-1	6
7	UH-2	20/2	1.50	B	1.00			8
9			1.50	A	1.50	20/2	UH-3	10
11	HAND DRYER	20/1	1.30	B	1.50			12
13	HAND DRYER	20/1	1.30	A	0.00	20/1	SPARE	14
15	SPARE	20/1	0.00	B	0.00	20/1	SPARE	16
17	SPACE		0.00	A	0.00		SPACE	18
19	SPACE		0.00	B	0.00		SPACE	20
21	SPACE		0.00	A	0.00		SPACE	22
23	SPACE		0.00	B	0.00		SPACE	24
			kVA	PH	AMPS			
			8.2	A	68			
			6.7	B	56			

VOLTAGE/PHASE	120/240,1P,3W
BUS RATING	200A
MAIN CIRCUIT BREAKER RATING	MLO
AIC RATING	22K (EC TO VERIFY)
SERVICE ENTRANCE RATED	NO
ENCLOSURE	NEMA 1
MOUNTING	SURFACE

◯ = GFCI BREAKER

NEC ELECTRIC DEMAND SUMMARY 120/240V,1P,3W						
EQUIPMENT	DEMAND FACTOR	kVA A	kVA B	LOAD kVA	NEC REFERENCE	NOTES/CALCULATIONS
LIGHTING	100%	0.18	0.18	0.36	220.12	376 SF X .98 VA/SF
RECEPTACLES < 10 kVA	100%	1.66	2.66	4.32	220.44	INCLUDES HAND DRYER, & EWC
RECEPTACLES > 10 kVA	50%	0.00	0.00	0.00	220.44	
HVAC	100%	4.00	4.00	8.00	--	BASED ON KW
WATER HEATER	125%	2.50	0.00	2.50	422.13	STORAGE TANK <120 GAL @ 125%
DEMAND kVA PER PHASE		8.34	6.84			
DEMAND AMPS PER PHASE		69	57			

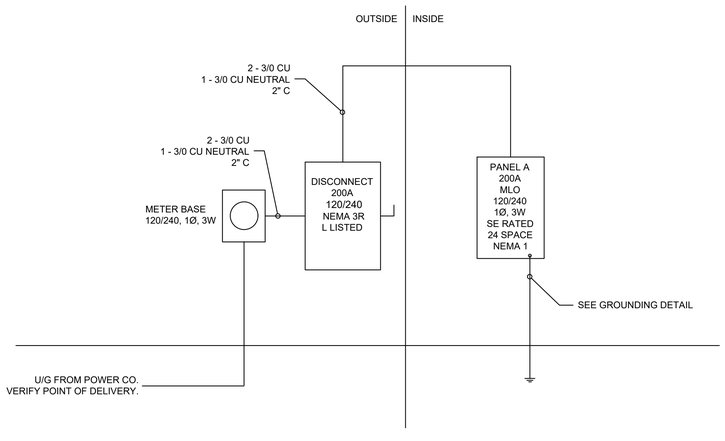
THE CALCULATED LIGHTING LOAD EXCEEDS THE CONNECTED LIGHTING LOAD.

BREAKER FEEDER SCHEDULE			
AMPS	WIRE SIZE	GROUND SIZE	CONDUIT SIZE
15A	#12	#12	1/2"
20A	#12	#12	1/2"
25A	#10	#10	3/4"
30A	#10	#10	3/4"
35A	#8	#10	1"
40A	#8	#10	1"
50A	#8	#10	1"
60A	#6	#10	1 1/4"
70A	#4	#8	1 1/4"
80A	#4	#8	1 1/4"
90A	#3	#8	1 1/2"
100A	#3	#8	1 1/2"
110A	#2	#6	2"
125A	#1	#6	2"
150A	1/0	#6	2 1/2"
175A	2/0	#6	2 1/2"
200A	3/0	#6	2 1/2"
225A	4/0	#4	2 1/2"
250A	250 MCM	#4	3"
300A	350 MCM	#4	3 1/2"
350A	500 MCM	#3	4"
400A	2 SETS- 3/0	#3	2 1/2"

1. CONDUCTOR PER POLE PLUS NEUTRAL PER SET. E.C. TO VERIFY NECESSITY OF NEUTRAL FOR EACH CIRCUIT. NEUTRAL MAY BE DELETED IF NOT REQUIRED FOR INDIVIDUAL PIECES.

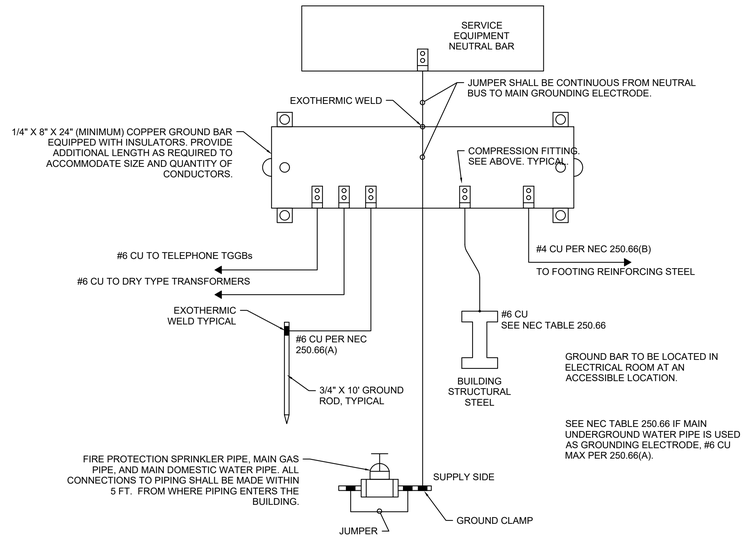
VOLTAGE DROP SCHEDULE
120V CIRCUITS < 8 AMPS (1.0 kVA) DISTANCE TO 1ST LOAD — AWG SIZE 0' - 120' — #12 121' - 190' — #10 191' - 300' — #8 301' - 470' — #6
120V CIRCUITS 9 TO 14 AMPS (1.0-1.7 kVA) DISTANCE TO 1ST LOAD — AWG SIZE 0' - 65' — #12 66' - 110' — #10 111' - 170' — #8 171' - 270' — #6
WIRE SIZES INDICATED IN BREAKER FEEDER SCHEDULE ARE MINIMUM WIRE SIZES. CONTRACTOR SHALL UPSIZE WIRES BASED ON LOAD AND LENGTH OF RUN AS INDICATED IN SCHEDULE ABOVE.

1 PANEL SCHEDULES



2 POWER RISER

Scale: NONE



3 GROUNDING DETAIL

Scale: None

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10/02/2025
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NEW CONSTRUCTION FOR:

COVE CREEK PICNIC SHELTER & RESTROOMS

SUGAR GROVE, NC

REVISION

NO	DATE	DESCRIPTION
1		
2		
3		
4		
5		
6		
7		

ISSUED: 10/02/2025

ISSUED FOR PERMITTING
DESCRIPTION

DRAWN BY: RSB
CHECKED BY: MWK/REW

SHEET:
ELECTRICAL PANEL SCHEDULES & RISER

SHEET NO.
E-302

PROJECT NO: 250594

MATERIAL IDENTIFICATION

MATERIAL	ELEVATION	SECTION
COMPACTED SUBGRADE		
NON-COMPACTED SUBGRADE		
STRUCTURAL FOAM		
RIGID INSULATION		
GROUT		
BRICK VENEER		
CONCRETE MASONRY UNIT		
CAST-IN-PLACE CONCRETE		
STRUCTURAL PRECAST CONCRETE		
STEEL		
CONTINUOUS WOOD MEMBER		
WOOD BLOCKING		

PLAN INDICATORS

THE FOLLOWING INDICATORS MAY BE USED THROUGHOUT THE STRUCTURAL PLANS

SSR#	SHEAR STUD REINFORCING MARK
DC#	DROP CAP
⊗	HOLDOWN ANCHOR LOCATIONS
(X)	WOOD SHEAR WALL MARK
BB#	MASONRY BOND BEAM
MTB#	MASONRY TIE BEAM
CB#	CONCRETE BEAM
CTB#	CONCRETE TIE BEAM
CC#	CONCRETE COLUMN MARK
TC#	CONCRETE TIE COLUMN MARK
MC#	MASONRY COLUMN MARK
(X)	CGS OF BANDED POST-TENSIONING STRANDS MEASURED FROM BOTTOM OF SLAB IN INCHES.
[X]	CGS OF DISTRIBUTED POST-TENSIONING STRANDS MEASURED FROM BOTTOM OF SLAB IN INCHES
CJ	INDICATES SLAB CONSTRUCTION JOINT
TSWF#	THICKENED SLAB WALL FOUNDATION
SF#	STEP FOUNDATION
TSE#	THICKENED SLAB EDGE
F#	ISOLATED SPREAD FOUNDATION
WF#	WALL FOUNDATION
TSF#	THICKENED SLAB FOUNDATION
RWF#	RETAINING WALL FOUNDATION
HF#	HOLDOWN FOUNDATION
CRW	CONCRETE RETAINING WALL
MRW	RETAINING MASONRY WALL

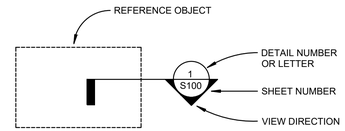
PLAN SYMBOLOGY

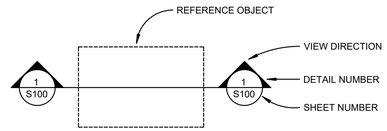
THE FOLLOWING INDICATORS MAY BE USED THROUGHOUT THE STRUCTURAL PLANS

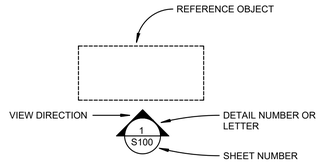
- WOOD OR CFS BEARING WALL
- WOOD OR CFS NON-BEARING WALL
- SHEAR WALL
- CMU WALL
- CONCRETE WALL
- CURB
- SLOPE DOWN
- SLOPE UP
- STEP DOWN
- STEP DOWN WITH SLOPE
- VALLEY

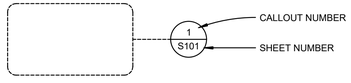
ELEVATION & SECTION CALLOUTS

THE FOLLOWING MAY BE USED THROUGHOUT STRUCTURAL DRAWINGS TO REFERENCE OTHER VIEWS.



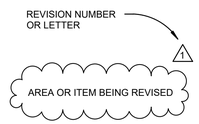




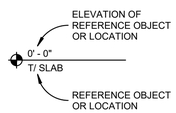


UNIVERSAL SYMBOLS

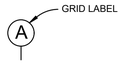
THE FOLLOWING MAY BE USED THROUGHOUT STRUCTURAL DRAWINGS.



REVISION CLOUD



ELEVATION DESIGNATION



GRID REFERENCE



WORK POINT



FLAT FACE BREAK

LINE BREAK



CURVED FACE BREAK

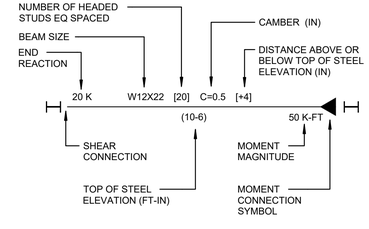
SYMBOLIC LINEWORK

THE FOLLOWING MAY BE USED THROUGHOUT STRUCTURAL DRAWINGS.

	CENTERLINE		FLUSH BEAM OR GIRDER
	MATCHLINE		TRUSS/JOIST
	GRID LINE		BEAM
	CONTROL JOINT		STEEL BEAM
	FOUNDATION LINE		STEEL JOIST
	MECHANICAL EQUIPMENT		DECK DIRECTION
	MECHANICAL DUCTWORK		PLUMBING LINES

FRAMING ANNOTATIONS

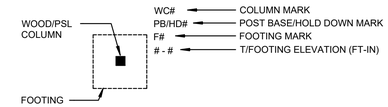
THE FOLLOWING MAY BE USED THROUGHOUT STRUCTURAL DRAWINGS.

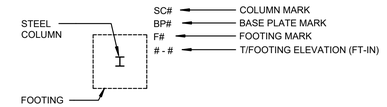


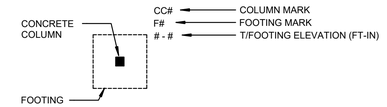
CB#	CONCRETE BEAM EXTENTS
MB#	MASONRY BEAM EXTENTS

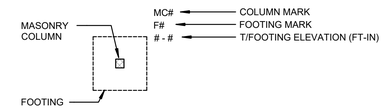
FOUNDATION ANNOTATIONS

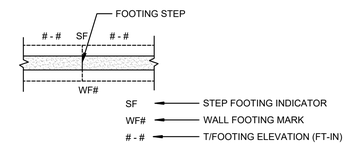
THE FOLLOWING ANNOTATIONS MAY BE USED THROUGHOUT STRUCTURAL DRAWINGS.









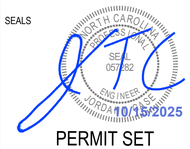


RMW#	MASONRY RETAINING WALL EXTENTS
RCW#	CONCRETE RETAINING WALL EXTENTS

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BREC
A Stratus Team Company
1605 CURTIS BRIDGE ROAD - SUITE 1
WILKESBORO, NC 28697
PHONE : 336.844.4088
www.brec.biz

SEALS



PERMIT SET

09/17/25

REVISIONS

SHEET SIZE:	24"x36"
PROJECT NUMBER:	JLC25.0117.00
DRAWN BY:	JJC, GJH
APPROVED BY:	JTC

SYMBOLS & LEGEND STRUCTURAL

S001

Joseph, Lawrence & Co
Consulting Engineers
1180 HARWOOD AVE. SUITE 3000
ALTAMONTE SPRINGS, FLORIDA 32714
TEL: 321.972.4466
WWW.JLCENG.COM
FL CA NO. 37088
JLC25.0117.00

GENERAL CONDITIONS

1. IF MATERIALS, QUANTITIES, STRENGTHS OR SIZES INDICATED BY THE DRAWINGS OR SPECIFICATIONS ARE NOT IN AGREEMENT WITH THESE NOTES, THE MOST STRINGENT SHALL BE PROVIDED.
2. STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH PROJECT SPECIFICATIONS. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
3. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE ERECTION PROCEDURE AND SEQUENCE TO ENSURE THE SAFETY OF THE BUILDING AND ITS COMPONENT PARTS DURING ERECTION. THIS INCLUDES, BUT IS NOT LIMITED TO, THE ADDITION OF WHATEVER TEMPORARY BRACING, GUYS OR TIE-DOWNS MAY BE NECESSARY. SUCH MATERIAL SHALL BE REMOVED AND SHALL REMAIN THE PROPERTY OF THE CONTRACTOR AFTER COMPLETION OF THE PROJECT.
4. ALL DIMENSIONS AND ELEVATIONS SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE VERIFIED BY THE CONTRACTOR TO CONFORM TO THOSE SHOWN ON THE ARCHITECTURAL DRAWINGS.
5. THE STRUCTURE IS DESIGNED TO BE SELF-SUPPORTING AND STABLE AFTER THE BUILDING IS COMPLETE. THE CONTRACTOR'S RESPONSIBILITY IS TO SUPPORT, BRACE AND SECURE EXISTING STRUCTURE AS REQUIRED. CONTRACTOR IS SOLELY RESPONSIBLE FOR THE SAFETY OF THE BUILDING DURING CONSTRUCTION.
6. VISITS TO THE SITE BY THE ENGINEER WILL BE FOR OBSERVATION AND SHALL NOT INCLUDE INSPECTIONS. THE PURPOSE OF THE ENGINEER'S VISITS WILL BE TO ASSIST IN QUALITY CONTROL AND HELP ACHIEVE CONFORMANCE WITH THE CONSTRUCTION DOCUMENTS. THE VISITS SHOULD NOT BE CONSTRUED AS SUPERVISION OF CONSTRUCTION.
7. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR HAVING VISITED THE SITE AND HAVING FAMILIARIZED HIMSELF WITH ALL EXISTING CONDITIONS. ANY QUESTIONS OR DISCREPANCIES FOUND WITH REGARD TO THE DRAWINGS SHALL BE BROUGHT TO THE ATTENTION OF THE DESIGNERS BEFORE SUBMITTING A PROPOSAL. FIELD MEASURE EXISTING CONDITIONS PRIOR TO FABRICATION OF MATERIALS.

DESIGN LOADS

1. THE FOLLOWING DESIGN LOADS ARE IN ACCORDANCE WITH THE 2024 NORTH CAROLINA BUILDING CODE AND PROVISIONS OF THE ASCE 7-22.
2. SUPERIMPOSED DEAD LOADS:
   - B. ROOF TRUSSES
     - BOTTOM CHORD 10 PSF
     - TOP CHORD (SHINGLES) 10 PSF
3. LIVE LOADS
   - ROOF AND AWNINGS 20 PSF
   - HANDRAILS AND GUARDS 50 PLF
     (ANY DIRECTION AND ANY POINT) 200 LB
   - INTERMEDIATE RAILS 50 LB
     (ANY DIRECTION AND ANY POINT)
   - GRAB BARS (ANY DIRECTION AND ANY POINT) 250 LB
5. WIND LOADS
   - ULTIMATE DESIGN WIND SPEED V_{ult}= 107 MPH
   - NOMINAL DESIGN WIND SPEED V_{asd}= 83 MPH
   - RISK CATEGORY II
   - WIND EXPOSURE C
   - ENCLOSURE CLASSIFICATION ENCLOSED
   - INTERNAL PRESSURE COEFFICIENT GC_{pi} = +/-0.18
   - SEE COMPONENTS AND CLADDING PRESSURES ON SHEET S004
6. RAIN LOADS
   - RAIN LOAD INTENSITY i = 3.2 IN/HR
   - DESIGN RAIN LOAD R = N/A (SLOPED ROOF)
7. SEISMIC LOADS
   - SEISMIC USE GROUP GROUP II
   - SEISMIC DESIGN CATEGORY B
   - SEISMIC SITE CLASS D
   - SHORT PERIOD SPECTRAL RESPONSE ACCELERATION S_S = 0.31
   - 1-SEC PERIOD SPECTRAL RESPONSE ACCELERATION S_1 = 0.089
   - SHORT PERIOD DESIGN SPECTRAL RESPONSE ACCELERATION S_{DS} = 0.24
   - 1-SEC PERIOD SPECTRAL RESPONSE ACCELERATION S_{D1} = 0.13
   - BASIC SEISMIC-FORCE RESISTING SYSTEM: *ORDINARY REINFORCED MASONRY SHEAR WALLS*
   - SEISMIC RESPONSE MODIFICATION FACTOR R = 2.0
   - ANALYSIS PROCEDURE: *EQUIVALENT LATERAL FORCE PROCEDURE*
   - SEISMIC RESPONSE COEFFICIENT C_S = 0.037
8. SNOW LOADS
   - GROUND SNOW LOAD P_g = 45.0 PSF
   - FLAT ROOF SNOW LOAD P_f = 35.3 PSF
   - EXPOSURE B
   - SNOW EXPOSURE FACTOR C_e = 1.0
   - SNOW LOAD IMPORTANCE FACTOR I = 1.0
   - THERMAL FACTOR C_t = 1.12
   - ROOF SLOPE FACTOR C_s = 1.0
   - SLOPED ROOF SNOW LOAD P_S = 35.3 PSF

SUBMITTAL & SHOP DRAWINGS

1. SUBMITTALS THAT DO NOT MEET THE REQUIREMENTS BELOW WILL BE RETURNED WITHOUT REVIEW.
2. FOUR COPIES OF SHOP DRAWINGS SHALL BE SUBMITTED. FOLLOW THE ARCHITECT'S INSTRUCTIONS FOR DISTRIBUTION.
3. THE GENERAL CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR THE FOLLOWING ITEMS
   - A. REINFORCING STEEL
   - B. PRE-ENGINEERED TRUSSES (*)

   * INDICATES THAT SHOP DRAWINGS MUST BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF THE PROJECT. ALL SHOP DRAWINGS SIGNED AND SEALED BY A PROFESSIONAL ENGINEER SHALL BE ACCOMPANIED BY A SET OF SIGNED AND SEALED CALCULATIONS, SEE THE REQUIREMENTS BELOW.
4. DETAILER SHALL BE RESPONSIBLE FOR CHECKING ALL ARCHITECTURAL, ELECTRICAL AND MECHANICAL DRAWINGS FOR OPENINGS AND EMBEDS, EFFECTING STRUCTURAL MEMBERS.
5. THE CONTRACT DOCUMENTS WILL GOVERN OVER THE SHOP DRAWINGS UNLESS OTHERWISE SPECIFIED IN WRITING BY THE ENGINEER OF RECORD.
6. CHANGES AND ADDITIONS MADE ON RESUBMITTALS SHALL BE CLEARLY INDICATED WITH A CLOUD AND NOTE. THE PURPOSE OF THE RESUBMITTAL SHALL CLEARLY BE NOTED ON THE TRANSMITTAL. THE REVIEW WILL BE LIMITED TO THOSE ITEMS CAUSING THE RESUBMITTAL.
7. SHOP DRAWINGS SHALL BEAR THE INITIALS OF THE DETAILER'S CHECKER AND BE APPROVED BY THE CONTRACTOR BEFORE SUBMITTAL TO ENGINEER. NON-CONFORMING SUBMITTALS WILL BE RETURNED WITHOUT REVIEW.
   - A. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY COMPLIANCE WITH THE CONTRACT DOCUMENTS AS TO QUANTITY, LENGTH, ELEVATIONS, DIMENSIONS, ETC.
   - B. REVIEW OF THE SHOP DRAWING DOES NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY FOR ERRORS AND OMISSIONS ASSOCIATED WITH THE PREPARATION OF SHOP DRAWINGS.
8. THE USE OF REPRODUCTIONS OF THESE CONTRACT DRAWINGS BY ANY CONTRACTOR, SUB-CONTRACTOR, ERECTOR, FABRICATOR, OF MATERIAL SUPPLIER IN LIEU OF PREPARATION OF SHOP DRAWINGS SIGNIFIES HIS ACCEPTANCE OF ALL INFORMATION SHOWN HEREON AS CORRECT, AND OBLIGATES HIMSELF TO ANY JOB EXPENSE, REAL OR IMPLIED, ARISING DUE TO ANY ERRORS THAT MAY OCCUR HEREON.
9. IF REPRODUCTIONS OF THESE CONTRACT DRAWINGS ARE USED IN LIEU OF PREPARATION OF SHOP DRAWINGS, THE ARCHITECT'S, ENGINEER'S, OR OTHER DESIGN CONSULTANT'S TITLE BLOCK SHALL BE REMOVED AND REPLACED WITH A TITLE BLOCK LISTING THE FOLLOWING ITEMS:
   - A. NAME, ADDRESS, AND TELEPHONE NUMBER OF CONTRACTOR, SUB-CONTRACTOR, ETC. SUBMITTING SHOP DRAWINGS.
   - B. SHEET NUMBER
   - C. DATE DRAWINGS PREPARED, INITIALS OF PERSON WHO PREPARED DRAWINGS, AND PERSON WHO CHECKED DRAWINGS.

   *ANY REPORDUCTION OF THESE CONTRACT DRAWINGS NOT COMPLYING WITH THE ABOVE WILL BE REJECTED WITHOUT REVIEW.
10. CALCULATION REQUIREMENTS:
    - A. CALCULATIONS AS REQUIRED BY DRAWINGS SHALL BE SUBMITTED WITH THE REQUIRED SHOP DRAWINGS AT THE SAME TIME AS THE SUBMITTAL.
    - B. ALL CALCULATIONS SUBMITTED SHALL BE PRESENTED IN A LEGIBLE MANNER AND FOLLOW AN ORDERLY, LOGICAL SEQUENCE.
    - C. ALL REFERENCES AND SOURCES OF INFORMATION SHALL BE LISTED WITHIN THE CALCULATIONS. COPIES OF PERTINENT SECTIONS SHALL BE INCLUDED.
    - D. BASIC LOADS AND DERIVATION OF FORCES, MOMENTS, SHEARS, REACTIONS, DEFLECTIONS, CAMBERS, ETC., SHALL BE INCLUDED. INCLUDE ALL UNBALANCED LOADING FORCES AS REQUIRED.
    - E. DESIGN ASSUMPTIONS SHALL BE CLEARLY STATED.
    - F. ALL COMPUTER GENERATED CALCULATIONS SHALL BE ACCOMPANIED WITH EXPLANATIONS OF OUTPUT/INPUT DATA (i.e. VARIABLE IDENTIFICATION, LOAD DERIVATION, ETC.). A BRIEF EXPLANATION OF GENERAL THEORY, METHOD AND ASSUMPTIONS USED SHALL BE INCLUDED.
    - G. ALL CALCULATIONS ARE TO BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF THE PROJECT.

SPECIAL INSPECTION AND TESTS

1. SPECIAL INSPECTIONS SHALL BE PROVIDED IN ACCORDANCE WITH SECTIONS 110 AND 1704 OF THE INTERNATIONAL BUILDING CODE BY A CERTIFIED SPECIAL INSPECTOR RETAINED BY THE BUILDING OWNER. THE ARCHITECT, STRUCTURAL ENGINEER, AND BUILDING DEPARTMENT SHALL BE FURNISHED WITH COPIES OF ALL INSPECTION AND TEST RESULTS.
2. THE SPECIAL INSPECTOR SHALL BE A QUALIFIED PERSON WHO SHALL DEMONSTRATE COMPETENCE TO THE SATISFACTION OF THE BUILDING OFFICIAL, FOR THE INSPECTION OF THE PARTICULAR TYPE OF CONSTRUCTION.
3. THE SPECIAL INSPECTOR SHALL KEEP RECORDS OF INSPECTIONS AND FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL AND THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE CONTRACTOR FOR CORRECTIONS, AND IF NOT CORRECTED, TO THE ATTENTION OF THE BUILDING OFFICIAL AND THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE PRIOR TO THE COMPLETION OF THAT PHASE OF WORK. A FINAL REPORT OF INSPECTION DOCUMENTING THE REQUIRED SPECIAL INSPECTIONS AND CORRECTION OF ANY DISCREPANCIES SHALL BE SUBMITTED PERIODICALLY AT A FREQUENCY AGREED UPON BY THE PERMIT APPLICANT AND THE BUILDING OFFICIAL PRIOR TO THE START OF THE WORK.
4. SPECIAL INSPECTIONS AND TESTING SHALL BE PERFORMED FOR THE FOLLOWING TYPES OF CONSTRUCTION:
   - STEEL CONSTRUCTION PER SECTION 1705.2
   - CONCRETE CONSTRUCTION PER TABLE 1705.3
   - MASONRY CONSTRUCTION PER SECTION 1705.4
   - WOOD CONSTRUCTION: PER SECTION 1705.5
     - a. PERIODIC INSPECTION OF FRAMING MEMBER SIZES, SPACING, SPECIES, AND LOCATIONS.
     - b. PERIODIC INSPECTION OF CONNECTIONS OF MEMBERS.
     - c. PERIODIC INSPECTION OF WALL SHEATHING ATTACHMENT TO STUDS.
   - SOIL CONDITIONS PER TABLE 1705.6
   - DRIVEN DEEP FOUNDATIONS PER TABLE 1705.7
   - CAST-IN-PLACE DEEP FOUNDATIONS PER TABLE 1705.8
   - HELICAL PILE FOUNDATIONS PER SECTION 1705.9
5. UNLESS OTHERWISE NOTED, THE FOLLOWING ELEMENTS COMPRISE THE WIND FORCE RESISTING SYSTEM AND ARE SUBJECT TO SPECIAL INSPECTION FOR WIND RESISTANCE IN ACCORDANCE WITH SECTION 1705.12 OF THE INTERNATIONAL BUILDING CODE:
   - A. STRUCTURAL WOOD SHEARWALL AND DIAPHRAGM SYSTEMS REQUIRE PERIODIC INSPECTION FOR NAILING, BOLTING, ANCHORING, AND OTHER FASTENING OF COMPONENTS WITHIN THE WIND FORCE RESISTING SYSTEM INCLUDING HOLDDOWNS.
   - B. COLD-FORMED STEEL LIGHT-FRAME CONSTRUCTION SHEAR WALL AND DIAPHRAGM SYSTEMS REQUIRE PERIODIC INSPECTIONS FOR SCREWING, BOLTING, ANCHORING, AND OTHER FASTENING COMPONENTS WITHIN THE SEISMIC FORCE RESISTING SYSTEM.
6. UNLESS OTHERWISE NOTED, THE FOLLOWING ELEMENTS COMPRISE THE SEISMIC FORCE RESISTING SYSTEM AND ARE SUBJECT TO SPECIAL INSPECTION FOR SEISMIC RESISTANCE IN ACCORDANCE WITH SECTION 1705.13 OF THE INTERNATIONAL BUILDING CODE:
   - A. STRUCTURAL STEEL IN ACCORDANCE WITH SECTION 1705.13.1, INCLUDING STRUTS COLLECTORS, CHORD, AND FOUNDATION ELEMENTS.
   - B. STRUCTURAL WOOD SHEARWALL AND DIAPHRAGM SYSTEMS REQUIRE PERIODIC INSPECTION FOR NAILING, BOLTING, ANCHORING, AND OTHER FASTENING OF COMPONENTS WITHIN THE WIND FORCE RESISTING SYSTEM INCLUDING HOLDDOWNS.
   - C. COLD-FORMED STEEL LIGHT-FRAME CONSTRUCTION SHEAR WALL AND DIAPHRAGM SYSTEMS REQUIRE PERIODIC INSPECTIONS FOR SCREWING, BOLTING, ANCHORING, AND OTHER FASTENING COMPONENTS WITHIN THE SEISMIC FORCE RESISTING SYSTEM.

FOUNDATIONS

1. FOUNDATION DESIGN SHALL BE BASED ON AN ALLOWABLE BEARING PRESSURE OF 1500 PSF IN ACCORDANCE WITH TABLE 1806.2 OF THE 2024 NORTH CAROLINA BUILDING CODE, PRESUMPTIVE LOAD BEARING VALUES, FOR CLAYS AND SILTS. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO ENSURE THAT THE SUBGRADE IS COMPACTED SUFFICIENTLY TO ACHIEVE THIS BEARING PRESSURE.
2. EARTHWORK SHALL BE PERFORMED UNDER THE SUPERVISION OF A LICENSED SOIL TESTING COMPANY TO ASSURE COMPLIANCE WITH REQUIREMENTS OF THE SOILS REPORT AND SPECIFICATIONS.
3. ALL FOOTINGS SHALL BE CENTERED UNDER THE COLUMNS OR WALL ABOVE UNLESS NOTED OTHERWISE.
4. IF REQUIRED, PROVIDE GRAVEL LAYER BELOW SLABS IN ACCORDANCE WITH THE GEOTECHNICAL REPORT FOR RADON GAS VENTING. REFER TO ARCHITECTURAL AND MECHANICAL DRAWINGS FOR ADDITIONAL DETAILS AND LOCATION OF VENT PIPES THROUGH SLABS.

REINFORCING STEEL

1. ALL REINFORCING SHALL BE ASTM A615, GRADE 60. BARS SHALL SECURELY TIE IN PLACE WITH #16 DOUBLE-ANNEALED IRON WIRE, BARS SHALL BE SUPPORTED ON ACCEPTABLE CHAIRS. REINFORCING STEEL SHALL BE DETAILED IN ACCORDANCE WITH THE ACI "MANUAL OF STANDARD PRACTICE FOR DETAILING OF REINFORCED CONCRETE STRUCTURES." CONTRACTOR SHALL COORDINATE REINFORCING STEEL PLACEMENT DETAILS AND PROVIDE TEMPLATES FOR PLACING STEEL IN CONGESTED AREAS AS NECESSARY. SHOP DRAWINGS (INCLUDING PLACING PLANS AND ELEVATIONS) SHALL BE SUBMITTED TO, AND REVIEWED BY, THE ARCHITECTS/ENGINEER BEFORE STARTING REINFORCINGATION.
2. WELDED WIRE REINFORCING SHALL BE ELECTRICALLY WELDED AND CONFORM TO ASTM A185 (FLAT SHEET), YIELD STRENGTH 65,000 PSI. AN 8" MINIMUM LAP SHALL BE PROVIDE FOR SIDE AND END LAP. WELDED WIRE REINFORCING SHALL SUPPORTED IN APPROVED CHAIRS. REFER TO NOTE #6 UNDER SLAB ON GRADE CONSTRUCTION FOR FIBROUS REINFORCING OPTION.
3. NO REINFORCING BARS SHALL BE SPLICED BY WELDING. AT THE CONTRACTOR'S OPTION, MECHANICAL BUTT SPLICING USING AN EXOTHERMIC WELDING PROCESS AND HIGH STRENGTH SLEEVES OR MECHANICAL CONNECTION SPLICING MAY BE USED, PROVIDED THAT THE MECHANICAL SPLICES SHALL BE ICBO APPROVED TO ACHIEVE A MINIMUM TENSILE STRENGTH OF 125 PERCENT OF THE SPECIFIED YIELD STRENGTH OF THE BAR. THE MINIMUM TENSILE STRENGTH REQUIREMENT SHALL BE INCREASED TO 160 PERCENT FOR MECHANICAL SPLICES AT THE INTERFACE OF DIAPHRAGMS AND THE LATERAL SYSTEM, AND FOR MECHANICAL SPLICES WITHIN ELEMENTS OF THE LATERAL SYSTEM. SPLICES DEVICES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL. REINFORCING BARS SHALL BE LAP SPLICED FOR TENSION UNLESS NOTED OTHERWISE ON THE DRAWINGS. #14 AND #18 BARS SHALL NOT BE LAP SPLICED.
4. WELDING OR TACK WELDING OF REINFORCING BARS TO OTHER BARS OR TOE PLATES, ANGLES ETC, IS PROHIBITED, EXCEPT WHERE SPECIFICALLY APPROVED BY THE ENGINEER. WHERE WELDING IS APPROVED, IT SHALL BE DONE BY AWS CERTIFIED WELDERS USING E9018 OR APPROVED ELECTRODES. WELDING PROCEDURES SHALL CONFORM TO THE REQUIREMENTS OF AWS D1.4.
5. MINIMUM CAST-IN-PLACE CONCRETE COVER OVER REINFORCING STEEL, UNLESS NOTED OTHERWISE, SHALL BE AS FOLLOWS:
   - A. CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH: • 3 INCHES.
   - B. CONCRETE EXPOSED TO EARTH OR WEATHER:
     1-1/2 INCHES FOR #5 BARS OR SMALLER
     2 INCHES FOR #6 BARS OR LARGER.
   - C. OTHER CONCRETE:
     - a. WALLS - INTERIOR FACE:
       1-1/2 INCHES FOR #14 AND #18 BARS
       3/4 INCH FOR #11 BARS AND SMALLER
     - b. SLABS:
       #11 BARS AND SMALLER - 3/4 INCH
     - c. BEAMS AND COLUMNS - TIES, STIRRUPS AND SPIRALS:
       1-1/2 INCHES
6. PROVIDE CONTINUOUS REINFORCEMENT WHEREVER POSSIBLE. SPLICE ONLY AS SHOWN OR APPROVED. STAGGER SPLICES WHERE POSSIBLE. USE TENSION SPLICE CLASS "B" UNLESS NOTED OTHERWISE. DOWELS SHALL MATCH SIZE AND SPACING OF THE SPECIFIED REINFORCEMENT AND SHALL BE LAPPED WITH TENSION SPLICES. UNLESS NOTED OTHERWISE LAP LENGTHS EXPRESSED IN NUMBER OF BAR DIAMETERS SHALL BE AS FOLLOWS:

BAR SIZE	NORMAL WEIGHT CONCRETE F'c (PSI)				
	CLASS	3,000	4,000	5,000	6,000
#6 OR SMALLER	A	44 DIA	38 DIA	34 DIA	31 DIA
	B	57 DIA	49 DIA	44 DIA	40 DIA
#7 OR LARGER	A	55 DIA	47 DIA	42 DIA	39 DIA
	B	71 DIA	62 DIA	55 DIA	50 DIA

LAP SPLICE LENGTH NOTES:
- TABLE IS BASED ON a) CLEAR SPACING OF BARS BEING DEVELOPED OR SPLICED NOT LESS THAN ONE BAR DIAMETER (BD), CLEAR COVER NOT LESS THAN ONE DB, AND STIRRUPS OR TIES THROUGHOUT THE LAP SPLICE LENGTH NOT LESS THAN THE CODE MINIMUM, OR b) CLEAR SPACING OF BARS BEING DEVELOPED OR SPLICED NOT LESS THAN 2 DB AND CLEAR COVER NOT LESS THAN ONE DB. FOR ALL OTHER CASES, MULTIPLY TENSION LAP BY 1.5.
- FOR TENSION REINFORCEMENT WITH MORE THAN 12" OF CONCRETE BELOW, OR FOR VERTICAL REINFORCEMENT, MULTIPLY THE LAP SPLICE LENGTH INDICATED IN THE TABLE BY 1.3. HOWEVER, THE LAP SPLICE LENGTH SHALL NOT BE LESS THAN 12".
- FOR TENSION REINFORCEMENT IN LIGHTWEIGHT CONCRETE, MULTIPLY LAP SPLICED LENGTH BY 1.3.

CAST-IN-PLACE CONCRETE

1. ALL CONCRETE SHALL BE NORMAL WEIGHT AND HAVE THE FOLLOWING MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS:

PLACEMENT	MINIMUM STRENGTH	MAX WATER/CEMENT RATIO
FOOTINGS / SLAB ON GRADE:	3500 PSI	0.58
REMAINING CONCRETE:	4000 PSI	0.54

2. ALL CONCRETE SHALL HAVE A SLUMP OF 4" PLUS OR MINUS 1".
3. FOR COLD WEATHER CONCRETE SUBJECT TO FREEZE-THAW CYCLES: PROVIDE 4% AIR ENTRAINMENT.
4. CONCRETE MIX DESIGN SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF ACI 301 CHAPTER 3, METHOD 1 OR METHOD 2. SUBMIT BACKUP DATA AS REQUIRED BY CHAPTER 5 SECTION 5.3. OF THE LATEST EDITION OF ACI 318.
5. ALL REINFORCING STEEL SHALL BE NEW DOMESTIC DEFORMED BILLET STEEL CONFORMING TO ASTM A-615 GRADE 60.
6. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH "THE BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" ACI 318 LATEST EDITION, AND "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS," ACI 301, LATEST EDITION.
7. ALL REINFORCING DETAILS SHALL CONFORM TO "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES" ACI 315 LATEST EDITION, UNLESS DETAILED OTHERWISE ON THE STRUCTURAL DRAWINGS.
8. CONTRACTOR SHALL REVIEW ARCHITECTURAL, ELECTRICAL AND MECHANICAL DRAWINGS FOR SIZE AND LOCATION OF EMBEDDED ITEMS, SLEEVES, SLAB DEPRESSIONS, OPENINGS, ANCHOR BOLTS, SLOPES, ETC. REQUIRED BY OTHER TRADES. THESE ITEMS SHALL BE FURNISHED AND INSTALLED PRIOR TO PLACEMENT OF CONCRETE.
9. WHERE BAR LENGTHS ARE GIVEN ON THE DRAWINGS, THE LENGTH OF ANY HOOK, IF REQUIRED, IS NOT INCLUDED. HOOKS SHALL BE PROVIDED AT DISCONTINUOUS ENDS OF ALL TOP BARS OF BEAMS AND AT SLAB EDGES.
10. CONTRACTOR SHALL PROVIDE SPACERS, CHAIRS, BOLSTERS, ETC. NECESSARY TO SUPPORT REINFORCING STEEL. SUPPORT ITEMS WHICH BEAR ON EXPOSED CONCRETE SURFACES SHALL HAVE ENDS WHICH ARE PLASTIC TIPPED OR STAINLESS STEEL.
11. CONTRACTOR SHALL PROVIDE 3/4 INCH CHAMFER ON ALL EXPOSED CORNERS OF COLUMNS, BEAMS, AND WALLS UNLESS OTHERWISE INDICATED ON THE ARCHITECTURAL DRAWINGS.
12. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCEMENT:
    3" AT CONCRETE PERMANENTLY EXPOSED TO EARTH.
    1-1/2" AT ALL OTHER CONCRETE.
13. HORIZONTAL WALL AND FOOTING BARS SHALL BE BENT 1'-0" AROUND CORNERS OR CORNER BARS WITH 2'-0" LAP SHALL BE PROVIDED.
14. HORIZONTAL KEYWAYS IN CONSTRUCTION JOINTS SHALL BE PROVIDED IN BEAMS, SUPPORTED SLABS, AND WALL FOOTINGS WITH A DEPTH OF 1-1/2" AND HEIGHT EQUAL TO ONE-THIRD OF THE MEMBER'S DEPTH. REINFORCEMENT SHALL BE CONTINUOUS THROUGH CONSTRUCTION JOINTS UNLESS OTHERWISE NOTED ON THE DRAWINGS. CONSTRUCTION JOINTS MAY BE USED ONLY AT LOCATIONS SHOWN ON THE DRAWINGS OR AT OTHER LOCATIONS APPROVED BY THE ARCHITECT.
15. CONTRACTOR SHALL KEEP A COPY OF "FIELD REFERENCE MANUAL" (ACI PUBLICATION SP-15, LATEST EDITION) AT THE PROJECT FIELD OFFICE.
16. MINIMUM LAP LENGTHS ON ALL REINFORCING BAR SPLICES SHALL BE 48 BAR DIAMETERS: FOR BEAMS AND ELEVATED SLABS, LAP BOTTOM STEEL AT THE SUPPORT AND TOP STEEL OVER THE MIDSPAN, UNLESS OTHERWISE NOTED.
17. TESTING LABORATORY SHALL SUBMIT ONE COPY OF ALL CONCRETE TEST REPORTS DIRECTLY TO THE ENGINEER.

CONCRETE SLAB ON GRADE

1. SPECIFICATION: UNLESS NOTED OTHERWISE, SLAB ON GRADE CONSTRUCTION SHALL FOLLOW THE RECOMMENDATIONS OF "THE GUIDE FOR CONCRETE FLOOR AND SLAB CONSTRUCTION ACI 302.1R-04".
2. SUBGRADE PREPARATION: A. AREAS CONTAINING SLAB ON GRADE CONSTRUCTION SHALL BE STRIPPED TO SUFFICIENT DEPTH TO REMOVED ALL VEGETATION, TOP SOIL, ORGANIC AND OTHER UNSUITABLE MATERIALS.
3. REINFORCING STEEL:
   - A. SEE THE DRAWINGS FOR TYPICAL SLAB REINFORCEMENT REQUIREMENTS.
   - B. LAP CONTINUOUS SLAB ON GRADE REINFORCING STEEL 30 BAR DIAMETERS AT SPLICES BUT NOT LESS THAN 12".
   - C. ALL REINFORCING STEEL FOR SLABS ON GRADE SHALL BE CHAIRED WITH SLAB BOLSTERS DESIGNED FOR SUPPORT ON SOIL TO PROVIDED SPECIFIED COVER TO REINFORCING STEEL.
4. SEE DETAILS ON THE DRAWINGS FOR REQUIREMENTS OF CONSTRUCTION JOINTS, CONTROL JOINTS AND POUR SIZE AND SEQUENCE OF SLAB ON GRADE CONSTRUCTION.
5. OPENINGS ON SLAB ON GRADE: UNLESS DETAILED OTHERWISE ON THE DRAWINGS, PROVIDE (1) #5 x OPENING WIDTH +3'-0" AROUND ALL PENETRATION THROUGH SLAB ON GRADE ON GRADE 10" WIDE OR GREATER AND (1) #5 x 3'-0" DIAGONAL CORNERS BARS. SUCH REINFORCEMENT SHALL BE PROVIDED WHETHER OPENING IS SHOWN ON DRAWINGS OR NOT.
6. FIBROUS REINFORCING (OPTION): FIBROUS REINFORCING SHALL BE 100 PERCENT VIRGIN POLYPROPYLENE, FIBRILLATED FIBERS CONTAINING NO REPROCESS EDOLEFIN MATERIALS AND SPECIFICALLY MANUFACTURED TO AN OPTIMUM GRADATION FOR USE AS CONCRETE SECONDARY REINFORCEMENT. VOLUME PER CUBIC YARD SHALL EQUAL A MINIMUM OF 0.1% (1.5 LBS).
7. SLAB ON GRADE SHALL BE PLACED OVER A CONTINUOUS 10 MIL VAPOR BARRIER.

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BREC
A Stratus Team Company
1605 CURTIS BRIDGE ROAD - SUITE 1
WILKESBORO, NC 28697
PHONE : 336.844.4088
www.brec.biz

SEALS

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 057662 ENGINEER JOSEPH LAWRENCE JORDAN

10/15/2025

PERMIT SET

09/17/25

REVISIONS

SHEET SIZE: 24"x36"
PROJECT NUMBER: JLC25.0117.00
DRAWN BY: JJC, GJH
APPROVED BY: JTC

GENERAL NOTES STRUCTURAL

S002

Joseph, Lawrence & Co
Consulting Engineers
1180 HARWOOD AVE. SUITE 3000
ALTAMONTE SPRINGS, FLORIDA 32714
TEL: 321.972.4466
WWW.JLCENG.COM
FL CA NO. 37088
JLC25.0117.00

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MASONRY CONSTRUCTION

1. CONSTRUCTION SHALL MEET THE REQUIREMENTS OF ACI 530/ASCE 5, "BUILDING CODE REQUIREMENTS FOR CONCRETE MASONRY" AND ACI 530.1/ASCE6, "SPECIFICATIONS FOR THE DESIGN AND CONSTRUCTION OF LOAD BEARING CONCRETE MASONRY. ALL HOLLOW LOAD BEARING CONCRETE MASONRY UNITS SHALL CONFORM TO ASTM C90, MEDIUM WEIGHT, TYPE 1. ALL UNITS SHALL BE LAID IN RUNNING BOND USING TYPE S MORTAR WITH HEAD JOINTS. MASONRY MINIMUM STRENGTH F'M = 1500 PSI. MINIMUM BLOCK COMPRESSIVE STRENGTH IS 1900 PSI.

2. USE TYPE S MORTAR IN ACCORDANCE WITH ASTM C270 EXCEPT TYPE M MORTAR BELOW GRADE. HEAD AND BED JOINTS SHALL BE 3/8" FOR THE THICKNESS OF THE FACE SHELL. WEBS ARE TO BE FULLY MORTARED IN ALL COURSES OF PIERS, COLUMNS AND PILASTERS. IN STARTING COURSE, AND WHERE AN ADJACENT CELL IS TO BE GROUTED. REMOVE MORTAR PROTRUSIONS EXTENDING 1/2" OR MORE INTO THE CELL TO BE GROUTED.

3. USE STANDARD (9 GAUGE) HORIZONTAL JOINT REINFORCING CONFORMING TO ASTM A-82 IN EVERY OTHER COURSE. OVERLAP DISCONTINUOUS END 6". USE PREFABRICATED CORNER AND TEES. USE LADDER TYPE JOINT REINFORCING.

4. ALL CELLS CONTAINING REINFORCEMENT SHALL BE FILLED SOLID WITH CONCRETE GROUT CONFORMING TO ASTM C-476, GROUT MIXED SHALL CONTAIN PORTLAND CEMENT ONLY PLUS AGGREGATE. MAXIMUM SIZE OF AGGREGATE SHALL BE 3/8 INCH. SLUMP SHALL BE 8 TO 11 INCHES. WATER REDUCING ADMIXTURES MAY BE USED. GROUT SHALL BE VIBRATED WHILE PLACING TO ENSURE THAT CELLS ARE COMPLETELY FILLED. MINIMUM GROUT COMPRESSIVE STRENGTH BASED ON 28 DAY TEST SHALL BE 3000 PSI USING 3 1/2"X3 1/2"X7" OR 3"X3"X6" TEST SPECIMENS CAST IN MOIST WITH A FIST NON-ABSORBENT BASE AND MASONRY UNITS HAVING THE SAME MOISTURE CONDITIONS AT THOSE BEING LAID FORMING THE SIDE OF THE SPECIMENS. SPECIMEN SHALL BE TESTED ACCORDING TO ASTM C39.

5. VERTICAL BARS SHALL BE HELD IN POSITION AT THE TOP AND THE BOTTOM AND INTERVAL NOT EXCEEDING 8'-0". WHEN A FOUNDATION DOWEL DOES NOT LINE UP WITH CORRESPONDING VERTICAL BAR, IT SHALL NO BE SLOPED MORE THAN ONE HORIZONTAL IN SIX VERTICAL.

6. THE MINIMUM SPLICE LENGTH FOR ALL VERTICAL BARS SHALL BE:
   - 31 INCHES FOR #5 BARS
   - 56 INCHES FOR #6 BARS
   - 75 INCHES FOR #7 BARS

7. PROVIDE DOVETAIL ANCHORS AT 16" C/C, UNLESS NOTED OTHERWISE, WHERE MASONRY WALLS ABUT CONCRETE SURFACES.

WOOD CONSTRUCTION

1. WOOD CONSTRUCTION SHALL CONFORM TO THE NDS "NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION", LATEST EDITION.

2. LUMBER SHALL HAVE THE FOLLOWING MINIMUM PROPERTIES (UNO):

SPECIES	F_b(PSI)	F_{vw}(PSI)	F_c(PSI)	$F_{c\perp}$(PSI)	E(KSI)	E_{min}(KSI)
SYP No. 2-2x4	1100	1450	565	175	1400	510
SYP No. 2-2x6	1000	1400	565	175	1400	510
SYP No. 2-2x8	925	1350	565	175	1400	510
SYP No. 2-2x10	800	1300	565	175	1400	510
SYP No. 2-2x12	750	1250	565	175	1400	510
SPF No. 2	875	1150	425	135	1400	510
LVL BEAM	3100	3000	750	290	2000	1100
LVL COLUMN	2650	3000	750	285	1800	900
PSL BEAM	2900	2900	750	290	2000	1017
PSL COLUMN	2400	2500	425	190	1800	915
GLULAM BEAM	3000	2400	805	300	2100	1110
GLULAM COLUMN (4 PLY OR MORE)	2100	2300	650	300	1900	951
GLULAM COLUMN (2 OR 3 PLY)	2100	1700	650	300	1900	951

3. ALL WOOD IN CONTACT WITH CONCRETE OR EXPOSED TO WEATHER SHALL BE PRESSURE TREATED.

4. ROOF SHEATHING SHALL BE 15/32" PLYWOOD OR OSB, NAILED WITH 0.131"X2-1/2" RING SHANK NAILS AT 6" O.C. AT SUPPORTED EDGES, AND 0.131"X2-1/2" RING SHANK NAILS AT 12" O.C. AT INTERMEDIATE SUPPORTS. PROVIDE ONE PLYWOOD CLIP PER SPAN BETWEEN SHEET EDGES. PROVIDE SOLID 2x BLOCKING BETWEEN SUPPORTS AT ALL HIPS, RIDGES, ALLEYS, AND CHANGES IN ROOF SLOPE.

5. ALL LUMBER SHALL BE STAMPED WITH THE GRADE MARK OF AN APPROVED GRADING AGENCY.

6. PARALLEL STRAND LUMBER (PSL) MEMBER SIZES SHOWN ARE NET; OTHER MEMBER SIZES ARE NOMINAL.

7. NAILING SCHEDULE:

CONNECTION	COMMON NAIL	NUMBER OR SPACING
SOLE PLATE TO TRUSS OR BLOCKING	0.148"x3"	12" OC
STUD TO SOLE PLATE, TOE NAIL	0.131"x2-1/2"	4
DOUBLE STUDS, FACE NAIL	0.148"x3"	24" OC
DOUBLE TOP PLATES, FACE NAIL	0.148"x3"	16" OC
TOP PLATES LAPS AND INTERSECTIONS	0.148"x3"	3
TRUSSES, LAPS AND INTERSECTIONS	0.148"x3"	6
BUILT-UP CORNER STUDS	0.148"x3"	16" OC
STUDS TO SOLE PLATE, END WALL	0.148"x3"	4
TRUSSES TO TOP PLATE, TOE NAIL	0.131"x2-1/2"	3
LADDER TRUSS TO TOP PLATE	0.131"x2-1/2"	6" OC

8. WHERE WOOD BEAMS/HEADERS ABUT WOOD COLUMNS, PROVIDE SIMPSON "HUC" CONNECTORS WITH ALL NAILS SPECIFIED BY THE MANUFACTURER.

9. FASTENERS IN CONTACT WITH PRESERVATIVE-TREATED WOOD, INCLUDING NUTS AND WASHERS, SHALL BE HOT-DIP GALVANIZED PER ASTM 153. ALL CONNECTORS IN CONTACT WITH PRESSURE TREATED WOOD SHALL BE HOT-DIP GALVANIZED PER ASTM 653 AND MADE FROM CLASS G185 SHEER WITH 1.85 OUNCES (MINIMUM) OF ZINC COATING PER SQUARE FEET. FASTENERS AND CONNECTORS IN CONTACT WITH PRESERVATIVE-TREATED LUMBER WITH A USE CATEGORY OF UC4 SHALL BE STAINLESS STEEL. FASTENERS AND ANCHORS SHALL COMPLY WITH TYPE 304 OR 305. CONNECTORS SHALL COMPLY WITH TYPE 316L.

PREFABRICATED WOOD TRUSSES

1. ALL PREFABRICATED WOOD TRUSSES SHALL BE SECURELY FASTENED AT EACH END TO THEIR SUPPORTING WALLS OR BEAMS.

2. PREFABRICATED WOOD TRUSSES SHALL BE DESIGNED IN ACCORDANCE WITH THE LAST EDITION OF THE "NATIONAL DESIGN SPECIFICATION FOR STRESS-GRADE LUMBER AND ITS FASTENERS" AS RECOMMENDED BY THE NATIONAL FOREST PRODUCTS ASSOCIATION.

3. TRUSS MEMBERS AND CONNECTIONS SHALL BE DESIGNED (WITH A MAXIMUM ALLOWABLE STRESS INCREASE FOR LOAD DURATION OF 25% FOR ROOF TRUSSES ONLY) TO WITHSTAND THE LIVE LOADS GIVEN IN THE NOTES AND TOTAL DEAD LOAD.

4. TRUSS MANUFACTURER SHALL SUBMIT SHOP DRAWINGS AND DESIGN NOTES WITH A LICENSED ENGINEER'S SEAL FOR APPROVAL BY THE ARCHITECT. DESIGN NOTES TO INCLUDE THE RATED LOAD CAPACITY OF THE CONNECTORS USED TO SECURE THE MEMBERS, CERTIFICATION OF THE CONNECTOR CAPACITIES AND MANUFACTURER'S LICENSE TO FABRICATE TRUSSES UTILIZING THE CONNECTOR SYSTEM PROPOSED.

5. THE CONTRACTOR SHALL APPROVE FABRICATION AND INSTALLATION DRAWINGS SHOWING SIZE, SHAPE AND LAYOUT PRIOR TO SUBMITTAL FOR REVIEW BY THE ARCHITECT AND ENGINEER BEFORE FABRICATION HAS BEGUN.

6. BRIDGING FOR PRE-ENGINEERED TRUSSES SHALL BE AS REQUIRED BY TRUSS MANUFACTURER, AND THE LOCAL BUILDING CODE, UNLESS NOTED ON PLANS. ALSO WHERE HEEL HEIGHT ON BOTTOM CHORD BEARING TRUSSES EXCEEDS 11" PROVIDE CONTINUOUS LET IN 2x4'S.

ABBREVIATIONS

ABBREV	ABBREVIATION
ACI	AMERICAN CONCRETE INSTITUTE
ADD	ADDITIVE
ADDL	ADDITIONAL
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
AISI	AMERICAN IRON AND STEEL INSTITUTE
ALT	ALTERNATE / ALTERNATIVE
ALUM	ALUMINUM
AR	ANCHOR ROD
ARCH	ARCHITECTURE / ARCHITECTURAL
ASD	ALLOWABLE STRESS DESIGN
ASPH	ASPHALT
ASTM	AMERICAN SOCIETY OF TESTING MATERIALS
AWS	AMERICAN WELDING SOCIETY
B/	BOTTOM OF
BIT	BITUMINOUS / BITUMASTIC
BLDG	BUILDING
BLK	BLOCK
BM	BEAM
BMM	BENCH MARK
BOT	BOTTOM
BP	BASE PLATE
BRG	BEARING
BTWN	BETWEEN
BU	BUILT UP
C	CHANNEL
CB	CONCRETE BEAM
CC	CONCRETE COLUMN
CF	CUBIC FEET (FOOT)
CFS	COLD FORMED STEEL
CI	CAST-IRON
CIP	CAST IN PLACE
CJ	CONSTRUCTION / CONTRACTION JOINT
CL	CENTERLINE
CLR	CLEAR / CLEARANCE
CM	CONCRETE MASONRY
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
COM	COMMENT
CONC	CONCRETE
CONN	CONNECTION
CONST	CONSTRUCTION
CONT	CONTINUOUS
COORD	COORDINATE
CS	CAST-STEEL
CTR	CENTER
CTRD	CENTERED
CVR	COVER
CY	CUBIC YARD
DBA	DEFORMED BAR ANCHOR
DEG	DEGREE
DEMO	DEMOLITION
DEPT	DEPARTMENT
DIA	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DIST	DISTANCE
DN	DOWN
DR	DRAIN
DTL	DETAIL
DWG	DRAWING(S)
EA	EACH
EE	EACH END
EF	EACH FACE
EJ	EXPANSION JOINT
EL	ELEVATION
ELEC	ELECTRIC / ELECTRICAL
ELEV	ELEVATOR
ENGR	ENGINEER
EOS	EDGE OF SLAB
EQ	EQUAL
EQUIP	EQUIPMENT
ES	EACH SIDE
EW	EACH WAY
EXIST	EXISTING
EXP	EXPANSION
EXT	EXTERIOR
FD	FLOOR DRAIN
FDN	FOUNDATION
FIN	FINISH
FLR	FLOOR
FMG	FRAMING
FP	FULL PENETRATION WELD
FS	FAR SIDE
FT	FOOT / FEET
FTG	FOOTING
GA	GAGE / GAUGE
GALV	GALVANIZED
GB	GRADE BEAM
GC	GENERAL CONTRACTOR
GEN	GENERAL
GL	GRID LINE
GRTG	GRATING
GS	GALVANIZED STEEL
HCP	HOLLOW CORE PLANK
HDG	HOT DIP GALVANIZED
HK	HOOK
HORIZ	HORIZONTAL
HSA	HEADED STUD ANCHOR
HSB	HIGH STRENGTH BOLT
HSS	HOLLOW STRUCTURAL STEEL
HT	HEIGHT
ID	INSIDE DIAMETER
IF	INSIDE FACE
IN	INCH
INFO	INFORMATION
INT	INTERIOR
INV	INVERT
JST	JOIST
JT	JOINT
K	KIP (1000 LB)
KO	KNOCK OUT
KWY	KEYWAY
L	ANGLE
LB	POUND
LDG	LANDING
LDT	LONG DIAMETER TAPCON
LG	LONG
LGTH	LENGTH
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL LOC LOCATION
LRFD	LOAD RESISTANCE FACTOR DESIGN
LSH	LONG SIDE HORIZONTAL
LSV	LONG SIDE VERTICAL
LT WT	LIGHT WEIGHT
MATL	MATERIAL
MAX	MAXIMUM
MB	MASONRY BEAM / MACHINE BOLT
MECH	MECHANICAL
MEP	MECHANICAL/ELECTRICAL/PLUMBING
MFG	MANUFACTURING
MFR	MANUFACTURE / MANUFACTURER
MID	MIDDLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MO	MASONRY OPENING
MPH	MILES PER HOUR
MTL	METAL
NIC	NOT IN CONTRACT
NO	NUMBER
NS	NEAR SIDE
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OF	OUTSIDE FACE
OPNG	OPENING
OPP	OPPOSITE PAR PARALLEL
PC	PRECAST CONCRETE
PCF	POUNDS PER CUBIC FEET
PEN	PENETRATION
PERP	PERPINDICULAR
PJF	PREMOLDED BITUMINOUS JOINT FILLER
PL	PLATE
PLF	POUNDS PER LINEAR FOOT
PLY	PLYWOOD PREFAB PREFABRICATED
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	PRESSURE TREATED
QTY	QUANTITY
R	RADIUS
RCP	REINFORCED CONCRETE PIPE
RD	ROOF DRAIN
REF	REFERENCE
REINF	REINFORCE(MENT)
REQD	REQUIRED
RW	RETAINING WALL
SCHED	SCHEDULE
SDS	SELF DRILLING SCREWS
SIM	SIMILAR
SF	SQUARE FOOT
SFTG	STEP FOOTING
SJ	SAWCUT CONTRACTION JOINT
SJI	STEEL JOIST INSTITUTE
SOG	SLAB ON GRADE
SPC	SPACE / SPACES
SPCG	SPACING SPECS SPECIFICATION(S)
SQ	SQUARE
SS	STAINLESS STEEL
SSLT	SHORT SLOTTED TRANSVERSE
SSMA	STEEL STUD MANUFACTURER'S ASSOCIATION
STD	STANDARD
STIFF	STIFFENER
STL	STEEL
STRUCT	STRUCTURE / STRUCTURAL
SYM	SYMMETRICAL
T/	TOP OF
T&B	TOP AND BOTTOM
TB	TIE BEAM
TDS	TURNED DOWN SLAB
TEMP	TEMPERATURE
TENS	TENSION
THD	THREAD / THREADED
THK	THICK
THRU	THROUGH
TOL	TOLERANCE
TYP	TYPICAL
TSWF	THICKENED SLAB WALL FOOTINGS
UNO	UNLESS NOTED OTHERWISE
VERT	VERTICAL
VOL	VOLUME
W	WIDE FLANGE
W/	WITH
WD	WOOD
WF	WALL FOOTING
WFE	WALL FOOTING EXTENSION
WH	WEEP HOLE
W/O	WITHOUT
WP	WORK POINT
WS	WATER STOP
WT	STRUCTURAL TEE SECTION
WWR	WELDED WIRE REINFORCING
@	AT
#	NUMBER OR POUND
±	PLUS OR MINUS
Ø	DIAMETER
&	AND
S_p	SECTION MODULUS
I_p	MOMENT OF INERTIA
℄	CENTERLINE

BREC
A Stratus Team Company
1605 CURTIS BRIDGE ROAD - SUITE 1
WILKESBORO, NC 28697
PHONE : 336.844.4088
www.brec.biz

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REVISIONS

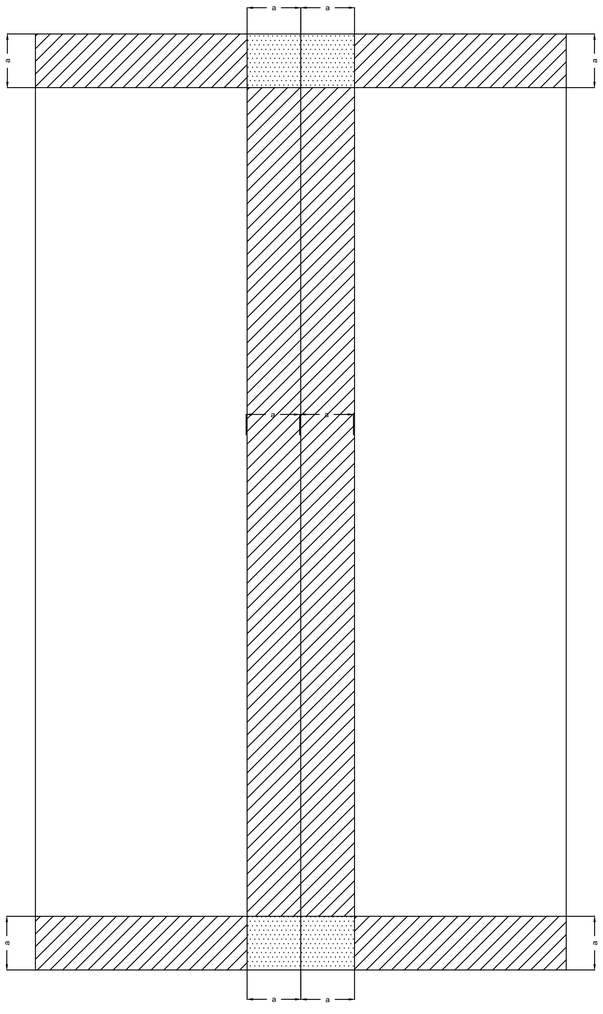
SHEET SIZE: 24"x36"
PROJECT NUMBER: JLC25.0117.00
DRAWN BY: JJC, GJH
APPROVED BY: JTC

GENERAL NOTES (CONT) STRUCTURAL

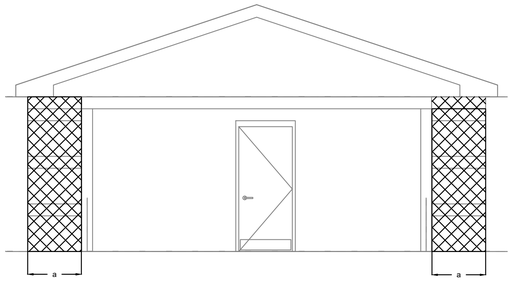
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Joseph, Lawrence & Co
Consulting Engineers
1180 HARWOOD AVE. SUITE 3000
ALTAMONTE SPRINGS, FLORIDA 32714
TEL: 321.972.4466
WWW.JLCENG.COM
FL CA NO. 37088
JLC25.0117.00

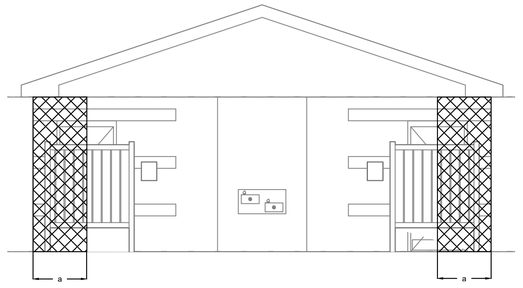
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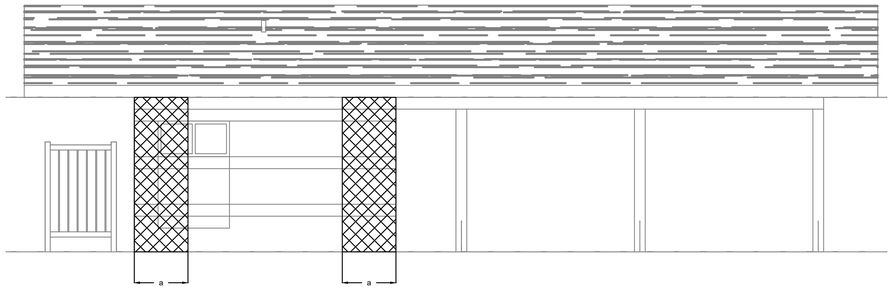
1 ROOF - COMPONENTS AND CLADDING



2 NORTH ELEVATION - COMPONENTS AND CLADDING



3 SOUTH ELEVATION - COMPONENTS AND CLADDING



4 EAST AND WEST ELEVATIONS - COMPONENTS AND CLADDING

COMPONENTS AND CLADDING LEGEND			
	ZONE 1 (UNSHADED)		ZONE 2
	ZONE 3		ZONE 4 (UNSHADED)
	ZONE 5		

COMPONENTS & CLADDING WIND PRESSURE SCHEDULE HIP

AREA (sq. ft.)	ZONE 1		ZONE 2		ZONE 3		ZONE 4		ZONE 5	
	+ (PSF)	- (PSF)	+ (PSF)	- (PSF)	+ (PSF)	- (PSF)	+ (PSF)	- (PSF)	+ (PSF)	- (PSF)
10	10.0	-17.0	10.0	-22.1	10.0	-13.8	10.1	-11.0	10.1	-13.5
20	10.0	-15.0	10.0	-19.9	10.0	-21.4	10.0	-10.5	10.0	-12.6
50	10.0	-12.4	10.0	-17.0	10.0	-18.3	10.0	-10.0	10.0	-11.4
100	10.0	-10.4	10.0	-14.9	10.0	-15.9	10.0	-10.0	10.0	-10.5
200	10.0	-10.0	10.0	-12.7	10.0	-13.5	10.0	-10.0	10.0	10.0

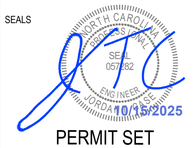
NOTES:

1. WIND PRESSURES ARE UNFACTORED (SERVICE LOAD) VALUES. TO OBTAIN ULTIMATE DESIGN PRESSURES FOR ASCE7-22 WIND LOAD COMBINATIONS, MULTIPLY THE PRESSURES SHOWN BY A FACTOR OF 1.67

Joseph, Lawrence & Co
Consulting Engineers
1180 HARWOOD AVE. SUITE 3000
ALTAMONTE SPRINGS, FLORIDA 32714
TEL: 321.972.4466
WWW.JLCENG.COM
FL CA NO. 37088
JLC25.0117.00

BREC
A Stratus Team Company
1605 CURTIS BRIDGE ROAD - SUITE 1
WILKESBORO, NC 28697
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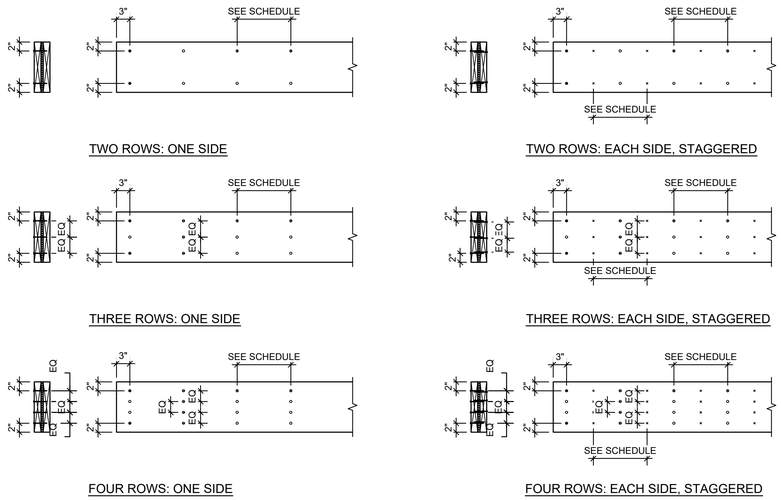
COMPONENTS AND CLADDING STRUCTURAL

S004

HEADER/BEAM SCHEDULE

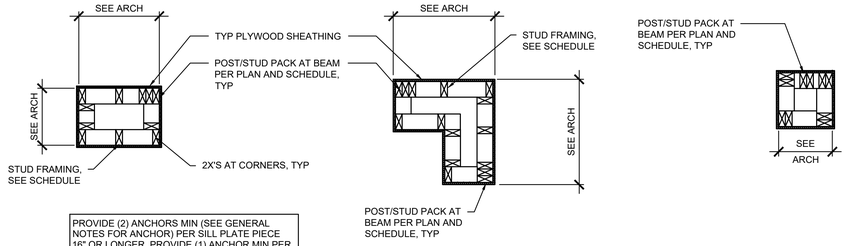
MARK	HEADER SIZE	FLITCH PLATE	NO. OF FLITCH PLATE PLIES	ASSEMBLY PATTERN
H2-08	(2) 2x8	1/2" PLY	3	A,B
H2-10	(2) 2x10	1/2" PLY	3	A,B
H2-12	(2) 2x12	1/2" PLY	3	A,B
H3-08	(3) 2x8	1/2" PLY	3	F,G
H3-10	(3) 2x10	1/2" PLY	3	F,G
H3-12	(3) 2x12	1/2" PLY	3	F,G
H4-08	3-1/2"x7-1/4" PSL 5	-		A,B
H4-10	3-1/2"x9-1/4" PSL 5	-	-	A,B
H4-12	3-1/2"x11-7/8" PSL 5	-	-	A,B
H4-14	3-1/2"x14" PSL 5	-	-	C,D
H4-16	3-1/2"x16" PSL 5	-	-	C,D
H4-18	3-1/2"x18" PSL 5	-	-	C,D
H4-20	(2) 1-3/4"x20" LVL	-	-	E
H6-08	5-1/4"x7-1/4" PSL 5	-	-	F,G
H6-10	5-1/4"x9-1/4" PSL 5	-	-	F,G
H6-12	5-1/4"x11-7/8" PSL 5	-	-	F,G
H6-14	5-1/4"x14" PSL 5	-	-	H,I
H6-16	5-1/4"x16" PSL 5	-	-	H,I
H6-18	5-1/4"x18" PSL 5	-	-	H,I
H6-20	(3) 1-3/4"x20" LVL	-	-	J
H8-08	7"x7-1/4" PSL 5	-	-	K,L
H8-10	7"x9-1/4" PSL 5	-	-	K,L
H8-12	7"x11-7/8" PSL 5	-	-	K,L
H8-14	7"x14" PSL 5	-	-	K,L
H8-16	7"x16" PSL 5	-	-	K,L
H8-18	7"x18" PSL 5	-	-	K,L
H8-20	(4) 1-3/4"x20" LVL	-	-	M

NOTE:
1. PROVIDE WOOD HEADERS OVER ALL OPENING. IF NO HEADER IS SPECIFIED, PROVIDE H2-10 AT ALL EXTERIOR WALLS AND PROVIDE H2-12 AT ALL INTERIOR LOAD BEARING WALLS.
2. FLITCH PLATES SHALL BE PROVIDED BETWEEN HEADER PLIES.
3. H#(F): INDICATES FLUSH BEAM WITH BOTTOM OF BEAM AT TRUSS BEARING ELEVATION, UNLESS NOTED OTHERWISE.
4. SEE SECTION **1/SXX** FOR ASSEMBLY PATTERN.
5. PSL: INDICATED PARALLEL STRAND LUMBER, SEE GENERAL NOTES FOR MINIMUM DESIGN VALUES. LVL OR GLULAM BEAMS OF THE SAME SIZE OR GREATER MAY BE USED LIN LIEU OF PSL BEAMS. SEE GENERAL NOTES FOR MINIMUM DESIGN VALUES OF BOTH MATERIALS.
6. SEE BUILDING AND UNIT PLANS FOR HEADER COLUMN SUPPORTS.
7. PROVIDE SQUASH BLOCKS IN FLOOR CAVITY TO MATCH COLUMN SUPPORTS.
8. ASSEMBLY PATTERN FOR ENGINEER WOOD LUMBER APPLIES ONLY IF THE BEAM HAS MULTIPLE PLIES.



1 WOOD TYP MULTIPLY BEAM ASSEMBLY

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



PROVIDE (2) ANCHORS MIN (SEE GENERAL NOTES FOR ANCHOR) PER SILL PLATE PIECE 16" OR LONGER. PROVIDE (1) ANCHOR MIN PER SILL PLATE PIECE LESS THAN 16".

2 TYP WOOD BOX COLUMNS

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

MULTI-PLY BEAM ASSEMBLY PATTERN

PATTERN MARK	NO. OF PLIES	SIDE LOADED 3					TOP LOADED			
		ROWS	FASTENER SIZE	SPACING	PLACEMENT	MAX UNIFORM LOAD 4,5	ROWS	NAILS SIZE	SPACING	PLACEMENT
A	2	3	0.131X3" NAIL	6" OC	ONE SIDE	1200 PLF	3	0.131X3" NAIL	12" OC	ONE SIDE
B	2	3	0.131X3" NAIL	8" OC	ONE SIDE	1200 PLF	2	0.148X3-1/4" NAIL	12" OC	ONE SIDE
C	2	3	SDS25312 SCREWS	20" OC	EACH SIDE, STAGGERED	1200 PLF	4	0.131X3" NAIL	12" OC	ONE SIDE
D	2	4	SDS25312 SCREWS	20" OC	ONE SIDE	1200 PLF	3	0.148X3-1/4" NAIL	12" OC	ONE SIDE
E	2	3	SDS25312 SCREWS	16" OC	ONE SIDE	2400 PLF	4	0.131X3" NAIL	12" OC	ONE SIDE
F	3	3	SDS25312 SCREWS	16" OC	EACH SIDE, STAGGERED	1200 PLF	3	0.131X3" NAIL	12" OC	ONE SIDE
G	3	3	SDS25312 SCREWS	12" OC	ONE SIDE	1200 PLF	2	0.148X3-1/4" NAIL	12" OC	EACH SIDE, STAGGERED
H	3	3	SDS25312 SCREWS	16" OC	EACH SIDE, STAGGERED	1200 PLF	4	0.131X3" NAIL	12" OC	EACH SIDE, STAGGERED
I	3	3	SDS25312 SCREWS	12" OC	ONE SIDE	1200 PLF	3	0.148X3-1/4" NAIL	12" OC	EACH SIDE, STAGGERED
J	3	4	SDS25312 SCREWS	8" OC	ONE SIDE	2400 PLF	4	0.131X3" NAIL	12" OC	EACH SIDE, STAGGERED
K 6	3	3	SDS25312 SCREWS	16" OC	EACH SIDE, STAGGERED	1200 PLF	2	SDS25600 SCREWS	24" OC	EACH SIDE, STAGGERED
L 6	3	3	SDS25312 SCREWS	12" OC	ONE SIDE	1200 PLF	2	SDW22634 SCREW	24" OC	ONE SIDE
M 6	3	4	SDS25312 SCREWS	8" OC	ONE SIDE	2400 PLF	3	SDW22634 SCREW	24" OC	ONE SIDE

NOTES:
1. SEE CORRESPONDING FASTENING DIAGRAMS.
2. ALL FASTENERS ARE AS MANUFACTURED BY THE SIMPSON STRONG-TIE COMPANY, INC (OR APPROVED EQUAL) AND INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
3. ALL FLUSH BEAMS ARE CONSIDERED TO SIDE LOADED UNLESS NOTED OTHERWISE OR NO TRUSSES./JOISTS/RAFTERS ARE HUNG INTO THE SIDE OF THE BEAM. THE ENGINEER SHALL BE NOTIFIED IF THERE IS A QUESTION IF THE BEAM IS SIDE LOADED OR TOP LOADED.
4. LOADS PROVIDED ARE UNFACTORED (SERVICE LOAD) VALUES.
5. LOADS ARE DUE TO TRUSSES/JOISTS/RAFTER HUNG INTO THE SIDE OF THE BEAM.
6. ASSEMBLY PATTERN MAY BE USED FOR 7" BEAM MADE OF (2)3-1/2" PLIES.

FOOTING SCHEDULE

MARK	SIZE WIDTHxLENGTH	SIZE DEPTH	REINFORCING		REMARKS
			BOTTOM	TOP	
F3.0	1'-0"xCONT.	1'-2"	(2) #5 CONT, #5 AT 12" OC		
TSE1.0	1'-0"xCONT.	2'-0"	(2) #5 CONT, #5 AT 12" OC		
WF2.0	2'-0"xCONT.	1'-0"	(3) #5 CONT, #5 AT 12" OC		

FOOTING NOTE:

EXCAVATIONS UNDER FOOTINGS TO INSTALL PIPING AND CONDUIT RUNS ARE PROHIBITED. ANY PIPE THAT PASSES UNDER A FOOTING OR THOUGH A FOUNDATION WALL SHALL HAVE A PIPE SLEEVE. THE SLEEVE SHALL BE TWO PIPE SIZES GREATER THAN THE PIPE PASSING THROUGH THE WALL. UNDERMINING OF FOOTINGS WOULD REQUIRED THE CONTRACTOR TO RETAIN A LICENSED STRUCTURAL ENGINEER IN THE STATE OF FLORIDA WHO SHALL INVESTIGATE THE CONDITIONS AND DESIGN TEMPORARY SHORING AS REQUIRED BY THE FLORIDA BUILDING CODE.

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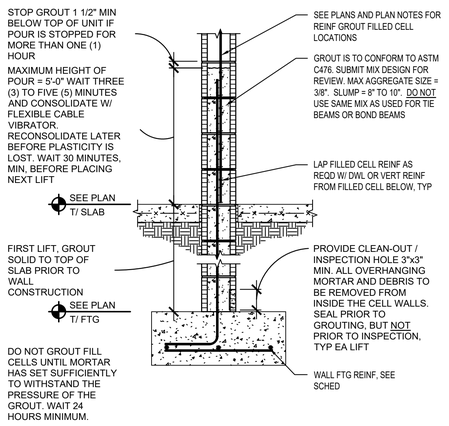
SHEET SIZE: 24"x36"
PROJECT NUMBER: JLC25.0117.00
DRAWN BY: JJC, GJH
APPROVED BY: JTC

HEADER, BEAM, AND FOOTING SCHEDULES

S005

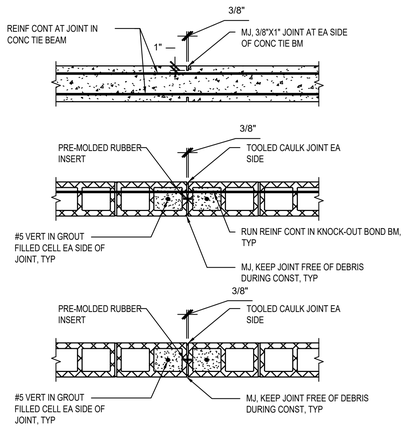
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Consulting Engineers
1180 HARWOOD AVE. SUITE 3000
ALTAMONTE SPRINGS, FLORIDA 32714
TEL: 321.972.4466
WWW.JLCENG.COM
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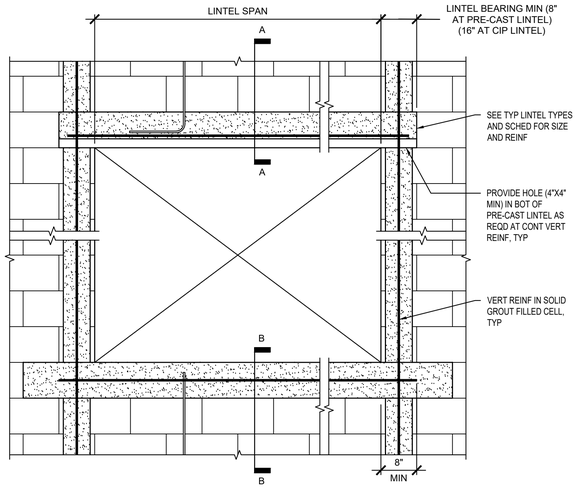
1 TYPICAL HIGH LIFT FILLED CELL GROUTING DIAGRAM

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



2 TYP MASONRY JOINTS DETAIL

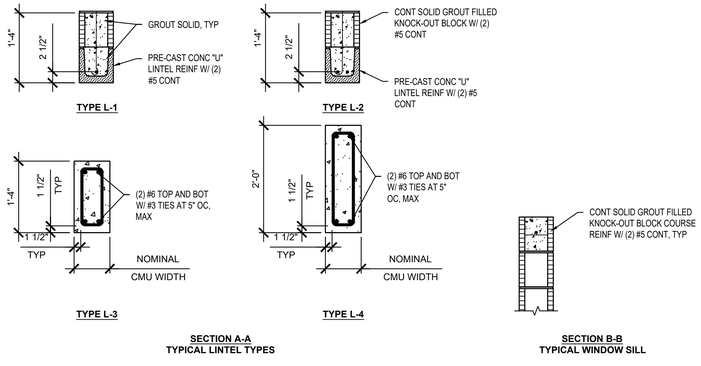
SCALE: 3/4" = 1'-0"



LINTEL SCHEDULE

TYPE	MAXIMUM SPAN	REMARK
L-1	6'-0"	
L-2	10'-0"	
L-3	16'-0"	CIP CONCRETE
L-4	20'-0"	CIP CONCRETE

LINTEL NOTES:
1. FOR 8" AND 12" CMU WALLS.
2. PRE-CAST LINTELS SHALL BE CAPABLE OF SUPPORTING 500 PER LINEAL FOOT IN ADDITION TO THEIR OWN WEIGHT.
3. PROVIDE CAST-IN-PLACE LINTEL FOR OPENING GREATER THAN 10'-0".
4. PROVIDE CAST-IN-PLACE LINTEL WHERE LINTEL SUPPORT IS A CAST-IN-PLACE COLUMN.

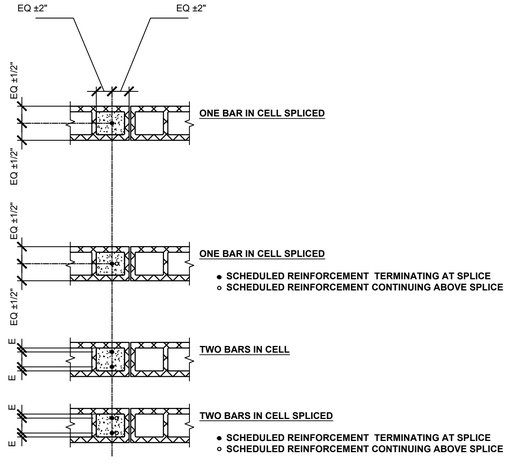


SECTION A-A
TYPICAL LINTEL TYPES

SECTION B-B
TYPICAL WINDOW SILL

3 TYP MASONRY OPENING DETAIL W/LINTELS

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



E = CLEARANCE
= 1/2" MIN, 1" MAX

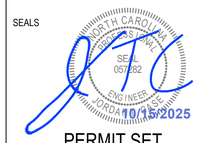
NOTES:
1. PROVIDE GALVANIZED REINFORCING POSITIONS TO MAINTAIN THE INDICATED POSITIONS AND CLEARANCES.
2. SPLICED REINFORCING MUST BE IN CONTACT WITH EACH OTHER
3. NOTIFY THE ENGINEER OF RECORD OF ANY DEVIATIONS FROM THE INDICATED POSITIONS AND/OR TOLERANCES.

4 TYP MASONRY SPLICE DETAILS

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

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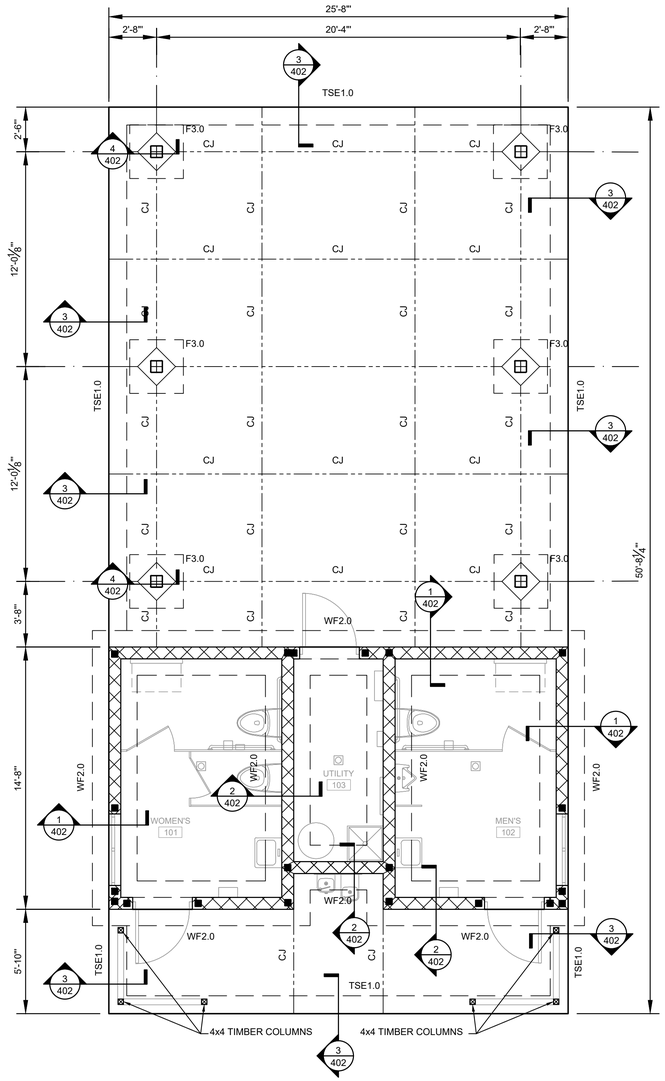
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Consulting Engineers
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ALTAMONTE SPRINGS, FLORIDA 32714
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WWW.JLCENG.COM
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TYPICAL MASONRY DETAILS

S006

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1 S101 PAVILION FLOOR PLAN - STRUCTURAL
SCALE: 1/4" = 1'-0"

FOUNDATION PLAN NOTES

1. SEE SHEETS S002-S003 FOR GENERAL STRUCTURAL NOTES.
2. DO NOT SCALE DRAWINGS . SEE ARCHITECTURAL DRAWINGS FOR ADDITIONAL DIMENSIONS NOT SHOWN. VERIFY ALL DIMENSIONS W/ ARCHITECTURAL DRAWINGS PRIOR TO START OF CONSTRUCTION. IF A DISCREPANCY SHOULD OCCUR, CONTACT THE ARCHITECT IN WRITING FOR CLARIFICATION BEFORE PROCEEDING.
3. TYPICAL SLAB ON GRADE CONSTRUCTION:
   4" (MIN.) THICK CONCRETE SLAB REINF. W/ 6x6-W2.9xW2.9 W.W.F. (OR #4 AT 16"O.C. MAX. EACH WAY) OVER CONT. VAPOR BARRIER (SEE ARCH. DWGS.) ON COMPACTED SUBGRADE. COORDINATE ALL SLAB ELEVATIONS, DEPRESSIONS, AND SLOPES W/ ARCH. DWGS. (FOR ACTUAL TOP OF SLAB ELEVATIONS, SEE ARCH. AND/OR CIVIL DWGS).
4. THE SLAB AREA BETWEEN CONTROL JOINTS SHALL NOT EXCEED 150 SQ. FEET MAX.
5. REFER TO MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS FOR UNDERGROUND UTILITES AND SLAB PENETRATIONS.
6. SEE ARCHITECTURAL DRAWINGS FOR CONSTRUCTION INFORMATION OF INTERIOR NON-LOAD BEARING WALLS NOT SHOWN.
7. TYPICAL STAIR / LANDING CONSTRUCTION:
   SEE ARCHITECTURAL DRAWINGS FOR INFORMATION AND GEOMETRY. COORDINATE SUPPORT LOCATIONS AND ATTACHMENT W/ MANUFACTURER / SUPPLIERS APPROVED SHOP DRAWINGS.
8. PROVIDE CORNER BARS WHERE ALL THICKENED SLAB WALL FOOTINGS CHANGE DIRECTION, AND AT ALL THICKENED SLAB WALL FOOTING INTERSECTIONS. SEE SECTION 1/S401 FOR ADDITIONAL INFORMATION.
9. PROVIDE ADDITIONAL RE-ENTRANT CORNER BARS: (2) - #4x5'-0"LG. SPACED AT 3"O.C. (VERTICALLY) PLACED WITHIN MID-DEPTH OF CONCRETE SLAB THICKNESS AND 2" CLEAR (HORIZONTALLY) FROM RE-ENTRANT CORNERS.
10. MASONRY WALLS REINFORCED WITH (1) - #5 VERTICAL (WITH MATCHING DOWEL AT FOOTINGS) IN SOLID GROUT FILLED CELLS AT ALL CORNERS, INTERSECTIONS, ADJACENT MASONRY OPENINGS (COORDINATE SIZE, LOCATIONS, AND ELEVATIONS WITH ARCH. DWGS.) AND BETWEEN AT 32"O.C. (MAX). TYPICAL SPACING OF REINFORCED CELLS APPLIES ABOVE AND BELOW ALL MASONRY OPENINGS. EXTEND VERTICAL REINFORCING BARS THRU (SPLICE / LAP AS REQUIRED) TO UPPER CONCRETE TIE BEAM OR KNOCK-OUT BLOCK COURSE AND TERMINATE WITH STANDARD 90 DEGREE HOOK.

LEGEND

⊗	INDICATES HOLDOWN ANCHOR LOCATIONS.
▬	INDICATES EXTENT OF SHEAR WALL. SEE SHEAR WALL SCHEDULE FOR SHEAR WALL INFORMATION.
▩	INDICATES 8" CMU WALL REINFORCED (& MATCHING DOWEL AT FTG.) IN SOLID GROUT FILLED CELLS. SEE PLAN NOTE 10 FOR REINFORCEMENT SIZE AND SPACING.
■	INDICATES WOOD/PSL COLUMN. SEE COLUMN SCHEDULE FOR SIZE.
℄	INDICATES SLAB CONTROL JOINT. COORDINATE LAYOUT W/ARCH. FLOOR FINISH.
TSWF#	INDICATES THICKENED SLAB WALL FOOTING TYPES. SEE PLAN AND "FOOTING SCHEDULE" FOR SIZE AND REINFORCING INFORMATION.
WF#	INDICATES WALL FOOTING TYPES. SEE PLAN AND "FOOTING SCHEDULE" FOR SIZE AND REINFORCING INFORMATION.

ELEVATION LEGEND	
0'-0" (REF)	T/ SLAB, TSE, UNO
-2'-0" (REF)	T/ F, WF, UNO

BREC
A Stratus Team Company
1605 CURTIS BRIDGE ROAD - SUITE 1
WILKESBORO, NC 28697
PHONE : 336.844.4088
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SEALS

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10/15/2025

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09/17/25

REVISIONS

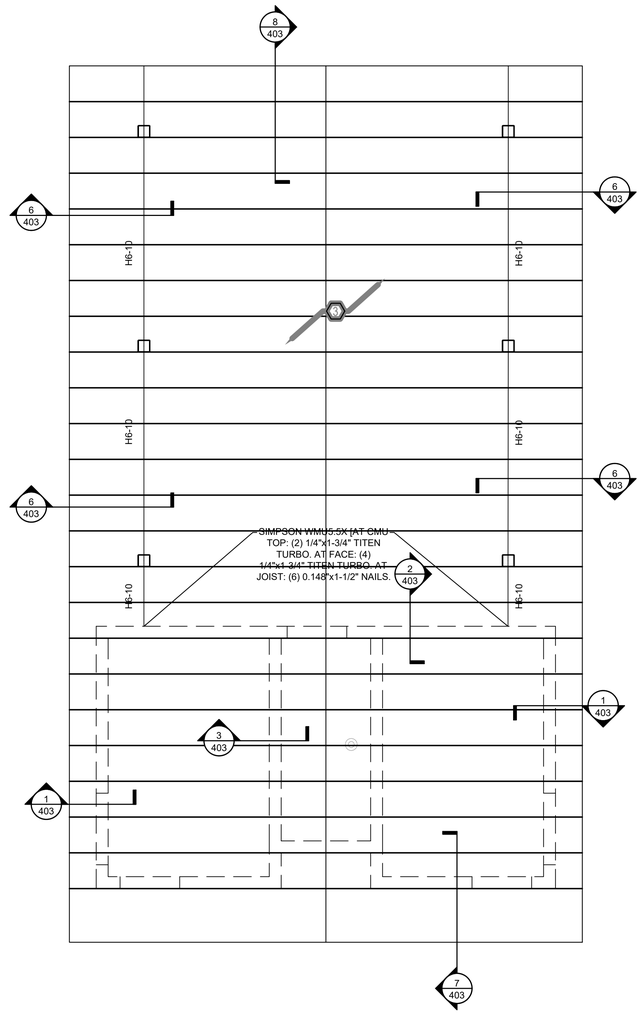
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Consulting Engineers
1180 HARWOOD AVE. SUITE 3000
ALTAMONTE SPRINGS, FLORIDA 32714
TEL: 321.972.4466
WWW.JLCENG.COM
FL CA NO. 37088
JLC25.0117.00

SHEET SIZE:	24"x36"
PROJECT NUMBER:	JLC25.0117.00
DRAWN BY:	JJC, GJH
APPROVED BY:	JTC

PAVILION
FLOOR PLAN
STRUCTURAL

S101

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1 S102 PAVILION ROOF PLAN - STRUCTURAL
SCALE: 1/4" = 1'-0"

ROOF FRAMING PLAN NOTES

1. SEE SHEETS SX.XX FOR GENERAL STRUCTURAL NOTES.
2. DO NOT SCALE DRAWINGS. SEE ARCHITECTURAL DRAWINGS FOR ADDITIONAL DIMENSIONS NOT SHOWN. VERIFY ALL DIMENSIONS W/ ARCHITECTURAL DRAWINGS PRIOR TO START OF CONSTRUCTION. IF A DISCREPANCY SHOULD OCCUR, CONTACT THE ARCHITECT IN WRITING FOR CLARIFICATION BEFORE PROCEEDING.
3. TYPICAL ROOF CONSTRUCTION:
ROOFING SYSTEM (SEE ARCHITECTURAL DRAWINGS) OVER 15/32" SHEATHING (SEE GENERAL NOTES FOR ATTACHMENT) OVER PRE-ENGINEERED WOOD TRUSSES SPACED AT 24" OC MAX, COORDINATE ALL TRUSS PROFILES AND EXACT LAYOUT W/ ARCHITECTURAL DRAWINGS AND MANUFACTURER / SUPPLIER APPROVED SHOP DRAWINGS.
4. TYPICAL OVER BUILD ROOF FRAMING:
ROOFING SYSTEM (SEE ARCHITECTURAL DRAWINGS) OVER 15/32" SHEATHING (SEE GENERAL NOTES FOR ATTACHMENT) OVER PRE-ENGINEERED WOOD TRUSSES OR 2x FRAMING SPACED AT 24" OC MAX, COORDINATE ROOF PROFILES W/ ARCHITECTURAL DRAWINGS AND TRUSS MANUFACTURER / SUPPLIER APPROVED SHOP DRAWINGS.
5. PROVIDE CORNER BARS WHERE ALL CONCRETE BEAMS AND MASONRY BOND BEAMS CHANGE DIRECTION AND AT ALL CONCRETE BEAMS AND TIE BEAM INTERSECTIONS. SEE TYPICAL REINFORCING SECTIONS FOR ADDITIONAL INFROMATION.
6. SEE ARCH'L DWGS FOR CONSTRUCTION INFORMATION OF INTERIOR NON-LOAD BEARING PARTITION WALLS NOT SHOWN.
7. PROVIDE MASONRY LINTELS OVER ALL OPENINGS IN MASONRY WALLS, UNO ON PLAN (COORDINATE EXACT SIZE, LOCATION, AND ELEVATION WITH ARCH'L DRAWINGS). SEE TYPICAL MASONRY OPENING SCHEDULE ON SHEET SX.XX FOR LINTEL TYPE SIZES AND REINFORCING.
8. MASONRY WALLS REINFORCED WITH (1) - #5 VERTICAL IN SOLID GROUT FILLED CELLS AT ALL CORNERS, INTERSECTIONS, ADJACENT MASONRY OPENINGS (COORDINATE SIZE, LOCATIONS, AND ELEVATIONS WITH ARCH. DWGS.) AND BETWEEN AT 32"O.C. (MAX). TYPICAL SPACING OF REINFORCED CELLS APPLIES ABOVE AND BELOW ALL MASONRY OPENINGS. EXTEND VERTICAL REINFORCING BARS THRU (SPLICE / LAP AS REQUIRED) TO UPPER CONCRETE TIE BEAM OR KNOCK-OUT BLOCK COURSE AND TERMINATE WITH STANDARD 90 DEGREE HOOK.
9. PROVIDE WOOD HEADERS OVER ALL OPENINGS. IF NO HEADER TYPE IS SPECIFIED, PROVIDE H2-10 AT INTERIOR LOAD BEARING WALLS AND H2-12 AT EXTERIOR LOAD BEARING WALLS. SEE HEADER / BEAM SCHEDULE AND COLUMN SCHEDULE AT BEAM LOCATIONS. (USE H3-XX VARIANT FOR 6" FRAME WALL)
10. PROVIDE ADDITIONAL STUDS AT EACH END OF GIRDER TRUSSES TO FOUNDATION. REFER TO WOOD GENERAL NOTES FOR ADDITIONAL INFO.

LEGEND

- INDICATES LOAD BEARING WALL. SEE PLAN FOR SIZE AND SPACING
- (BB-) INDICATES MASONRY BOND BEAM. SEE CONCRETE BEAM SCHEDULE.
- INDICATES GIRDER TRUSS OR WOOD BEAM. SEE PLAN AND SCHEDULE FOR SIZE AND SUPPORT.
- INDICATES PRE-ENGINEERED WOOD TRUSS. SEE PLAN FOR SIZE AND SPACING.

ELEVATION LEGEND
- 8'-0" (REF) ___ T/ BOND BEAM, UNO
- 8'-1 1/2" (REF) ___ B/ TRUSS BRNG, UNO

Joseph, Lawrence & Co
Consulting Engineers
1180 HARWOOD AVE. SUITE 3000
ALTAMONTE SPRINGS, FLORIDA 32714
TEL. 321.972.4466
WWW.JLCENG.COM
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A Stratus Team Company
1605 CURTIS BRIDGE ROAD - SUITE 1
WILKESBORO, NC 28697
PHONE : 336.844.4088
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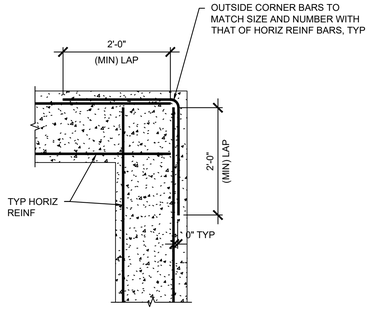
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DRAWN BY:	JJC, GJH
APPROVED BY:	JTC

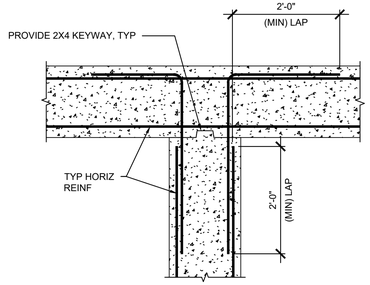
PAVILION
ROOF PLAN
STRUCTURAL

S102

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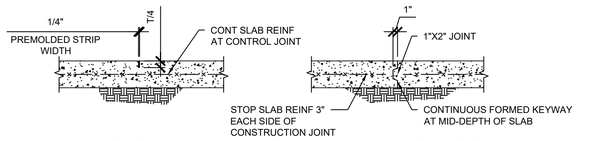
CORNERS



INTERSECTIONS

1 HORIZONTAL REINFORCEMENT FOR CAST-IN-PLACE CONCRETE

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



CONTROL JOINT

CONSTRUCTION JOINT

SAW CONTROL JOINTS NOTES:
1. MAKE SAW CUT AS SOON AS SLAB IS ABLE TO SUPPORT WEIGHT OF WORKES AND SAWING EQUIPMENT WITHOUT DAMAGE TO FINISH SURFACE OF SLAB.
2. ALL SAW CUT CONTROL JOINTS SHALL BE "SOFT CUT" WITHIN 2 HOURS AFTER FINAL FINISHING.
3. CLEAN JOINT PRIOR TO FILLING THE JOINT.

JOINT SPACING NOTE:
1. PROVIDE CONTROL AND/OR CONSTRUCTION JOINTS AT EACH COLUMN LINE AND BETWEEN THE COLUMN LINES SUCH THAT THE JOINT SPACING DOES NOT EXCEED 12 FEET. THE SLAB AREA BETWEEN JOINTS SHALL NOT EXCEED A 2:1 RATIO OF PROPORTION (150 SQ. FT. MAX.)

CONSTRUCTION JOIINT NOTES:
1. SEE PLAN FOR SLAB THICKNESS (T) AND REINFORCEMENT.
2. SLAB REINFORCEMENT SHALL BE CHAIRED BY SOIL SUPPORTED SLAB BOLSTERS 3'-0" O.C. EA. WAY.
3. BREAK BOND BETWEEN NEW AND PREVIOUSLY PLACED SLAB BY SPRAYING OR PAINTING EXPOSED SIDE OF SLAB AND DOWEL WITH A CURING COMPOUND, ASPHALTIC EMULSION, OR FORM OIL.
4. REFER TO GENERAL NOTES, GENERAL SPECIFICATINS, AND DRAWINGS FOR SUB-FLOOR DRAINAGE SYSTEM, SUBGRADE PREPARATION AND/OR MUD SLAB REQUIRMENTS.
5. SUBGRAD FILL SHALL BE FREE OF STANDING WATER AT THE TIME OF CONCRETE PLACEMENT.

2 FOUNDATION CONTROL AND CONSTRUCTION JOINTS

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

SECTION

ELEVATION

3 PENETRATION THRU SHALLOW WALL FOOTING

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

SECTION

ELEVATION

4 PENETRATION BELOW SHALLOW WALL FOOTING

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

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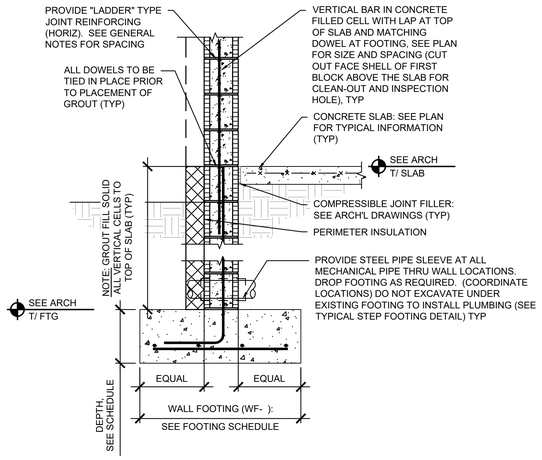
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FOUNDATION DETAILS

S401

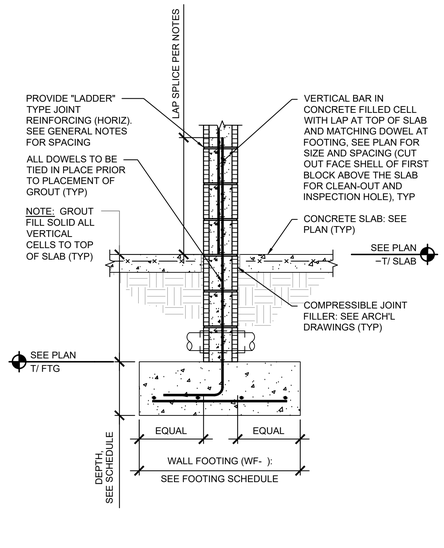
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ALTAMONTE SPRINGS, FLORIDA 32714
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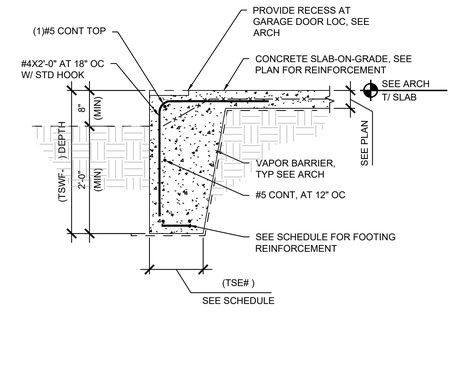
1 CMU EXTERIOR WALL FOOTING

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



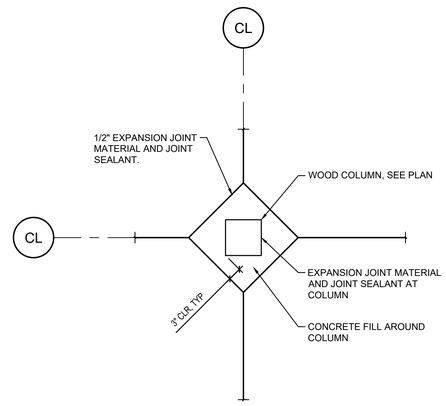
2 CMU INTERIOR WALL FOOTING

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



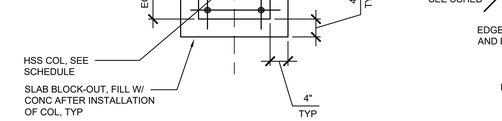
3 EXTERIOR SLAB EDGE

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

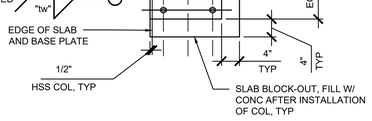


4 SLAB JOINT/BLOCKOUT AT COLUMN

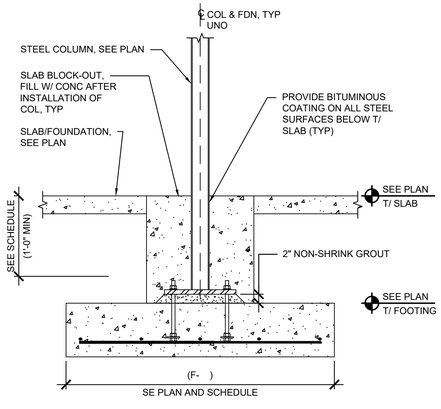
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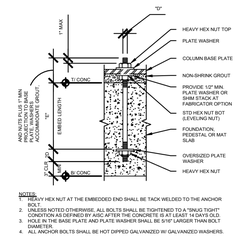
HSS PLAN VIEW



HSS PLAN VIEW AT SLAB EDGE



SE PLAN AND SCHEDULE



NOTES:
1. HEAVY HEX NUT AT THE EMBEDDED END SHALL BE TACK WELDED TO THE ANCHOR BOLT.
2. UNLESS NOTED OTHERWISE, ALL BOLTS SHALL BE TIGHTENED TO A "SNUG TIGHT" CONDITION AS DEFINED BY AISC AFTER THE CONCRETE IS AT LEAST 14 DAYS OLD.
3. HOLE IN THE BASE PLATE AND PLATE WASHER SHALL BE 1/16" LARGER THAN BOLT DIAMETER.
4. ALL ANCHOR BOLTS SHALL BE HOT DIPPED GALVANIZED W/ GALVANIZED WASHERS.

TYPICAL ANCHOR BOLT DIAGRAM

BASE PLATE SCHEDULE

COLUMN	BASE PLATE	ANCHOR BOLT	"tw"
HSS5x5x3/8	PL3/4"x12"x1'-0"	3/4" DIA x 8" EMBED	1/4"

5 STEEL COLUMN BASEPLATE DETAIL AND SCHEDULE

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

BREC
A Stratus Team Company
1605 CURTIS BRIDGE ROAD - SUITE 1
WILKESBORO, NC 28697
PHONE : 336.844.4088
www.brec.biz

SEALS



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09/17/25

REVISIONS

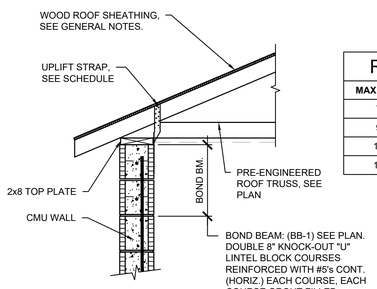
SHEET SIZE:	24"x36"
PROJECT NUMBER:	JLC25.0117.00
DRAWN BY:	JJC, GJH
APPROVED BY:	JTC

FOUNDATION DETAILS (CONT)

S402

Joseph, Lawrence & Co
Consulting Engineers
1180 HARWOOD AVE SUITE 3000
ALTAMONTE SPRINGS, FLORIDA 32714
TEL: 321.972.4466
WWW.JLCENG.COM
FL CA NO. 37088
JLC25.0117.00

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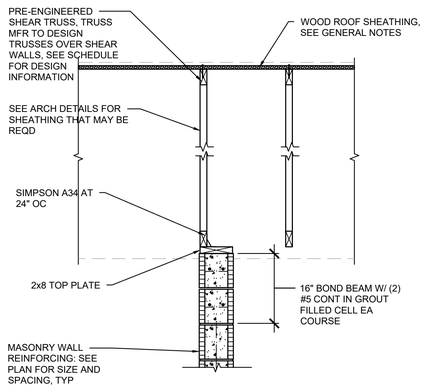


ROOF TRUSS TO MASONRY CONNECTION

MAX UPLIFT	TYPE	QTY	TO TRUSS	TO CMU
715	MTSM	1	(7) 0.148" x 1-1/2"	(4) 1/4" x 1-1/2" TITEN TURBO
955	HTSM	1	(8) 0.148" x 1-1/2"	(4) 1/4" x 1-1/2" TITEN TURBO
1430	MTSM	2	(14) 0.148" x 1-1/2"	(8) 1/4" x 1-1/2" TITEN TURBO
1910	HTSM	2	(16) 0.148" x 1-1/2"	(8) 1/4" x 1-1/2" TITEN TURBO

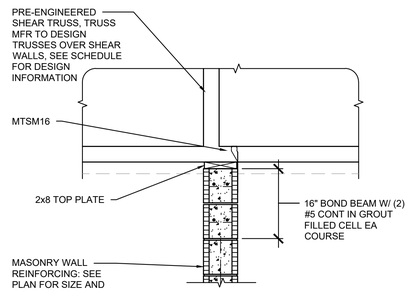
1 CMU EXTERIOR ROOF FRAMING AND HOLDOWNS

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



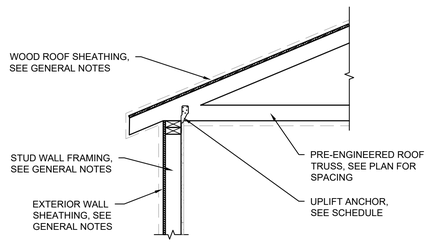
2 CMU INTERIOR ROOF FRAMING

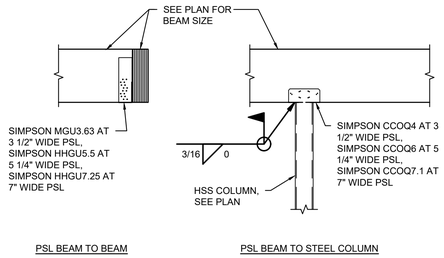
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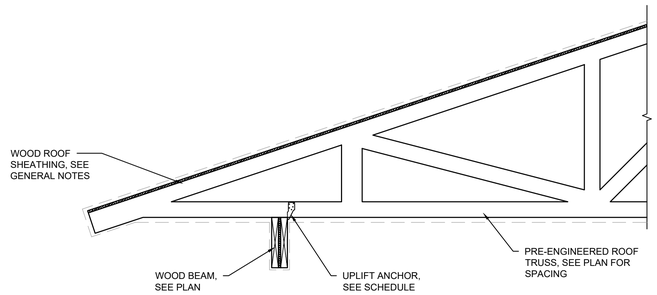


3 CMU INTERIOR ROOF FRAMING

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

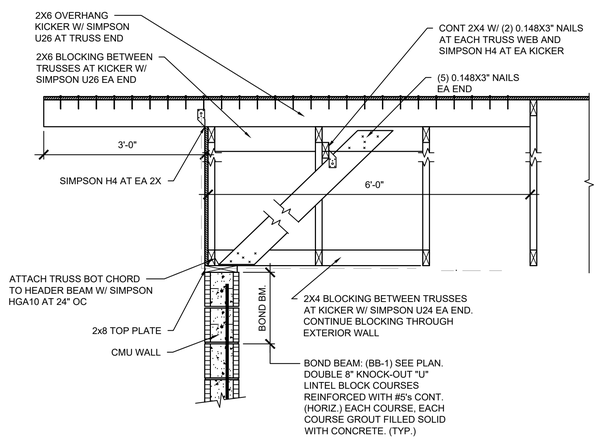






4 EXTERIOR ROOF FRAMING

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

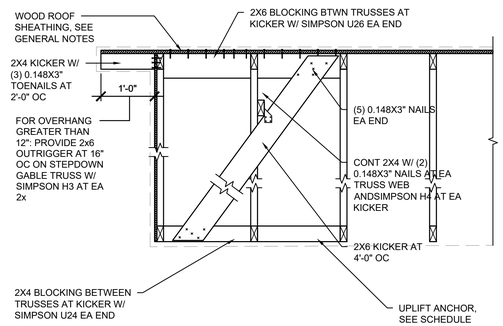


5 TYP BEAM TO POST CONNECTION

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

6 ROOF FRAMING AT WOOD SUPPORT BEAM

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



7 GABLE ROOF FRAMING AT CMU EXTERIOR

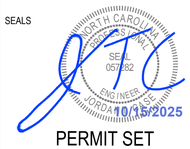
SCALE: 3/4" = 1'-0"

8 GABLE ROOF FRAMING AT WOOD SUPPORT BEAM

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

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ROOF DETAILS

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Joseph, Lawrence & Co
Consulting Engineers
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ALTAMONTE SPRINGS, FLORIDA 32714
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FL CA NO. 37088
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GENERAL PLUMBING NOTES:

ADMINISTRATIVE:

1. THE FOLLOWING ABBREVIATIONS SHALL APPLY TO NOTES AND PLANS:
   PC - PLUMBING CONTRACTOR,
   EC - ELECTRICAL CONTRACTOR,
   MC - MECHANICAL CONTRACTOR,
   GC - GENERAL CONTRACTOR,
   FASC - FIRE ALARM SYSTEM CONTRACTOR.
   SPC- CURRENT STATE PLUMBING CODE (NORTH CAROLINA STATE BUILDING CODE: PLUMBING CODE)
2. "PROVIDE" MEANS TO FURNISH AND INSTALL. THE PLUMBING CONTRACTOR SHALL ALSO INSTALL MATERIALS FURNISHED BY OTHERS AND THE GENERAL CONTRACTOR.
3. THE PC SHALL BE RESPONSIBLE FOR A COMPLETE AND OPERATIONAL SYSTEM AS DESCRIBED BY THESE PLANS AND SPECIFICATIONS.
4. ALL MATERIALS AND EQUIPMENT SHALL BE DELIVERED TO THE SITE AND UNLOADED AT AN APPROVED LOCATION. PC SHALL PROTECT ALL MATERIALS AND EQUIPMENT FROM BREAKAGE, THEFT, AND THE ELEMENTS. ALL MATERIALS AND EQUIPMENT SHALL REMAIN THE PROPERTY OF THE PC UNTIL THE PROJECT HAS BEEN COMPLETED AND TURNED OVER TO THE OWNER.
5. ALL MATERIALS USED SHALL BE NEW AND FREE OF DEFECTS. ANY MATERIALS FOUND TO BE DEFECTIVE SHALL BE REPLACED AT NO EXPENSE TO THE OWNER. ALL MATERIALS AND EQUIPMENT SHALL BEAR APPROVAL FROM UL OR AN APPROVED THIRD-PARTY AGENCY. WHERE A MANUFACTURER AND MODEL NUMBER IS GIVEN, IT IS TO ESTABLISH A STANDARD OF QUALITY AND NOT TO LIMIT PRODUCTS TO A PARTICULAR MANUFACTURER. PRODUCTS DETERMINED TO BE EQUAL BY THE ENGINEER WILL BE ACCEPTED.
6. THE PLUMBING SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH THE SPC AND ANY APPLICABLE LOCAL CODES. WHERE A CONFLICT EXISTS BETWEEN THE ABOVE REQUIREMENTS, THE CONTRACTOR SHALL OBTAIN CLARIFICATION FROM THE ENGINEER OR IN THE EVENT ANY PART OF THESE PLANS CONFLICTS WITH THE ABOVE REQUIREMENTS.
7. THE PC SHALL OBTAIN AND PAY FOR ALL PERMITS, FEES, AND INSPECTIONS NECESSARY FOR THE COMPLETION OF THE WORK UNDER THIS CONTRACT.
8. DO NOT SCALE THESE DRAWINGS-REFER TO ARCHITECTURAL SHEETS FOR DIMENSIONS.
9. THESE PLANS ARE DIAGRAMMATIC. THE PC SHALL ADJUST THE LOCATIONS OF EQUIPMENT, FIXTURES, PIPING, ETC, TO ACCOMMODATE PLANNED AND ENCOUNTERED INTERFERENCES. THE DRAWINGS DO NOT SHOW ALL BENDS, OFFSETS, AND FITTINGS THAT MAY BE REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM. THE PC SHALL MAKE ALLOWANCES FOR SUCH DEVIATIONS AND CONTINGENCIES IN BID TO IMPLEMENT THEM WITHOUT ADDITIONAL COST TO THE OWNER.
10. THE PC SHALL VISIT THE SITE PRIOR TO BIDDING TO BECOME FAMILIAR WITH EXISTING CONDITIONS. CONTRACTOR SHALL CONTACT THE ENGINEER TO RESOLVE ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THESE PLANS. TO AVOID POTENTIAL CONFLICTS, COORDINATE WITH OTHER TRADES PRIOR TO THE START OF CONSTRUCTION.
11. ALL UNDERGROUND UTILITIES SHALL BE LOCATED PRIOR TO ANY DIGGING.
12. TRENCHING, COMPACTION, AND BACKFILL SHALL BE BY PC AND SHALL BE IN ACCORDANCE WITH SECTION 306 OF THE SPC. UNDERGROUND LINES SHALL BE LOCATED SUCH THAT THEY DO NOT ENDANGER FOOTINGS OR FOUNDATION WALLS.
13. THE PC SHALL PROVIDE FIRESTOPPING AT ALL PENETRATIONS OF RATED FLOOR/CEILING ASSEMBLIES AND RATED WALL ASSEMBLIES TO PRESERVE OR RESTORE THE FIRE RESISTANCE RATING. SEAL ALL PENETRATIONS USING A UL LISTED SYSTEM FOUND IN THE UL DIRECTORY SPECIFIC TO THE UL LISTING OF THE ASSEMBLY BEING PENETRATED. SEE ARCHITECTURAL PLANS FOR UL RATED ASSEMBLIES SPECIFIC TO THE PROJECT.
14. SYSTEM TESTING SHALL BE PERFORMED BY PLUMBING CONTRACTOR IN ACCORDANCE WITH SPC, SECTIONS 312.2, 312.3, AND 312.5.
15. PC SHALL DISINFECT THE ENTIRE DOMESTIC WATER PIPING SYSTEM IN ACCORDANCE WITH THE AMERICAN WATER WORKS ASSOCIATION'S SPECIFICATIONS AND LOCAL HEALTH DEPARTMENT REGULATIONS.
16. AT THE COMPLETION OF WORK AND PRIOR TO ACCEPTANCE BY OWNER, THE PC SHALL CLEAN ALL EXPOSED FIXTURES, MATERIALS, AND EQUIPMENT UNDER THIS CONTRACT.
17. PC SHALL COORDINATE WITH THE GENERAL CONTRACTOR TO ENSURE ALL APPLICABLE CONSTRUCTION WASTE IS RECYCLED DURING THE CONSTRUCTION PHASE OF THE PROJECT.
18. ALL PLUMBING SCOPE IS WITHIN FIVE (5) FEET OF EXTERIOR OF BUILDING OR AS SHOWN ON PLANS.

METHODS:

1. EXTEND DOMESTIC WATER PIPE AS INDICATED ON THE PLANS AND INSTALL DOMESTIC WATER DISTRIBUTION PIPING TO ALL FIXTURES AND EQUIPMENT REQUIRING THE SAME. WATER SERVICE PIPE AND THE BUILDING SEWER SHALL BE SEPARATED BY 5 FEET OF UNDISTURBED OR COMPACTED EARTH IN ACCORDANCE WITH 603.2 SPC. PROVIDE ALL FITTINGS, VALVES, AND OTHER ACCESSORIES AS NECESSARY FOR A COMPLETE INSTALLATION. ALL DOMESTIC WATER PIPING SHALL BE CONCEALED IN FINISHED AREAS. ANY OPEN ENDS SHALL BE PROTECTED UNTIL FINAL CONNECTIONS ARE MADE.
2. ABOVE GRADE DOMESTIC WATER PIPING SHALL BE SLOPED AT A MINIMUM OF 1/32 INCH PER FOOT AND ARRANGED TO DRAIN AT LOW POINTS. INSTALL PIPING TO ALLOW FOR EXPANSION AND CONTRACTION WITHOUT STRESSING PIPE, JOINTS, OR CONNECTED EQUIPMENT. ROUTE PIPING IN AN ORDERLY MANNER-PARALLEL OR PERPENDICULAR TO WALLS WHEN POSSIBLE-AND MAINTAIN GRADIENT. EACH SUPPLY BRANCH LINE SERVING MORE THAN ONE FIXTURE SHALL HAVE A SHUTOFF VALVE INSTALLED TO ISOLATE ALL FIXTURES AND PIECES OF EQUIPMENT SUPPLIED BY THE BRANCH LINE. THE SHUTOFF VALVE SHALL BE LABELED AND LOCATED AS CLOSE TO THE CONNECTION TO THE SUPPLY MAIN AND RISER AS POSSIBLE. PROVIDE A FULL-OPEN VALVE ON THE BASE OF EVERY WATER RISER PIPE AND ON THE TOP OF EVERY WATER DOWN-FEED PIPE. PROVIDE VALVE HANDLE EXTENSIONS AS NECESSARY FOR INSULATION.
3. IT SHALL BE THE RESPONSIBILITY OF THE PC TO SUSPEND AND SUPPORT ALL PIPING SYSTEMS FOLLOWING RECOGNIZED ENGINEERING PRACTICES AND USING STANDARD, COMMERCIALLY ACCEPTED PIPE HANGERS AND SUSPENSION EQUIPMENT. ALL FIXTURES, DEVICES, AND EQUIPMENT SHALL BE SECURELY MOUNTED TO THE BUILDING STRUCTURE AND SHALL NOT RELY ON CEILING OR WALL SURFACES FOR SUPPORT. THE SUPPORT ATTACHMENT SHALL SUPPORT THE WEIGHT OF THE FIXTURE OR EQUIPMENT PLUS THE WEIGHT OF THE SUPPORT ATTACHMENT ITSELF. SUPPORT FROM THE TOP CHORD OF THE ROOF JOISTS, GIRDERS, AND BEAMS. THE BOTTOM CHORD IS NOT TO BE USED FOR EQUIPMENT AND PIPING SUPPORT. HANGERS SHALL NOT BE ATTACHED TO CORRUGATED STEEL DECKING. USE STEEL HANGERS FOR STEEL AND PLASTIC PIPE AND COPPER OR COPPER-PLATED HANGERS FOR COPPER PIPE. PROVIDE PROTECTION FOR COPPER PIPING IN CONTACT WITH DISSIMILAR METALS. WHERE COPPER PIPING IS SUPPORTED ON HANGERS WITH OTHER PIPING, PROVIDE A PERMANENT ELECTROLYTIC ISOLATION MATERIAL TO PREVENT CONTACT WITH OTHER METALS. IN GENERAL, HANGERS SHALL BE CLEVIS TYPE, STANDARD WEIGHT. FOR PIPING, HANGER SPACING SHALL BE IN ACCORDANCE WITH TABLE 308.5 OF THE SPC. HANGERS AND ACCESSORIES SHALL BE GRINNEL, MASON, OR B-LINE.
4. SLEEVE ALL PIPES PASSING THROUGH PARTITIONS, WALLS, AND FLOORS. SLEEVES IN FLOORS AND INTERIOR WALLS OF POURED IN PLACE CONCRETE, BRICK, TILE, OR MASONRY SHALL BE SCHEDULE 40 STEEL PIPE, MACHINE CUT. SLEEVES IN GYPSUM BOARD WALLS SHALL BE 22 GAUGE, ROLLED GALVANIZED SHEET METAL. TACK WELD ON THE LONGITUDINAL SEAM. PROVIDE SLEEVES WHERE PIPES PASS THROUGH FLOORS AND WALLS ABOVE AND BELOW CEILINGS. PROVIDE SPLIT PIPE SLEEVES IN NEW WALLS BUILT UP AROUND EXISTING PIPES. TACK WELD SPLIT SLEEVES TOGETHER. SLEEVES IN WALLS SHALL BE INSTALLED FLUSH WITH THE WALL. SLEEVES IN FLOORS SHALL EXTEND 3/4 INCH ABOVE THE FLOOR-EXCEPT THEY SHALL BE FLUSH FOR 2 HOUR RATED FLOORS-AND SHALL BE FLUSH WITH THE STRUCTURE BELOW. EACH SLEEVE SHALL HAVE AN INSIDE DIAMETER 1 INCH LARGER THAN THE OUTSIDE DIAMETER OF THE COVERING OF EACH COVERED PIPE TO ALLOW CONTINUOUS INSULATION-BUT NOT LESS THAN TWO PIPE SIZES LARGER THAN EACH UNCOVERED. ANNULAR SPACES BETWEEN SLEEVES AND PIPES SHALL BE FILLED OR CAULKED IN AN APPROVED MANNER.
5. THE TOP OF WATER PIPES INSTALLED BELOW GRADE OUTSIDE THE BUILDING SHALL BE BELOW THE FROST LINE OR A MINIMUM OF 12 INCHES BELOW FINISHED GRADE WHICHEVER IS GREATER. WATER PIPING INSTALLED IN A WALL EXPOSED TO THE EXTERIOR SHALL BE LOCATED ON THE HEATED SIDE OF THE WALL INSULATION. WATER PIPING INSTALLED IN AN UNCONDITIONED UTILITY ROOM OR UNCONDITIONED ATTIC SHALL BE INSULATED TO A MINIMUM OF R6.5 DETERMINED IN ACCORDANCE WITH ASTM C 177.
6. HOT WATER PROVIDED TO PUBLIC HAND-WASHING FACILITIES/LAVATORIES SHALL BE TEMPERED WATER DELIVERED THROUGH AN APPROVED WATER-TEMPERATURE LIMITING DEVICE THAT CONFORMS TO ASSE 1070 OR CSA B125.3.
7. INSULATE ALL EXPOSED WASTE AND SUPPLY PIPING UNDER LAVATORIES, SINKS, AND ELECTRIC WATER COOLERS WITH THE HANDI-LAV GUARD INSULATION KIT BY TRUEBRO OR EQUAL.
8. POTABLE WATER OUTLETS SHALL BE PROTECTED FROM BACKFLOW IN ACCORDANCE WITH 608.15 SPC. PRESSURE TYPE VACUUM BREAKERS SHALL CONFORM TO ASSE 1020 AND SPILPROOF VACUUM BREAKERS SHALL COMPLY WITH ASSE 1056. HOSE-CONNECTION VACUUM BREAKERS SHALL CONFORM TO ASSE 1011, ASSE 1019, ASSE 1035, OR ASSE 1052. CONNECTIONS TO BEVERAGE DISPENSERS, COFFEE MACHINES, AND NON-CARBONATED BEVERAGE DISPENSERS SHALL BE PROTECTED BY A BACKFLOW PREVENTER IN ACCORDANCE WITH ASSE 1022.
9. THE PC SHALL INSTALL WATER HAMMER ARRESTORS ON BRANCH LINES WITH QUICK CLOSING VALVES PER MANUFACTURER'S INSTALLATION INSTRUCTIONS. WATER HAMMER ARRESTORS SHALL CONFORM TO ASSE 1010.
10. THE PC SHALL PROVIDE CHECK VALVES AT ALL FIXTURES WITH THREADED OUTLETS AS REQUIRED BY CODE. TRAP PRIMERS SHALL BE PROVIDED AS SHOWN ON THE PLANS OR AS REQUIRED.
11. ADJUST STOPS AND VALVES FOR INTENDED FLOW RATE TO FIXTURES WITHOUT SPLASHING, NOISE, OR OVERFLOW.
12. BEFORE COMMENCING WORK, CHECK INVERT ELEVATIONS REQUIRED FOR SEWER CONNECTIONS, CONFIRM INVERTS, AND VERIFY THESE CAN BE PROPERLY CONNECTED TO WITH SLOPE FOR DRAINAGE AND COVER TO AVOID FREEZING. ONCE INVERTS AND FALL HAVE BEEN ESTABLISHED, EXTEND SANITARY SEWER AS SHOWN AND INSTALL ALL DRAINS, STACKS, VENTS, FLOOR DRAINS, AND CLEANOUTS NECESSARY FOR A COMPLETE INSTALLATION.
13. ALL SANITARY SEWER PIPING IS BELOW GRADE OR WITHIN WALLS UNLESS OTHERWISE NOTED. ALL SANITARY VENT PIPING IS ABOVE THE CEILING OR WITHIN WALLS UNLESS OTHERWISE NOTED. SOIL AND WASTE PIPING SHALL BE INSTALLED TO PROVIDE PROTECTION AGAINST FREEZING PER 305.4.1 SPC. WASTE AND SOIL LINES LEAVING THE BUILDING MUST HAVE A MINIMUM COVER OF 3 INCHES.
14. SOIL AND WASTE LINES 2-1/2 INCHES AND SMALLER SHALL BE SLOPED AT 1/4 INCH PER FOOT MINIMUM. SOIL AND WASTE LINES 3 INCHES TO 6 INCHES IN DIAMETER SHALL BE SLOPED AT 1/8 INCH PER FOOT MINIMUM.
15. FOR WATER CLOSET WASTE CONNECTIONS, A 4 INCH BY 3 INCH CLOSET BEND SHALL BE ACCEPTABLE. WHERE A 3 INCH BEND IS UTILIZED ON WATER CLOSETS, A 4 INCH BY 3 INCH FLANGE SHALL BE INSTALLED TO RECEIVE THE FIXTURE HORN.
16. FOR PLASTIC PIPE SIZES GREATER THAN 6 INCHES, AND OTHER PIPE SIZES GREATER THAN 4 INCHES, RESTRAINTS SHALL BE PROVIDED FOR DRAINPIPES AT ALL CHANGES IN DIRECTION AND AT ALL CHANGES IN DIAMETER GREATER THAN TWO PIPE SIZES. BRACES, BLOCKS, RODDING, BACKFILL AND OTHER SUITABLE METHODS AS SPECIFIED BY THE COUPLING MANUFACTURER SHALL BE UTILIZED.
17. BASES OF STACKS SHALL BE SUPPORTED BY THE BUILDING STRUCTURE, VIRGIN OR COMPACTED EARTH, OR OTHER SUITABLE MATERIAL TO SUPPORT THE WEIGHT OF THE PIPING.
18. HORIZONTAL DRAINPIPES SHALL HAVE CLEANOUTS IN ACCORDANCE WITH 708.1 SPC. EXTEND CLEANOUTS TO FINISHED FLOOR OR WALL SURFACE. LUBRICATE THREADED CLEANOUT PLUGS WITH A MIXTURE OF GRAPHITE AND LINSEED OIL. ENSURE CLEARANCE AT ALL CLEANOUTS FOR RODDING OF DRAINAGE SYSTEM. INSTALL FLOOR CLEANOUTS AT AN ELEVATION TO ACCOMMODATE FINISHED FLOOR. EVERY CLEANOUT SHALL BE INSTALLED TO ALLOW CLEANING IN THE DIRECTION OF FLOW OF THE DRAINAGE PIPE OR AT RIGHT ANGLES THERETO. CLEANOUTS ON 6 INCH AND SMALLER PIPES SHALL BE PROVIDED WITH A CLEARANCE OF NOT LESS THAN 18 INCHES FOR RODDING.
19. DRAINAGE PIPING FOR FUTURE FIXTURES SHALL TERMINATE WITH AN APPROVED CAP OR PLUG.
20. AIR ADMITTANCE VALVES SHALL BE INSTALLED AFTER THE DWV TESTING REQUIRED BY SECTIONS 312.2 AND 312.3 OF THE SPC. PROVIDE ACCESS TO ALL AIR ADMITTANCE VALVES PER CODE. INSTALLATION OF ALL AIR ADMITTANCE VALVES SHALL CONFORM TO SECTION 918 OF THE SPC. AIR ADMITTANCE VALVES SHALL CONFORM TO ASSE 1050 OR 1051.
21. INDIRECT WASTE PIPING THAT EXCEEDS 2 FEET IN DEVELOPED LENGTH MEASURED HORIZONTALLY, OR 4 FEET IN TOTAL DEVELOPED LENGTH, SHALL BE TRAPPED. THE AIR GAP BETWEEN THE INDIRECT WASTE PIPE AND THE FLOOD LEVEL RIM OF THE WASTE RECEPTOR SHALL BE A MINIMUM OF TWICE THE EFFECTIVE OPENING OF THE INDIRECT WASTE PIPE.
22. THE PC SHALL PROVIDE UNIONS FOR DISASSEMBLY AND SERVICE OF ALL FIXTURES AND OTHER RELEVANT PLUMBING EQUIPMENT. UNIONS SHALL BE GROUND-JOINT WITH BRASS SEAT. PROVIDE INSULATING UNIONS AT EACH JUNCTION OF DISSIMILAR MATERIALS.
23. THE PC SHALL ACCURATELY ROUGH-IN ALL FIXTURES ACCORDING TO MANUFACTURER'S INSTALLATION DIMENSIONS AND INSTRUCTIONS. OFFSET ADAPTERS AND FLEXIBLE CONNECTORS ARE NOT ACCEPTABLE. FLUSH HANDLES SHALL BE MOUNTED ON THE WIDE SIDE OF TOILET AREAS FOR ADA COMPLIANCE. INSTALL EACH FIXTURE WITH TRAP EASILY REMOVABLE FOR SERVICING AND CLEANING. SEAL FIXTURES TO WALL AND FLOOR SURFACES WITH SEALANT. SOLIDLY ATTACH WATER CLOSESTS TO FLOOR WITH LAG SCREWS. SEAL ALL SELF-RIMMING LAVATORIES AND SINKS (VITREOUS CHINA AND STAINLESS STEEL) WITH A COMMERCIAL GRADE PLUMBER'S PUTTY OR ACRYLIC LATEX CAULK APPLIED TO THE UNDERSIDE OF THE FIXTURE RIM IN A GENEROUS AMOUNT SO THAT WHEN FIXTURE IS SET, SEALANT SHALL OOZE OUT.
24. ALL VENT THRU THE ROOF (VTR) PENETRATIONS SHALL BE COORDINATED WITH THE GENERAL CONTRACTOR. PC SHALL PROVIDE FLASHING MATERIAL REQUIRED FOR VTRS. JOINTS AT THE ROOF AND AROUND VENT PIPES SHALL BE MADE WATERTIGHT BY THE USE OF LEAD, COPPER, GALVANIZED STEEL, ALUMINUM, OR OTHER APPROVED FLASHINGS OR FLASHING MATERIAL. MAINTAIN MINIMUM 10 FEET FROM ALL OUTSIDE AIR INTAKES.
25. INSTALL FULL OPEN VALVES PER SPC 606.1 ON THE MAIN WATER LINE INTO THE BUILDING. INSTALL SHUTOFF VALVES PER SPC 606.2.

MATERIALS:

1. BALL VALVES SHALL HAVE BRASS BODY, FULL PORT, CHROME PLATED BALL, WITH TEFLON SEATS, 150 PSI WSP, AND COMPLY WITH MSS SP-110. GATE VALVES SHALL HAVE BRONZE BODY, CLASS 150, AND COMPLY WITH MSS SP-80, TYPE 2 STANDARD. VALVE BODY SHALL BE ASTM B 62, BRONZE WITH INTEGRAL SEAT AND UNION RING BONNET. ENDS SHALL BE THREADED OR SOLDER WITH COPPER-SILICON BRONZE STEM AND SOLID-WEDGE BRONZE DISC. INSTALL VALVES IN LOCATIONS THAT PERMIT EASY ACCESS WITHOUT DAMAGE TO BUILDING OR FINISHED MATERIALS; PROVIDE ACCESS DOORS IF REQUIRED. VALVES SHALL BE BY NIBCO, WATTS, OR STOCKHAM.
2. COLD WATER LINES SHALL BE INSULATED WITH 1/2 INCH THICK FIBROUS GLASS INSULATION WITH A FLAME DENSITY RATING LESS THAN 25 AND A SMOKE DENSITY RATING LESS THAN 50 WHEN TESTED IN ACCORDANCE WITH ASTM E 84. HOT WATER LINES UP TO 2 INCHES DIAMETER SHALL HAVE 1 INCH THICK INSULATION CONFORMING TO THE SAME STANDARD. PIPING LARGER THAN 2 INCHES SHALL RECEIVE 1-1/2 INCH THICK INSULATION. CLOSED CELL RUBBER INSULATION MEETING THE SMOKE AND FLAME RATINGS ABOVE MAY BE SUBSTITUTED FOR FIBROUS GLASS TYPE IF SO DESIRED. INSULATION INSTALLED ON PIPING OPERATING BELOW AMBIENT TEMPERATURES MUST HAVE A CONTINUOUS VAPOR RETARDER. ALL JOINTS, SEAMS AND FITTINGS MUST BE SEALED. ON SYSTEMS OPERATING ABOVE AMBIENT, THE BUTT JOINTS SHOULD NOT BE SEALED. ON COLD SURFACES WHERE A VAPOR SEAL MUST BE MAINTAINED, INSULATION SHALL BE APPLIED WITH A CONTINUOUS, UNBROKEN MOISTURE AND VAPOR RETARDER. ALL HANGERS, SUPPORTS, ANCHORS, OR OTHER PROJECTIONS SECURED TO COLD SURFACES SHALL BE INSULATED AND VAPOR SEALED TO PREVENT CONDENSATION. ALL PIPE INSULATION SHALL BE CONTINUOUS THROUGH WALLS, CEILING OR FLOOR OPENINGS, OR SLEEVES EXCEPT WHERE FIRESTOP OR FIRESAFING MATERIALS ARE REQUIRED. INSULATION SHALL HAVE A FACTORY APPLIED ALL-SERVICE JACKET WITH SELF-SEALING LAP. WHITE-KRAFT PAPER BONDED TO ALUMINUM FOIL AND REINFORCED WITH GLASS FIBERS; CONFORMING TO ASTM C 1136 TYPE 1; VAPOR RETARDER; WITH A SELF-SEALING ADHESIVE. VERIFY THAT PIPING HAS BEEN TESTED, SURFACES ARE CLEAN AND DRY, AND ALL FOREIGN MATERIALS ARE REMOVED BEFORE APPLYING INSULATION MATERIALS. INSULATION SHALL BE BY KNAUF, ARMACELL, JOHNS-MANVILLE, OR OWENS-CORNING.
3. ALL INSULATION CONTAINING FIBROUS MATERIALS EXPOSED TO AIRFLOW SHALL BE RATED FOR THAT EXPOSURE OR SHALL BE ENCAPSULATED. INSULATING PROPERTIES FOR ALL MATERIALS SHALL MEET OR EXCEED INDUSTRY STANDARDS. POLYSTYRENE PRODUCTS SHALL MEET ASTM C578 91. ALL INSULATION SHALL BE LOW-EMITTING WITH NOT GREATER THAN 0.05 PPM FORMALDEHYDE EMISSIONS. THE MAXIMUM FLAME SPREAD AND SMOKE DEVELOPED INDEX FOR INSULATION SHALL MEET THE REQUIREMENTS OF THE LOCAL CODES AND ORDINANCES ADOPTED BY THE JURISDICTION IN WHICH THE BUILDING IS LOCATED.
4. FAUCETS AND FIXTURE FITTINGS SHALL CONFORM TO ASME A112.18.1. FAUCETS AND FIXTURE FITTINGS THAT SUPPLY DRINKING WATER FOR HUMAN CONSUMPTION SHALL CONFORM TO THE REQUIREMENTS OF NSF 61, SECTION 9. FIXTURE FITTINGS, FAUCETS, AND DIVERTERS SHALL BE INSTALLED AND ADJUSTED SO THAT THE FLOW OF HOT WATER FROM THE FITTINGS CORRESPONDS TO THE LEFT-HAND SIDE OF THE FIXTURE FITTING.
5. BACKFLOW PREVENTION SHALL BE IN ACCORDANCE WITH SECTION 608.13 OF THE SPC AND THE LOCAL AUTHORITY HAVING JURISDICTION. REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTERS SHALL CONFORM TO ASSE 1013 OR AWWA C511. THE RELIEF OPENING SHALL DISCHARGE BY AIR GAP. AIR GAPS SHALL COMPLY WITH ASME A112.1.1 AND AIR GAP FITTINGS WITH ASME A112.1.3. DOUBLE CHECK VALVE ASSEMBLIES SHALL CONFORM TO ASSE 1015 OR AWWA C510. ACCESS TO BACKFLOW PREVENTERS SHALL BE PROVIDED AS SPECIFIED BY THE INSTALLATION INSTRUCTIONS OF THE APPROVED MANUFACTURER.
6. FOR BELOW GRADE SANITARY WASTE PIPING, PC SHALL USE SERVICE WEIGHT CAST IRON PIPE WITH COMPRESSION JOINTS (ASTM A 74). USE MINIMUM 2" SIZE UNDERGROUND. SOLID WALL SCHEDULE 40 PVC (ASTM D 2665) WITH SCHEDULE 40 SOCKET TYPE PIPE FITTINGS (ASTM D 3311) MAY ALSO BE USED. DO NOT USE PVC PIPE FOR APPLICATIONS WHERE THE WASTEWATER TEMPERATURE EQUALS OR EXCEEDS 140°F OR IF THE BUILDING HEIGHT EXCEEDS 75 FEET.
7. FOR ABOVE GRADE SANITARY WASTE AND VENT PIPING, USE SERVICE WEIGHT CAST IRON NO-HUB TYPE WITH COUPLINGS (CISPI 301). SOLID WALL SCHEDULE 40 PVC (ASTM D 2665) WITH SCHEDULE 40 SOCKET TYPE FITTINGS (ASTM D 3311) MAY BE USED IF PERMITTED BY LOCAL CODE, EXCEPT IN BUILDINGS EXCEEDING 75 FEET IN HEIGHT. DO NOT INSTALL PVC IN RETURN AIR PLENUMS. ALL VENT AND BRANCH VENT PIPES SHALL BE SO GRADED AND CONNECTED AS TO DRAIN BACK TO THE DRAINAGE PIPE BY GRAVITY. BRANCH VENTS EXCEEDING 40 FEET IN DEVELOPED LENGTH SHALL BE INCREASED BY ONE NOMINAL SIZE FOR THE ENTIRE DEVELOPED LENGTH OF THE PIPE.
8. ALL OVERHEAD DOMESTIC WATER PIPING SHALL BE TYPE L COPPER WITH 95/5 LEAD FREE SOLDER, AND ALL BELOW GRADE WATER PIPING SHALL BE TYPE K COPPER WITH NO JOINTS. ALL PIPING SHALL HAVE MANUFACTURER'S NAME AND THE APPLICABLE STANDARD TO WHICH IT WAS MANUFACTURED CLEARLY MARKED ON EACH LENGTH. PIPING SHALL COMPLY WITH ASTM B-88. USE BRAZED JOINTS ON ALL COPPER PIPING 1-1/2 INCH AND LARGER. ALL PIPE AND PIPE FITTINGS, INCLUDING VALVES AND FAUCETS, USED IN THE WATER DISTRIBUTION SYSTEM SHALL HAVE A MAXIMUM LEAD CONTENT OF 0.25-PERCENT AND SHALL CONFORM TO NSF 61. HOT WATER DISTRIBUTION PIPE AND TUBING SHALL HAVE A MINIMUM PRESSURE RATING OF 100 PSI AT 180°F. COLD WATER DISTRIBUTION PIPE AND TUBING SHALL HAVE A MINIMUM PRESSURE RATING OF 160 PSI AT 73.4°F. DO NOT INSTALL PEX OR CPVC PIPING IN RETURN AIR PLENUMS.
   8.1 PC MAY USE PEX (ASTM F 877) WITH APPROVED FITTINGS (ASTM F 1807) WITH OWNER'S APPROVAL. CPVC PIPING (ASTM D 2846 OR ASTM F 441) WITH APPROVED FITTINGS (ASTM D 2846, ASTM F 438, OR ASTM F 439) MAY ALSO BE USED WHERE NOT LOCATED IN PLENUMS. ALL PLASTIC PIPE, FITTINGS, AND COMPONENTS SHALL BE THIRD-PARTY CERTIFIED AS CONFORMING TO NSF 14.
9. PC SHALL PROVIDE ALL WATER HEATERS (WATTAGE/INPUT AND CAPACITY AS NOTED IN SCHEDULE). ALL WATER HEATERS SHALL BE THIRD PARTY CERTIFIED; PROVIDE PANS FOR WATER HEATERS IN ACCORDANCE WITH 504.7 OF THE SPC. ELECTRICAL CONNECTIONS SHALL BE BY ELECTRICAL CONTRACTOR, PC SHALL COORDINATE WITH EC ON ELECTRICAL CHARACTERISTICS OF THE EQUIPMENT PROVIDED.
10. ALL PUMPS SHALL BE RATED FOR TRANSPORT OF POTABLE WATER. PUMPS IN AN INDIVIDUAL WATER SUPPLY SYSTEM SHALL BE CONSTRUCTED AND INSTALLED SO AS TO PREVENT CONTAMINATION FROM ENTERING THE WATER SUPPLY SYSTEM.

ABBREVIATIONS AND DEFINITIONS

ABBREVIATION	DEFINITION
CWS	COLD WATER SUPPLY
HWS	HOT WATER SUPPLY
SAN	SANITARY SEWER
GL	GREASE LADEN
VTR	VENT TO ROOF
FPHB	FREEZE PROOF HOSE BIBB
IHB	INTERIOR HOSE BIBB
PC	PLUMBING CONTRACTOR
BFP	BACK FLOW PREVENTOR
AFF	ABOVE FINISHED FLOOR
RI	ROUGH IN
CRI	CONCEALED ROUGH IN
ID	INTERIOR DRAIN-STORM
DS	DOWNSPUT-STORM
SS	SOIL STACK - SANITARY
FD	FLOOR DRAIN
RD	ROOF DRAIN
FU	FIXTURE UNIT
PT	PLASTER TRAP
PU	PROCTO UNIT
OS&Y	OUTSIDE STEAM AND YOKE
WH	WATER HEATER
OSD	OPEN-SITE DRAIN
VS	VENT STACK (SANITARY)
SV	STACK VENT (SANITARY)
FCO	FLOOR CLEAN OUT
WCO	WALL CLEAN OUT

LINETYPE LEGEND

COLD WATER SUPPLY
HOT WATER SUPPLY
SANITARY SEWER LINE
VENT LINE

DO NOT TAP WATER LINE AHEAD OF RPZ.

KILIAN
A Stratus Team Company
PO Box 3301, Henderson, NC 27536
www.kilianengineering.com | P| 252.436.8178
CORPORATE LICENSE C-2277

NORTH CAROLINA PROFESSIONAL SEAL 17304 ENGINEER MICHAEL W. KILIAN
10/02/2025
KILIAN ENGINEERING, INC. CORPORATE SEAL NORTH CAROLINA

NEW CONSTRUCTION FOR:

COVE CREEK PICNIC SHELTER & RESTROOMS

SUGAR GROVE, NC

REVISION

7	6	5	4	3	2	1	DATE
							DESCRIPTION

ISSUED: 10/02/2025

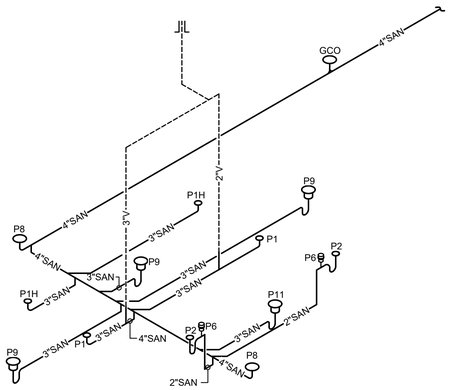
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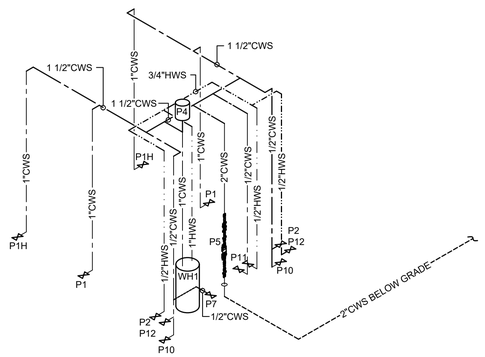
SHEET: PLUMBING NOTES AND SCHEDULES

SHEET NO. P-001

PROJECT NO: 250594



1 SANITARY RISER
Scale: NONE

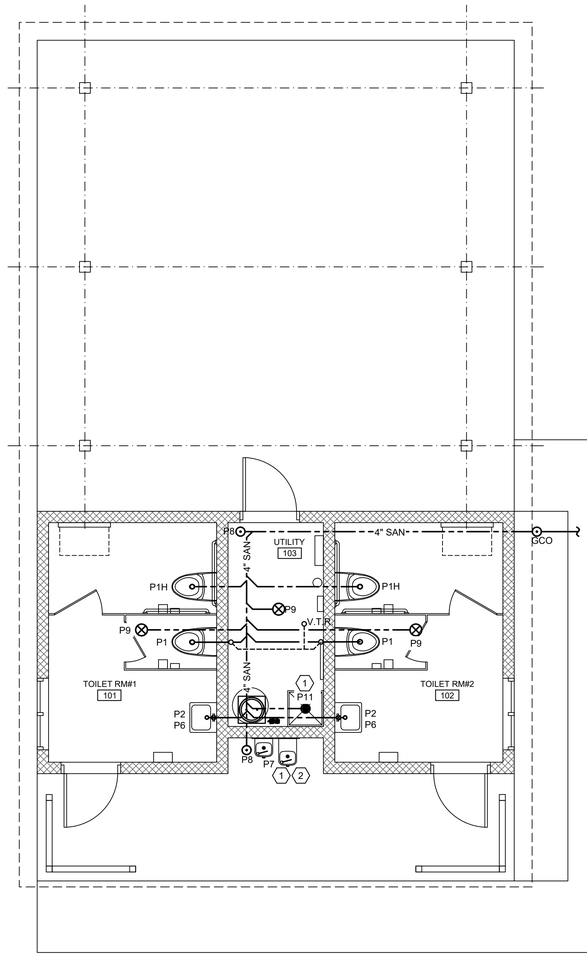


2 DOMESTIC SUPPLY RISER
Scale: NONE

SANITARY PLAN HEX NOTES

1. ROUTE WATER HEATER DRAIN PAN, BACKFLOW PREVENTER DRAIN AND DRINKING FOUNTAIN DRAIN INDEPENDENTLY TO MOP SINK AND TERMINATE WITH AIR GAP.
2. PROVIDE FREEZE PROTECTION FOR EWC. COORDINATE WITH EC.

- SECURE ALL EXPOSED WASTE AND VENT PIPING TO BLOCK WALL.



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

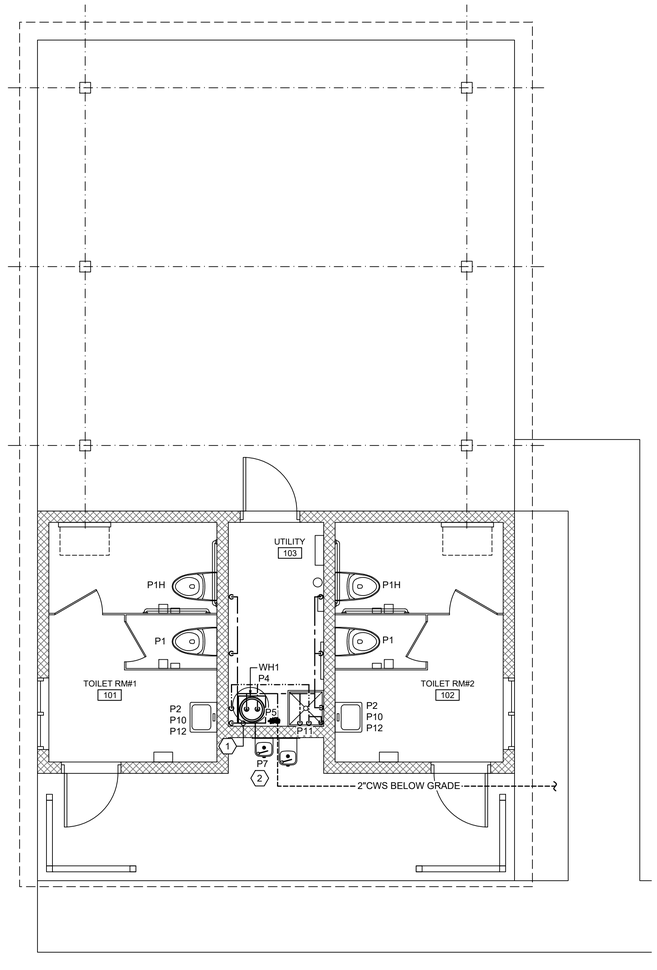
DOMESTIC SUPPLY PLAN HEX NOTES

1. BRANCH 1/2"CWS FROM LAV. VERTICAL BRANCH AND ROUTE SECURE ALONG WALL TO DRINKING FOUNTAIN.
2. PROVIDE FREEZE PROTECTION FOR EWC. COORDINATE WITH EC.

ALL REQUIRED VALVES NOT SHOWN.
- INSTALL FULL OPEN VALVES PER 2018 NC PLUMBING CODE 606.1.2, 606.1.5, AND 606.1.8
- INSTALL SHUT OFF VALVES PER 2018 NC PLUMBING CODE 606.2 AND 606.2.1

DO NOT TAP WATER SUPPLY AHEAD OF RPZ.

- SECURE ALL EXPOSED WATER SUPPLY PIPING TO BLOCK WALL.
- HOSE BIBBS AND MOP SINK USED FOR TRAP PRIMING



4 DOMESTIC SUPPLY PLAN
Scale: 1/4" = 1'-0"

KILIAN
A Stratus Team Company
PO Box 3301, Henderson, NC 27536
www.Kilianengineering.com | P| 252.436.8178
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10/02/2025
KILIAN ENGINEERING, INC CORPORATE SEAL NORTH CAROLINA

NEW CONSTRUCTION FOR:
COVE CREEK PICNIC SHELTER & RESTROOMS
SUGAR GROVE, NC

REVISION

7	6	5	4	3	2	1	SET
							DESCRIPTION

ISSUED: 10/02/2025

ISSUED FOR PERMITTING
DESCRIPTION

DRAWN BY: JCL
CHECKED BY: MWK/REW

SHEET:
PLUMBING PLANS AND RISERS

SHEET NO.
P-101

PROJECT NO: 250594

PLUMBING FIXTURE SCHEDULE

SYMBOL	FIXTURE	MANUFACTURER	FITTING	HW	CW	WASTE
P1	FLUSH VALVE WATER CLOSET	TOTO CT705EN OR EQUAL BY AMERICAN STANDARD OR KOHLER	FLOOR MOUNTED, VITREOUS CHINA, 1.28 GPF LOW CONSUMPTION SIPHON JET FLUSHING TOILET COMPLYING WITH ASME 112. 19. 2. TOILET SHALL BE ELONGATED FONT BOWL. PROVIDE SC534 OPEN FRONT SEAT LESS COVER. SLOAN CROWN 111-1.28 FLUSHOMETER OR EQUAL BY ZURN OR TOTO.	-	1"	3"
P1H	ADA FLUSH VALVE WATER CLOSET	TOTO CT705ELN OR EQUAL BY AMERICAN STANDARD OR KOHLER	"FLOOR MOUNTED, VITREOUS CHINA, 1.28 GPF LOW CONSUMPTION SIPHON JET FLUSHING TOILET COMPLYING WITH ASME 112. 19. 2. TOILET SHALL BE ELONGATED FONT BOWL. PROVIDE SC534 OPEN FRONT SEAT LESS COVER. SLOAN CROWN 111-1.28 FLUSHOMETER OR EQUAL BY ZURN OR TOTO. TOP OF SEAT SHALL BE 17-19 INCHES AFF FOR ADA.	-	1"	3
P2	WALL MOUNT LAVATORY	TOTO LT307.4 OR EQUAL BY AMERICAN STANDARD OR KOHLER	VITREOUS CHINA LAVATORY WITH BACKSPLASH COMPLYING WITH ASME 112. 19. 2. TOP OF RIM SHALL BE 34 INCHES AFF FOR ADA. PROVIDE WITH LAV-GUARD PROTECTORS FOR SUPPLY AND DRAIN LINES. PROVIDE JR SMITH 0700 (CONCEALED ARMS) WITH 19" ARMS 0800 (WALL SUPPORT PLATE). USE A METERING TYPE FAUCET SIMILAR TO CHICAGO 3300-E280SAB.	1/2"	1/2"	2"
P3	WATER HAMMER ARRESTOR	ZURN Z1700 SERIES OR EQUAL BY WATTS OR SIOUX CHIEF	INSTALL ON BRANCH LINES PER MFG'S INSTRUCTIONS. PROVIDE ACCESS PANEL WHERE NECESSARY WHERE LOCATED ABOVE HARD CEILINGS OR WITHIN WALLS.	-	VARIES	-
P4	EXPANSION TANK	AMTROL ST-5 OR EQUAL BY WATTS OR BELL & GOSSETT	INSTALL ON COLD WATER LINE BETWEEN WATER HEATER AND RPZ	-	3/4"	-
P5	2" RPZ BACKFLOW PREVENTER	WATTS LF909 QT OR EQUAL BY CONBRACO OR WILKINS	RPZ ASSEMBLY CONSISTING OF A PRESSURE DIFFERENTIAL RELIEF VALVE LOCATED IN A ZONE BETWEEN TWO POSITIVE SEATING CHECK VALVES. THE ASSEMBLY SHALL INCLUDE TWO TIGHTLY CLOSING SHUTOFF VALVES BEFORE AND AFTER THE ASSEMBLY, TEST COCKS AND A PROTECTIVE STRAINER UPSTREAM OF THE FIRST SHUTOFF VALVE. THE ASSEMBLY SHALL MEET THE REQUIREMENTS OF ASSE 1013 AND AWWA C511	-	2"	-
P6	AIR ADMITTANCE VALVE	STUDOR REDIVENT OR APPROVED EQUAL	ANSI/ASSE 1051 LISTED. NSF STANDARD 14. PROVIDE PVC OR ABS CONNECTOR AS NECESSARY.CONNECT VALVE TO PIPING PER MANUFACTURER. INSTALL IN THE VERTICAL, UPRIGHT POSITION AFTER ROUGH-IN AND PRESSURE TESTING OF THE SYSTEM.PROVIDE WALL BOX IF NOT ABOVE CEILING OR OTHERWISE CONCEALED.	-	-	2"
P7	DRINKING FOUNTAIN	OASIS PG8ACSL OR EQUAL BY ELKAY OR STERN WILLIAMS	ADA COMPLIANT FOR ADULT AND CHILD. 8.0 GPH OF 50°F WATER AT 90°F AMBIENT. PROVIDE ACCESSORY APRON FOR ADA COMPLIANCE AS NECESSARY	-	3/8"	2"
P8	FLOOR CLEANOUT	ZURN, WATTS, JR SMITH	EPOXY COATED CAST IRON FLOOR CLEANOUT WITH ROUND ADJUSTABLE GASKETED NICKEL BRONZE TOP, REMOVABLE GAS TIGHT GASKETED BRASS CLEANOUT PLUG, AND NO HUB INLET.	-	-	4"
P9	FLOOR DRAIN	WATTS FD-200-A OR EQUAL BY ZURN OR JR SMITH	ON GRADE EPOXY COATED CAST IRON FLOOR DRAIN WITH ANCHOR FLANGE, WEEP HOLES, ADJUSTABLE ROUND NICKEL BRONZE STRAINER, AND NO HUB OUTLET. PROVIDE TRAP PRIMER CONNECTION OPTION IF NOTED.	-	-	3"
P10	INTERIOR HOSE BIBB	WOODFORD MODEL Y26 OR EQUAL BY ZURN OF MIFAB	PROVIDE CHECK VALVE AND ANTI-SIPHON PROTECTION IF NOT INTEGRAL TO UNIT. UNIT SHALL BE PROVIDED WITH THE LOOSE TEE KEY OPTION.		1/2"	
P11	MOP SINK	FIAT MSB2424 OR EQUAL BY FLORESTONE OR STERN WILLIAMS	OUTSIDE DIMENSIONS OF 24 X24 X10. 10 INCH HIGH WALLS WITH NOT LESS THAN 1 INCH WIDE. STAINLESS STEEL DRAIN BODY DESIGNED TO PROVIDE FOR A CAULK CONNECTION OR QDC-3 JOINT TO A 3 INCH DRAIN PIPE. INCLUDE A COMBINATION DOME STRAINER AND LINT BASKET OF STAINLESS STEEL. PROVIDE CHICAGO FAUCETS 8235-CP CHROME PLATED SERVICE FAUCET WITH VACUUM BREAKER, INTEGRAL STOPS, ADJUSTABLE WALL BRACE, PAIL HOOK AND 3/4 INCH HOSE THREAD ON SPOUT.	1/2"	1/2"	3"
P12	THERMOSTATIC MIXING VALVE	WATTS LFMMV OR EQUAL BY LAWLER OR LEONARD VALVE	ASSE STANDARD 1069 OR 1070 APPROVED WITH 1/2 INCH FEMALE NPT INLET AND OUTLET CONNECTIONS, BRASS BODY, AND INTEGRAL MOUNTING HOLES. TAMPER RESISTANT THERMOPLASTIC ENCLOSURE. SINGLE REPLACEABLE CARTRIDGE DESIGN.	1/2"	1/2"	-

WATER LINE SIZING TABLES

FIXTURE TYPE	QTY	DRAINAGE FIXTURE UNITS		WATER SUPPLY FIXTURE UNITS				
		EACH	TOTAL	CW	HW	CW & HW	HW TOTAL	TOTAL
WATER CLOSET, PUBLIC, FLUSH TANK	4	4.0	16.0	10.0	0.0	10.0	0.0	40.0
LAVATORY, PUBLIC	2	2.0	4.0	1.5	1.5	2.0	3.0	4.0
SERVICE SINK, OFFICES, ETC.	1	2.0	2.0	2.5	2.25	3.0	2.3	3.0
EMERGENCY FLOOR DRAIN	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0

NOTE: HOSE BIBBS OMITTED FROM CALCULATION DUE TO BEING FOR INTERMEDIATE USE ONLY.

TOTAL DFU	22.0	
TOTAL WSFU	5.3	47.0
GPM	14.1	49.0
OTHER FIXTURES' GPM	0	0
TOTAL GPM	14.1	49.0

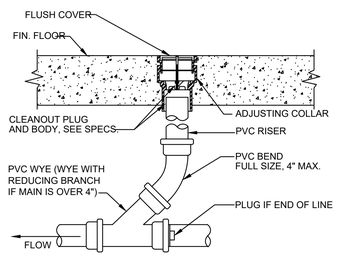
MINIMUM BUILDING DRAIN SIZE	4"
MINIMUM WATER LINE SIZE	2"

ELECTRIC WATER HEATER SCHEDULE

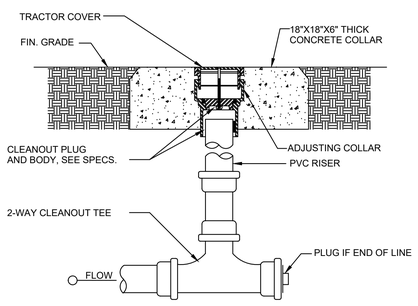
MARK	MFG	MODEL	TANK VOL	INPUT	RECOVERY	SET POINT	POWER		CONNECTIONS		OPTIONS
			GAL	KW	GPH @ 90°F ΔT	°F	VOLTAGE	PHASE	COLD	HOT	
WH1	A.O. SMITH	EJCT-20	20	2.5	11	110	120	1	3/4	3/4	1-5

1. PROVIDE GALVANIZED STEEL SAFETY PAN AND STAND
2. UL 174 LISTED
3. PROVIDE ASME LISTED TEMPERATURE AND PRESSURE RELIEF VALVE
4. MEET OR EXCEED ENERGY FACTOR REQUIREMENTS OF ASHRAE 90.1-2007
5. OR EQUAL BY RHEEM, BRADFORD WHITE, OR STATE

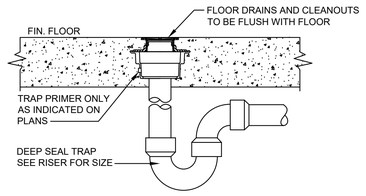
*SELECTION & SIZING NOTE: 11 GPH IS BASED ON 60° ΔT. SYSTEM IS DESIGNED FOR 60° ΔT WITH LIMITED USE OF MOP SINK



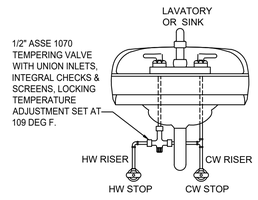
1 FLOOR CLEANOUT DETAIL
Scale: NONE



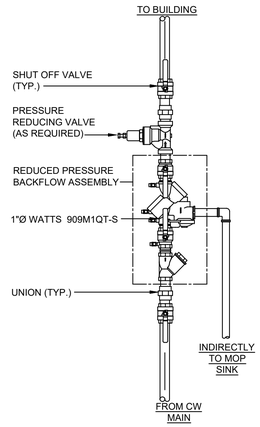
2 GRADE CLEANOUT DETAIL
Scale: NONE



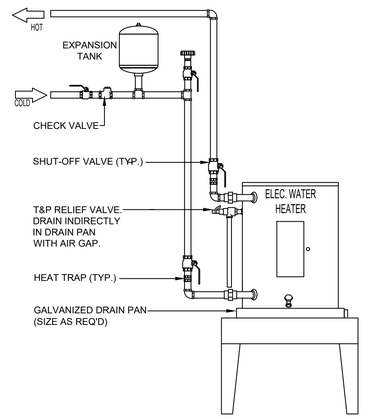
3 FLOOR DRAIN DETAIL
Scale: NONE



4 TEMPERING VALVE
Scale: NONE



5 BACKFLOW PREVENTER DETAIL
Scale: NONE



6 WATER HEATER DETAIL
Scale: NONE

KILIAN
A Stratus Team Company
PO Box 3301, Henderson, NC 27536
www.Kilianengineering.com | P| 252.436.8178
CORPORATE LICENSE C-2277

NORTH CAROLINA PROFESSIONAL SEAL 17304 ENGINEER MICHAEL W. KILIAN
10/02/2025
KILIAN ENGINEERING, INC. CORPORATE SEAL NORTH CAROLINA

NEW CONSTRUCTION FOR:

COVE CREEK PICNIC SHELTER & RESTROOMS

SUGAR GROVE, NC

REVISION

7	6	5	4	3	2	1	0
							DATE

DESCRIPTION

ISSUED: 10/02/2025

ISSUED FOR PERMITTING
DESCRIPTION

DRAWN BY: JCL
CHECKED BY: MWK/REW

SHEET:
PLUMBING SCHEDULES AND DETAILS

SHEET NO.
P-301

PROJECT NO: 250594

GENERAL MECHANICAL NOTES:

ADMINISTRATIVE:

1. THE FOLLOWING ABBREVIATIONS SHALL APPLY TO NOTES AND PLANS:
   PC - PLUMBING CONTRACTOR,
   EC - ELECTRICAL CONTRACTOR,
   MC - MECHANICAL CONTRACTOR,
   GC - GENERAL CONTRACTOR,
   FASC - FIRE ALARM SYSTEM CONTRACTOR,
   AHJ - AUTHORITY HAVING JURISDICTION.
   SMC - CURRENT STATE MECHANICAL CODE (NORTH CAROLINA STATE BUILDING CODE: MECHANICAL CODE)
   SBC - CURRENT STATE BUILDING CODE (NORTH CAROLINA STATE BUILDING CODE: BUILDING CODE)
   SECC- CURRENT STATE ENERGY CONSERVATION CODE (NORTH CAROLINA STATE BUILDING CODE: ENERGY CONSERVATION CODE)
   NFPA - NATIONAL FIRE PROTECTION ASSOCIATION
2. "PROVIDE" MEANS TO FURNISH AND INSTALL. MC SHALL ALSO INSTALL MATERIALS FURNISHED BY OTHERS AND GENERAL CONTRACTOR AS SHOWN ON THE PLANS OR NECESSARY FOR A COMPLETE INSTALLATION.
3. THE MC SHALL BE RESPONSIBLE FOR A COMPLETE AND OPERATING SYSTEM AS DESCRIBED BY THESE PLANS AND SPECIFICATIONS.
4. ALL MATERIALS AND EQUIPMENT SHALL BE DELIVERED TO THE SITE AND UNLOADED BY THE CONTRACTOR AT AN APPROVED LOCATION. THE MC SHALL PROTECT ALL MATERIALS AND EQUIPMENT FROM BREAKAGE, THEFT, AND THE ELEMENTS. ALL MATERIALS AND EQUIPMENT SHALL REMAIN THE PROPERTY OF THE MC UNTIL THE PROJECT HAS BEEN COMPLETED AND TURNED OVER TO THE OWNER.
5. THE MC SHALL INSTALL ALL MATERIALS AND EQUIPMENT IN ACCORDANCE WITH THE SMC AND SBC AND ANY APPLICABLE LOCAL CODES. WHERE A CONFLICT EXISTS BETWEEN THE ABOVE REQUIREMENTS, THE MC SHALL OBTAIN CLARIFICATION FROM THE ENGINEER OR IN THE EVENT ANY PART OF THESE PLANS CONFLICTS WITH THE ABOVE REQUIREMENTS.
6. THE MC SHALL OBTAIN AND PAY FOR ALL PERMITS, FEES, AND INSPECTIONS NECESSARY FOR THE COMPLETION OF THE WORK UNDER THIS CONTRACT.
7. DO NOT SCALE THESE DRAWINGS-REFER TO ARCHITECTURAL SHEETS FOR DIMENSIONS.
8. THE MC SHALL VISIT THE SITE PRIOR TO BIDDING TO BECOME FAMILIAR WITH EXISTING CONDITIONS. THE MC SHALL CONTACT THE ENGINEER TO RESOLVE ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THESE PLANS. THE MC SHALL COORDINATE WITH OTHER TRADES PRIOR TO THE START OF CONSTRUCTION.
9. ALL MECHANICAL MATERIALS SHALL BE NEW AND FREE OF DEFECT AND LISTED AND LABELED BY UL OR AN APPROVED THIRD-PARTY AGENCY. ANY MATERIALS FOUND TO BE DEFECTIVE SHALL BE REPLACED BY THE MC WITHOUT ADDITIONAL COST TO THE OWNER. WHERE A MANUFACTURER AND MODEL NUMBER IS GIVEN, THE CITED EXAMPLE IS INTENDED TO ESTABLISH A STANDARD OF QUALITY AND NOT TO LIMIT PRODUCTS TO A PARTICULAR MANUFACTURER. SUCH EXAMPLES ARE USED TO CONVEY A GENERAL STYLE, TYPE, CHARACTER, AND QUALITY OF THE PRODUCT DESIRED; PRODUCTS DETERMINED TO BE EQUAL BY THE ENGINEER WILL BE ACCEPTED.
10. THESE PLANS ARE DIAGRAMMATIC. THE MC SHALL ADJUST THE LOCATIONS OF EQUIPMENT, DUCTS, REGISTERS, GRILLES, ETC, TO ACCOMMODATE PLANNED AND ENCOUNTERED INTERFERENCES. THE DRAWINGS DO NOT SHOW ALL BENDS, OFFSETS, AND FITTINGS THAT MAY BE REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM. THE MC SHALL MAKE ALLOWANCES FOR SUCH DEVIATIONS AND CONTINGENCIES IN BID TO IMPLEMENT THEM WITHOUT ADDITIONAL COST TO THE OWNER.
11. EC SHALL BE RESPONSIBLE FOR ALL POWER CONNECTIONS TO THE MECHANICAL EQUIPMENT. MC SHALL BE RESPONSIBLE FOR ALL CONTROL WIRING.
12. IT IS THE MC'S RESPONSIBILITY TO VERIFY THAT ITEMS FURNISHED FOR THIS CONTRACT WILL FIT IN THE SPACE AVAILABLE. THE MC SHALL MAKE FIELD MEASUREMENTS AS NECESSARY TO DETERMINE SPACE REQUIREMENTS. IF THE MC MUST ALTER EQUIPMENT DUE TO SPACE CONSIDERATIONS, THE MC SHALL PROVIDE SIZES AND SHAPES THAT FIT THE INTENT OF THESE DRAWINGS AND SPECIFICATIONS.
13. MC SHALL COORDINATE WITH THE EC REGARDING THE ELECTRICAL REQUIREMENTS OF ALL EQUIPMENT BEING PROVIDED.
14. MAINTAIN CLEARANCES FOR ALL EQUIPMENT ACCORDING TO MANUFACTURER'S RECOMMENDATIONS FOR SERVICEABILITY. ALL ROOFTOP EQUIPMENT MUST BE A MINIMUM OF 10 FEET FROM ROOF EDGE.
15. MC SHALL FURNISH A BOUND SET OF OPERATING AND MAINTENANCE INSTRUCTIONS FOR ALL EQUIPMENT TO THE OWNER UPON COMPLETION OF THE PROJECT. MC SHALL PROVIDE ALL DOCUMENTATION TO THE OWNER AS NECESSARY TO SUBMIT FOR FACTORY WARRANTIES.
16. CONTRACTOR SHALL PROTECT ALL HVAC EQUIPMENT FROM CONSTRUCTION AND SHEET ROCK DUST DURING CONSTRUCTION. ALL FILTERS SHALL BE REPLACED WITH NEW AT THE COMPLETION OF THE PROJECT.
17. ALL EQUIPMENT INSTALLED ON ROOF MUST BE WITHIN THE ROOF SCREEN.
18. IF A ROOF PENETRATION IS REQUIRED AND THE ROOF IS UNDER WARRANTY, USE THE AUTHORIZED ROOFER. PROVIDE DOCUMENTATION.
19. ALL PIPING, WIRING, CONDUIT, INSULATION, EQUIPMENT, SUPPORTS, ETC. SHALL BE SUITABLE FOR INSTALLATION IN A RETURN PLENUM AS NECESSARY. COORDINATE WITH OTHER TRADES ON LOCATIONS OF ALL PLENUMS.
20. MC SHALL COORDINATE WITH THE GENERAL CONTRACTOR TO ENSURE ALL APPLICABLE CONSTRUCTION WASTE IS RECYCLED DURING THE CONSTRUCTION PHASE OF THE PROJECT.

METHODS:

1. INSULATE DUCTWORK WITH FIBERGLASS DUCT WRAP; INSTALLED R-VALUE SHALL BE A MINIMUM R-6. COVERINGS AND LININGS, INCLUDING ADHESIVES WHEN USED, SHALL HAVE A FLAME SPREAD INDEX NOT MORE THAN 25 AND A SMOKE-DEVELOPED INDEX NOT MORE THAN 50 WHEN TESTED IN ACCORDANCE WITH ASTM E 84. ALL NEW DUCTWORK SHALL RECEIVE INSULATION ON THE OUTSIDE. INSTALL DUCT WRAP INSULATION WITH FACING OUTSIDE SO THAT TAPE FLAP OVERLAPS INSULATION AND FACING OF ADJACENT PIECE OF DUCT WRAP. INSULATION SHALL BE TIGHTLY BUTTED. FOR RECTANGULAR DUCTS, INSTALL SO INSULATION IS NOT EXCESSIVELY COMPRESSED AT DUCT CORNERS. STAPLE SEAMS APPROXIMATELY 6 INCHES ON CENTER WITH OUTWARD CLINCHING STAPLES. SEAL SEAMS WITH PRESSURE SENSITIVE TAPE MATCHING THE FACING. FOR RECTANGULAR DUCTS 24 INCHES IN WIDTH OR GREATER, SECURE DUCT WRAP TO THE BOTTOM OF THE DUCT WITH MECHANICAL FASTENERS SPACED 18 INCHES ON CENTER TO PREVENT SAGGING OF INSULATION. ADJACENT SECTIONS OF DUCT WRAP SHALL BE TIGHTLY BUTTED WITH THE 2 INCH TAPE FLAP OVERLAPPING. ALL TEARS, PUNCTURES, ETC. OF THE DUCT WRAP INSULATION SHALL BE SEALED WITH TAPE OR MASTIC TO PROVIDE A VAPOR TIGHT SYSTEM. INSULATION SHALL BE BY KNAUF INSULATION, OWENS CORNING CORP, OR CERTAINTEED CORPORATION.
2. VERIFY THAT DUCTS HAVE BEEN TESTED BEFORE APPLYING INSULATION MATERIALS. VERIFY THAT DUCT SURFACES ARE CLEAN, DRY AND FREE OF FOREIGN MATERIAL PRIOR TO INSULATING. DUCT COVERINGS SHALL NOT PENETRATE A WALL OR FLOOR REQUIRED TO HAVE A FIRE-RESISTANCE RATING OR REQUIRED TO BE FIRE BLOCKED.
3. WHERE DUCTS ARE CONNECTED TO EXTERIOR WALL LOUVERS AND DUCT OUTLET IS SMALLER THAN LOUVER FRAME, PROVIDE BLANK-OUT PANELS SEALING LOUVER AREA AROUND DUCT. USE SAME MATERIAL AS DUCT, PAINTED BLACK ON EXTERIOR SIDE. SEAL TO LOUVER FRAME AND DUCT.
4. PROVIDE DUCT ACCESS DOORS FOR INSPECTION AND CLEANING BEFORE AND AFTER FILTERS, COILS, FANS, AUTOMATIC DAMPERS, AT FIRE DAMPERS, COMBINATION FIRE AND SMOKE DAMPERS.
5. CONSTRUCT T's, BENDS, AND ELBOWS WITH RADII OF NOT LESS THAN 1-1/2 TIMES THE WIDTH OF THE DUCT ON CENTERLINE. WHERE NOT POSSIBLE AND WHERE RECTANGULAR ELBOWS MUST BE USED, PROVIDE TURNING VANES.
6. INCREASE DUCT SIZES GRADUALLY, NOT EXCEEDING 15 DEGREES DIVERGENCE; MAXIMUM OF 30 DEGREES DIVERGENCE UPSTREAM OF EQUIPMENT AND 45 DEGREES CONVERGENCE DOWNSTREAM.
7. IT SHALL BE THE RESPONSIBILITY OF THE MC TO SUSPEND AND SUPPORT ALL EQUIPMENT, DUCTWORK, DIFFUSERS, AND OTHER MATERIALS FOLLOWING RECOGNIZED ENGINEERING PRACTICES AND USING STANDARD, COMMERCIALLY ACCEPTED HANGERS AND SUSPENSION EQUIPMENT. ALL HVAC EQUIPMENT SHALL BE SECURELY MOUNTED TO THE BUILDING STRUCTURE AND SHALL NOT RELY ON CEILING OR WALL SURFACES FOR SUPPORT. THE SUPPORT ATTACHMENT SHALL SUPPORT THE WEIGHT OF THE EQUIPMENT PLUS THE WEIGHT OF THE SUPPORT ATTACHMENT ITSELF. SUPPORT FROM THE TOP CHORD OF THE ROOF JOISTS, GIRDERS, AND BEAMS. THE BOTTOM CHORD IS NOT TO BE USED FOR EQUIPMENT OR PIPING SUPPORT. HANGERS SHALL NOT BE ATTACHED TO CORRUGATED STEEL DECKING.
8. DUCTS SHALL BE SUPPORTED IN ACCORDANCE WITH SMACNA AT INTERVALS NOT EXCEEDING 10 FEET. DUCTS 36 INCHES OR LARGER SHALL HAVE TRAPEZE TYPE HANGERS SUSPENDED WITH THREADED ROD. SUPPORT DUCTS FROM BAR JOISTS, GIRDERS, OR BEAMS.
9. CHECK LOCATIONS OF AIR OUTLETS AND INLETS AND MAKE NECESSARY ADJUSTMENTS IN POSITION TO CONFORM WITH ARCHITECTURAL FEATURES, SYMMETRY, AND LIGHTING ARRANGEMENT. COORDINATE WITH SPRINKLER CONTRACTOR IF APPLICABLE.
10. PROVIDE BALANCING DAMPERS AT POINTS ON SUPPLY WHERE BRANCHES ARE TAKEN FROM LARGER DUCTS AS REQUIRED FOR AIR BALANCING. INSTALL MINIMUM 2 DUCT WIDTHS FROM DUCT TAKE-OFF. PROVIDE BALANCING DAMPERS ON DUCT TAKE-OFFS TO DIFFUSERS AND REGISTERS, REGARDLESS OF WHETHER DAMPERS ARE SPECIFIED AS PART OF THE DIFFUSER OR REGISTER ASSEMBLY. ADJUST AIR HANDLING AND DISTRIBUTION SYSTEMS TO PROVIDE DESIGN SUPPLY, RETURN, AND EXHAUST AIR QUANTITIES AT SITE ALTITUDE.
11. MC SHALL INSTALL PROGRAMMABLE THERMOSTATS AS SHOWN ON THE PLANS. THERMOSTAT SHALL BE MOUNTED AT 48 INCHES AFF. THERMOSTATS SHALL MEET THE REQUIREMENTS FOR THERMOSTATIC CONTROLS IN SECTION C403 OF THE SECC.
12. FRESH AIR INTAKES SHALL BE INSTALLED ON ALL UNITS AS SHOWN ON DRAWINGS. MAINTAIN 10 FEET OF DISTANCE BETWEEN FRESH AIR INTAKES AND ALL EXHAUST TERMINATIONS AND PLUMBING VENT THRU ROOFS.
13. MC SHALL INSTALL ALL EXHAUST FANS AND VENT TO THE BUILDING'S EXTERIOR. EC SHALL SWITCH FANS WITH LIGHTS OR ON SEPARATE SWITCH AS SHOWN.
14. P-TRAPS MUST BE INSTALLED ON ALL UNITS. MC SHALL INSTALL AUXILIARY DRAIN PANS UNDER OVERHEAD AIR HANDLERS AND AN AUTOMATIC CUT-OFF FLOAT SWITCH FOR EACH. P-TRAPS AND CONDENSATE LINES SHALL BE 1 INCH. P-TRAPS AND CONDENSATE LINES MAY BE PVC WHERE NOT LOCATED IN PLENUMS; OTHERWISE, THEY SHALL BE TYPE M COPPER.
15. INSTALL BACKDRAFT DAMPERS ON FRESH AIR AND EXHAUST DUCTS WHERE THEY PENETRATE THE THERMAL ENVELOPE PER SECC C402.5.5
16. DUCTS CONNECTING TO A FURNACE SHALL HAVE A CLEARANCE TO COMBUSTIBLES IN ACCORDANCE WITH THE FURNACE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
17. FOR STRUCTURES IN FLOOD HAZARD AREAS, DUCTS SHALL BE LOCATED ABOVE THE DESIGN FLOOD ELEVATION. DUCT SHALL NOT BE INSTALLED IN OR WITHIN 4 INCHES OF THE EARTH.
18. MC SHALL INSTALL FIRE DAMPERS AT EACH PENETRATION OF A RATED WALL AS INDICATED ON THE DRAWINGS OR AS REQUIRED BY THE AUTHORITY HAVING JURISDICTION. FIRE DAMPERS SHALL BE UL LABELED (UL 555), CURTAIN TYPE, WITH INTEGRAL FACTORY SLEEVE AND BLADES LOCATED OUTSIDE THE AIR STREAM. INSTALLATION OF ALL FIRE DAMPERS SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS AND SECTION 607 OF THE SMC. PROVIDE ACCESS PANELS FOR TESTING AND SERVICE AS NECESSARY. MC SHALL PROVIDE RADIATION DAMPERS AND THERMAL BLANKETS FOR ALL PENETRATIONS OF RATED CEILING ASSEMBLIES. RADIATION DAMPERS SHALL BE UL LABELED (UL 555C) AND INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFIC INSTALLATION INSTRUCTIONS. FIRE DAMPERS, COMBINATION FIRE/SMOKE DAMPERS, AND CEILING RADIATION DAMPERS SHALL BE BY RUSKIN, NAILOR, OR LLOYD INDUSTRIES.
19. MC SHALL INSTALL A SMOKE DETECTOR-UL LISTED FOR DUCT INSTALLATION (UL 268A) IN EACH UNIT'S RETURN UPSTREAM OF ANY FILTERS, OUTSIDE AIR CONNECTIONS, OR DECONTAMINATION EQUIPMENT. DUCT SMOKE DETECTORS SHALL BE INSTALLED IN ACCORDANCE WITH NFPA 72. DUCT SMOKE DETECTOR SUPERVISION SHALL COMPLY WITH 606.4.1 OF THE SMC. IF THE BUILDING IS (TO BE) EQUIPPED WITH A FIRE ALARM SYSTEM, THE FIRE ALARM SYSTEM CONTRACTOR SHALL FURNISH AND WIRE ALL DUCT SMOKE DETECTORS. IF THE BUILDING IS NOT PROVIDED WITH A FIRE ALARM SYSTEM, THE MC SHALL FURNISH AND WIRE THE DUCT SMOKE DETECTORS AND A/V DEVICE. IT SHALL BE THE RESPONSIBILITY OF THE MC TO INSTALL ALL SMOKE DUCT DETECTORS PER NFPA AND MFG'S INSTALLATION INSTRUCTIONS REGARDLESS OF WHO FURNISHES THE DEVICES.
20. UNITS PROVIDED WITH ECONOMIZERS SHALL ALSO BE PROVIDED WITH POWERED EXHAUST AND COMPARATIVE ENTHALPY CONTROLS.

MATERIALS:

1. THE MC SHALL PROVIDE ALL HEATING AND COOLING EQUIPMENT AS SCHEDULED ON THE DRAWINGS. ALTERNATES SHALL BE FROM MANUFACTURERS LISTED IN SCHEDULES. THE MC SHALL PROVIDE FACTORY AND FIELD INSTALLED ACCESSORIES AS SCHEDULED OR AS NECESSARY FOR A COMPLETE AND OPERATIONAL HVAC SYSTEM.
2. THE MC SHALL PROVIDE ALL EXHAUST AND SUPPLY FANS AS SCHEDULED OR BY EQUALS LISTED.
3. DUCTWORK IS SHOWN WITH FREE AREA DIMENSIONS. ALL DUCTWORK SHALL BE FABRICATED AND INSTALLED IN ACCORDANCE WITH SMACNA LOW PRESSURE DUCT STANDARD, 2 INCH S.P.
4. EXTERNAL DUCT INSULATION AND FACTORY-INSULATED FLEXIBLE DUCT SHALL BE LEGIBLY PRINTED OR IDENTIFIED AT INTERVALS NOT GREATER THAN 36 INCHES WITH THE NAME OF THE MANUFACTURER, THE THERMAL RESISTANCE R-VALUE AT THE SPECIFIED INSTALLED THICKNESS AND THE FLAME SPREAD AND SMOKE-DEVELOPED INDEXES OF THE COMPOSITE MATERIALS. ALL DUCT INSULATION PRODUCT R-VALUES SHALL BE BASED ON INSULATION ONLY, EXCLUDING AIR FILMS, VAPOR RETARDERS OR OTHER DUCT COMPONENTS, AND SHALL BE BASED ON TESTED C-VALUES AT 75ºF MEAN TEMPERATURE AT THE INSTALLED THICKNESS, IN ACCORDANCE WITH RECOGNIZED INDUSTRY PROCEDURES. THE INSTALLED THICKNESS OF DUCT INSULATION USED TO DETERMINE ITS R-VALUES SHALL BE DETERMINED AS FOLLOWS:
   4.1. FOR DUCT BOARD, DUCT LINER AND FACTORY-MADE RIGID DUCTS NOT NORMALLY SUBJECTED TO COMPRESSION, THE NOMINAL INSULATION THICKNESS SHALL BE USED.
   4.2. FOR DUCT WRAP, THE INSTALLED THICKNESS SHALL BE ASSUMED TO BE 75 PERCENT (25-PERCENT COMPRESSION) OF NOMINAL THICKNESS.
   4.3. FOR FACTORY-MADE FLEXIBLE AIR DUCTS, THE INSTALLED THICKNESS SHALL BE DETERMINED BY DIVIDING THE DIFFERENCE BETWEEN THE ACTUAL OUTSIDE DIAMETER AND NOMINAL INSIDE DIAMETER BY TWO.
5. ALL INSULATION CONTAINING FIBROUS MATERIALS EXPOSED TO AIRFLOW SHALL BE RATED FOR THAT EXPOSURE OR SHALL BE ENCAPSULATED. INSULATING PROPERTIES FOR ALL MATERIALS SHALL MEET OR EXCEED INDUSTRY STANDARDS. POLYSTYRENE PRODUCTS SHALL MEET ASTM C578. ALL INSULATION SHALL HAVE FORMALDEHYDE EMISSIONS NOT GREATER THAN 0.05 PPM. THE MAXIMUM FLAME SPREAD AND SMOKE DEVELOPED INDEX FOR INSULATION SHALL MEET THE REQUIREMENTS OF THE LOCAL CODES AND ORDINANCES ADOPTED BY THE JURISDICTION IN WHICH THE BUILDING IS LOCATED.
6. MASTIC USED TO SEAL DUCTWORK SHALL BE LISTED AND LABELED IN ACCORDANCE WITH UL 181A OR UL 181B MAINTAIN AMBIENT TEMPERATURES AND CONDITIONS REQUIRED BY MANUFACTURER OF ADHESIVES, MASTICS, AND INSULATION CEMENTS. DO NOT INSTALL DUCT SEALANT WHEN TEMPERATURES ARE LESS THAT THOSE RECOMMENDED BY THE SEALANT MANUFACTURER.
7. ALL ADHESIVES AND SEALANTS SHALL HAVE VOC CONTENT BELOW 20 GRAMS PER LITER AND WHICH MEET THE REQUIREMENTS OF THE MANUFACTURER OF THE PRODUCTS BEING ADHERED OR INVOLVED. ADHESIVES AND SEALANTS SHALL CONTAIN NO HEAVY METALS OR FORMALDEHYDE.
8. FACTORY-MADE AIR DUCTS AND CONNECTORS SHALL COMPLY WITH UL 181.
9. FLEXIBLE DUCT SHALL BE UL LISTED CLASS 0 OR CLASS 1, INSULATED, AND COMPLY WITH UL 181. FLEXIBLE DUCT SHALL BE FACTORY FORMED, COMPOSED OF SPIRAL WOUND CORROSION RESISTANT WIRE BONDED TO AN INNER FABRIC LINER. DUCT SHALL BE FACTORY INSULATED WITH A FOIL VAPOR BARRIER JACKET. CONNECT TO RIGID DUCT WITH SPIN-IN FITTING AND DAMPER. FLEXIBLE DUCTS AND AIR CONNECTORS SHALL NOT PASS THROUGH ANY FIRE RESISTANCE RATED ASSEMBLY.
10. THE MC SHALL PROVIDE ALL DIFFUSERS GRILLES, LOUVERS, AND OTHER AIR DISTRIBUTION OUTLETS AND INLETS. LOUVERS, GRILLES, AND DIFFUSERS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. FOR LAY-IN CEILINGS, INSTALL SUPPORT FROM THE STRUCTURE FOR EACH DIFFUSER OR DAMPER. AIR DISTRIBUTION OUTLETS AND INLETS SHALL BE AS SCHEDULE OR ALTERNATES LISTED.
11. AIR FILTERS SHALL BE INSTALLED IN ACCORDANCE WITH SECTION 605 OF THE SMC
12. THE MC SHALL PROVIDE ALL REFRIGERATION PIPING. ALL PIPE AND FITTINGS SHALL BE TYPE ACR HARD COPPER TUBING WITH SWEAT FITTINGS. REFRIGERATION LINES SHALL BE RUN NEATLY. WHERE A GROUP OF LINES ARE RUN, TRAPEZE HANGERS MAY BE USED. DO NOT USE CHAIN OR WIRE HANGERS. WRAP TUBING WITH RUBBER TAPE AT EACH CLAMP OR HANGER. FOR COVERED PIPES, HANGERS SHALL FIT AROUND THE OUTSIDE OF THE COVERING WITH 12 GAUGE GALVANIZED STEEL SHIELDS OF A LENGTH EQUAL TO THE OUTSIDE DIAMETER OF THE INSULATION AND COVERING 3/4 OF THE CIRCUMFERENCE OF THE INSULATION. SAGS SHALL NOT BE PERMISSIBLE. HORIZONTAL LINES SHALL PITCH DOWN NOT LESS THAN 1 INCH IN 40 FEET. INSULATE WITH 1 INCH CLOSED CELL ARMAFLEX TYPE INSULATION WITH A FLAME DENSITY RATING LESS THAN 25 AND A SMOKE DENSITY RATING LESS THAN 50. ALL JOINTS AND SPLICES IN INSULATION SHALL BE TAPED AND AIRTIGHT. SOLDER REFRIGERATION LINES USING 15 PERCENT SILVER SOLDER AND EVACUATE LINES TO 300 MICRONS. PROVIDE MOISTURE INDICATING SIGHT GLASS AND FILTER DRYER IN LIQUID LINE. PROVIDE OIL TRAPS AND DOUBLE RISERS IN REFRIGERANT SUCTION AND HOT GAS LINES WHERE REQUIRED TO PREVENT OIL SLUGGING AT THE COMPRESSOR AND INSURE PROPER LUBRICATION. MC SHALL BE RESPONSIBLE FOR SEALING LINE SET PENETRATIONS OF ANY RATED ASSEMBLIES IN ACCORDANCE WITH A SYSTEM LISTED IN THE UL DIRECTORY FOR THE SPECIFIC ASSEMBLY BEING PENETRATED. SEE ARCHITECTURAL PLANS FOR A LIST OF ALL UL FIRE RATED ASSEMBLIES.

KILIAN
A Stratus Team Company
PO Box 3301, Henderson, NC 27536
www.kilianengineering.com | P| 252.438.8178
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NORTH CAROLINA PROFESSIONAL SEAL 17304 ENGINEER MICHAEL W. KILIAN
10/02/2025
KILIAN ENGINEERING CORPORATE SEAL NORTH CAROLINA

NEW CONSTRUCTION FOR:
COVE CREEK PICNIC SHELTER & RESTROOMS
SUGAR GROVE, NC

REVISION

7	6	5	4	3	2	1
						10/02/2025

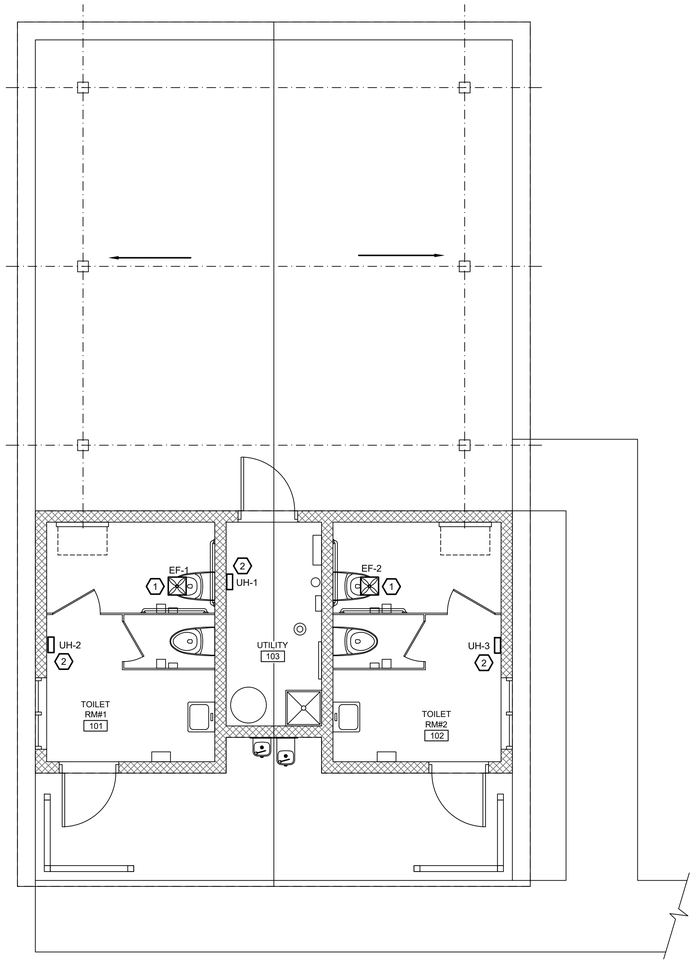
ISSUED: 10/02/2025
ISSUED FOR PERMITTING
DESCRIPTION

DRAWN BY: RSB
CHECKED BY: MWK/REW

SHEET:
MECHANICAL NOTES

SHEET NO.
M-001

PROJECT NO: 250594



1 MECHANICAL PLAN
Scale: 1/4" = 1'-0"

MECHANICAL PLAN HEX NOTES
1. ROUTE 6"Ø EXHAUST DUCT TO ROOF WITH APPROVED CAP.
2. INSTALL UNIT HEATER PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE WITH BUILT-IN THERMOSTAT, DISCONNECT, AND WALL MOUNTING KIT.

ELECTRIC HEATER SCHEDULE

MARK	MFG/Model #	AIR FLOW	HEATER	VOLT/PH	FLA	MOCP	NOTES
		CFM	KW		AMPS	AMPS	
UH-1	MARKEL HF3324TD-RP	175	2	240/1	-	8.3	1-3
UH-2	MARKEL HF3325TD-RP	175	3	240/1	-	12.5	1-3
UH-3	MARKEL HF3325TD-RP	175	3	240/1	-	12.5	1-3

1. BUILT-IN THERMOSTAT
2. BUILT-IN DISCONNECT SWITCH
3. PROVIDE WITH SURFACE MOUNTING SLEEVE KIT (FOR IN WALL INSTALLATION)

EXHAUST FAN SCHEDULE

MARK	MFG/MODEL #	TYPE	ESP (in WG)	CFM	VOLT/PH	FLA	SONES	NOTES
EF-1	GREENHECK SP-A200	CEILING	0.40	179	120/1	0.43	3	1-3

1. PROVIDE WITH PITCHED ROOF CURB & CAP FOR FLAT OR SLOPED ROOF, OR HOODED WALL WITH BACKDRAFT DAMPER CAP AS APPLICABLE
2. PROVIDE WITH SQUARE TO ROUND DUCT ADAPTER AS NECESSARY
3. OR EQUAL BY LOREN COOK OR PENNBARRY OR TWIN CITY

MECHANICAL DEVICE LEGEND		
SYMBOL	DESCRIPTION	REMARKS
T	THERMOSTAT	LOCATION MOUNT AT 48" A.F.F

MECHANICAL SYSTEM, SERVICE SYSTEMS, AND EQUIPMENT

METHOD OF COMPLIANCE:	PRESCRIPTIVE
THERMAL ZONE:	ZONE 5A
EXTERIOR DESIGN CONDITIONS:	
HEATING DESIGN DRY BULB	15.1°F
AT 50° SET POINT FOR HEATING ONLY	
INTERIOR DESIGN CONDITIONS:	
HEATING DESIGN DRY BULB	50°F
RESTROOM HEATING LOAD:	4,751 BTU/H
UTILTY ROOM HEATING LOAD:	3,313 BTU/H
MECHANICAL SPACING CONDITIONING SYSTEM:	
UNITARY	
DESCRIPTION OF UNIT(S)	(1) - 2KW ELECTRIC HEATER, (2) - 3KW ELECTRIC HEATER
BOILER	N/A
TOTAL BOILER OUTPUT	N/A
CHILLER	N/A
TOTAL CHILLER CAPACITY	N/A
EQUIPMENT EFFICIENCIES:	SEE SCHEDULES
EQUIPMENT SCHEDULES WITH MOTORS (MECHANICAL SYSTEMS):	SEE SCHEDULES
DESIGNER STATEMENT:	

TO THE BEST OF MY KNOWLEDGE, THE MECHANICAL DESIGN FOR THIS BUILDING COMPLIES WITH MECHANICAL AND EQUIPMENT REQUIREMENTS OF THE STATE BUILDING CODE AND ENERGY CONSERVATION CODE

2 MECHANICAL SCHEDULES

KILIAN
A Stratus Team Company
PO Box 3301, Henderson, NC 27536
www.Kilianengineering.com | P| 252.436.8178
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NORTH CAROLINA PROFESSIONAL SEAL 17304 ENGINEER MICHAEL W. KILIAN
10/02/2025
KILIAN ENGINEERING, INC CORPORATE SEAL NORTH CAROLINA

NEW CONSTRUCTION FOR:
COVE CREEK PICNIC SHELTER & RESTROOMS
SUGAR GROVE, NC

REVISION

7	6	5	4	3	2	1	SET

DESCRIPTION

ISSUED: 10/02/2025

ISSUED FOR PERMITTING
DESCRIPTION

DRAWN BY: RSB
CHECKED BY: MWK/REW

SHEET:
MECHANICAL PLAN & SCHEDULES

SHEET NO.
M-101

PROJECT NO: 250594

GENERAL ELECTRICAL NOTES:

ADMINISTRATIVE:

1. THE FOLLOWING ABBREVIATIONS SHALL APPLY TO NOTES AND PLANS:

   PC - PLUMBING CONTRACTOR,

   EC - ELECTRICAL CONTRACTOR,

   MC - MECHANICAL CONTRACTOR,

   GC - GENERAL CONTRACTOR,

   FASC - FIRE ALARM SYSTEM CONTRACTOR,

   AHJ - AUTHORITY HAVING JURISDICTION

   NECA- NATIONAL ELECTRICAL CONTRACTORS ASSOCIATION

   NEC- NATIONAL ELECTRICAL CODE

   SBC- CURRENT STATE BUILDING CODE (NORTH CAROLINA STATE BUILDING CODE: BUILDING CODE)

   SFC- CURRENT STATE BUILDING CODE: FIRE CODE (NORTH CAROLINA STATE BUILDING CODE: FIRE PREVENTION CODE)
2. "PROVIDE" MEANS TO FURNISH AND INSTALL. THE EC SHALL ALSO INSTALL MATERIALS AND EQUIPMENT FURNISHED BY OTHERS AND THE GENERAL CONTRACTOR AS REQUIRED.
3. EC SHALL PROVIDE LABOR, MATERIALS, EQUIPMENT, AND SERVICES NECESSARY AND REASONABLY INCIDENTAL TO INSURE A COMPLETE AND OPERATIONAL ELECTRICAL SYSTEM IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS. MINOR ITEMS, ACCESSORIES, AND DEVICES REASONABLY INFERABLE AS NECESSARY FOR THE COMPLETION AND PROPER OPERATION OF ANY ELECTRICAL SYSTEM SHALL BE PROVIDED BY THE EC.
4. WORKMANSHIP SHALL BE IN ACCORDANCE WITH NECA 1 "STANDARD PRACTICE FOR GOOD WORKMANSHIP IN ELECTRICAL CONTRACTING."
5. ALL MATERIALS AND EQUIPMENT SHALL BE DELIVERED TO THE SITE AND UNLOADED BY THE EC AT AN APPROVED LOCATION. THE EC SHALL PROTECT ALL MATERIALS AND EQUIPMENT FROM BREAKAGE, THEFT, AND THE ELEMENTS. ALL MATERIALS AND EQUIPMENT SHALL REMAIN THE PROPERTY OF THE EC UNTIL THE PROJECT HAS BEEN COMPLETED AND TURNED OVER TO THE OWNER.
6. THE EC SHALL OBTAIN AND PAY FOR ALL PERMITS, FEES, AND INSPECTIONS NECESSARY FOR THE COMPLETION OF THE WORK UNDER THIS CONTRACT.
7. DO NOT SCALE THESE DRAWINGS-REFER TO ARCHITECTURAL SHEETS FOR DIMENSIONS.
8. TRADE NAMES AND MANUFACTURERS ARE SPECIFIED TO ESTABLISH A QUALITY STANDARD. SUBSTITUTIONS SHALL BE PERMITTED IF APPROVED BY THE ENGINEER PRIOR TO INSTALLATION. ALL LISTED MODEL NUMBERS SHALL BE VERIFIED WITH THE MANUFACTURER FOR PROPER APPLICATION OF EQUIPMENT.
9. THE EC SHALL VISIT THE SITE PRIOR TO BIDDING TO BECOME FAMILIAR WITH EXISTING CONDITIONS. THE EC SHALL CONTACT THE ENGINEER TO RESOLVE ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THESE PLANS. THE EC SHALL COORDINATE WITH OTHER TRADES PRIOR TO THE START OF CONSTRUCTION.
10. GROUNDING AND BONDING SHALL BE PER NEC ARTICLE 250. THE RACEWAY SYSTEM SHALL NOT BE RELIED UPON FOR GROUNDING CONTINUITY. A GREEN EQUIPMENT GROUNDING CONDUCTOR, SIZED PER NEC TABLE 250-122, SHALL BE RUN IN ALL POWER RACEWAYS. FOR NON-ISOLATED GROUND CIRCUITS PROVIDE ONE EQUIPMENT GROUNDING CONDUCTOR PER CONDUIT RUN. FOR ISOLATED GROUND CIRCUITS, PROVIDE ONE NEUTRAL AND ONE ISOLATED GROUND WIRE FOR EACH CIRCUIT; IN ADDITION, PROVIDE ONE EQUIPMENT GROUNDING CONDUCTOR PER CONDUIT RUN. MAIN BONDING JUMPERS AND SYSTEM BONDING JUMPERS SHALL BE INSTALLED IN ACCORDANCE WITH 250.28 OF THE NEC. FOR BUILDINGS OR STRUCTURES SUPPLIED BY FEEDERS OR BRANCH CIRCUITS, GROUNDING AND BONDING SHALL BE IN ACCORDANCE WITH NEC 250.32. SEPARATELY DERIVED AC SYSTEMS SHALL BE GROUNDED IN ACCORDANCE WITH NEC 250.30. RESISTANCE TO GROUND SHALL NOT EXCEED 25 OHMS; ADDITIONAL GROUNDING ELECTRODES SHALL BE INSTALLED PER 250.56 AS NECESSARY.
11. ALL MATERIALS AND EQUIPMENT SHALL COMPLY WITH THE UNDERWRITERS' LABORATORIES, INC. STANDARDS OR HAVE UL APPROVAL, OR BEAR UL RE-EXAMINATION LISTING WHERE SUCH APPROVAL HAS BEEN ESTABLISHED FOR THE TYPE OF DEVICE IN QUESTION.
12. CONDUCTORS, FUSES, CIRCUIT BREAKERS, AND DISCONNECT SWITCHES SHOWN ON THESE PLANS HAVE BEEN SIZED FOR THE SPECIFIED EQUIPMENT. BEFORE ORDERING ELECTRICAL EQUIPMENT, THE EC SHALL COORDINATE WITH OTHER CONTRACTORS ON THE SITE AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES SHOULD CONDUCTOR, CIRCUIT BREAKER, OR FUSE SIZES REQUIRE CHANGE.
13. THE EC SHALL COORDINATE WITH THE GC TO ENSURE THE FOLLOWING MATERIALS ARE RECYCLED DURING THE CONSTRUCTION PHASE OF THE PROJECT: LIGHT FIXTURES, INCLUDING PROPER DISPOSAL OF BALLASTS, FLUORESCENT LIGHT BULBS, AND TRANSFORMERS, WIRING AND ELECTRICAL EQUIPMENT, AND INSULATION. WASTE MATERIALS CONTAINING LEAD, ASBESTOS, PCBs (FLUORESCENT LAMP BALLASTS), OR OTHER HARMFUL SUBSTANCES SHALL BE HANDLED AND DISPOSED OF IN ACCORDANCE WITH FEDERAL AND STATE LAWS AND REQUIREMENTS CONCERNING HAZARDOUS WASTE.
14. ALL WORK SHALL CONFORM TO NEC, SBC, AND ALL APPLICABLE LOCAL CODES.
15. THE EC SHALL ALSO COORDINATE WITH THE GC REGARDING THE BONDING OF THE FOOTING REBAR, SO THAT IT WILL BE IN PLACE AND READY AT TIME OF FOOTING INSPECTION.

METHODS:

1. EC SHALL REVIEW THE MECHANICAL PLANS TO ESTABLISH POINTS OF CONNECTION AND THE EXTENT OF THE ELECTRICAL WORK TO BE PROVIDED IN THE CONTRACT.
2. ALL CIRCUIT BREAKERS FEEDING HVAC EQUIPMENT SHALL BE HACR BREAKERS. ALL BRANCH CIRCUIT CONDUCTORS SHALL BE MINIMUM #12 AWG IN 3/4 in CONDUIT. EACH MULTI-WIRE BRANCH CIRCUIT SHALL BE PROVIDED WITH A MEANS TO SIMULTANEOUSLY DISCONNECT ALL UNGROUNDED CONDUCTORS AT THE SOURCE PER NEC 210.4(B). GROUP ALL CONDUCTORS OF EACH MULTI-WIRE BRANCH CIRCUIT PER 210.4(D) WITH WIRE TIES OR SIMILAR MEANS. DO NOT EXCEED THREE HOMERUNS PER CONDUIT. DO NOT INSTALL ISOLATED GROUND AND NON-ISOLATED GROUND CIRCUITS IN THE SAME CONDUIT. INSTALL CONDUCTORS OF DIFFERENT VOLTAGES IN SEPARATE CONDUITS.
3. ALL LIGHT FIXTURES SHALL BE SUPPORTED INDEPENDENTLY OF THE SUSPENDED CEILING. COORDINATE LIGHTING LAYOUT WITH CEILING GRID, MECHANICAL EQUIPMENT, DUCTWORK AND SPRINKLER HEADS AS NECESSARY. SEE REFLECTED CEILING PLAN FOR DETAILS. FLUORESCENT FIXTURES UTILIZING DOUBLE-ENDED LAMPS MUST HAVE A DISCONNECTING MEANS COMPLYING WITH NEC 410.130(G).
4. MOUNT LIGHT SWITCHES AT 48 in AFF. MULTIPLE SWITCHES AT SAME LOCATION SHALL BE UNDER ONE WALL PLATE. VERIFY WALL PLATE COLOR AND MATERIAL WITH THE ARCHITECT/OWNER. INSTALL SWITCHES WITH off POSITION DOWN. ALL SWITCHES SHALL BE HEAVY DUTY, IVORY PLASTIC WITH TOGGLE HANDLE, RATED 120-277V AC, AND COMPLYING WITH NEMA WD 6 AND WD 1. SWITCHES SHALL BE BY COOPER WIRING DEVICES, LEVITON MANUFACTURING, PASS & SEYMOUR, OR HUBBELL. PROVIDE BOX DEVICE PARTITION/DIVIDERS FOR MULTI-GANG BOXES FOR COMPLIANCE WITH NEC 404.8(B).
5. EC SHALL PROVIDE FIRE-STOPPING AT ALL ELECTRICAL PENETRATIONS OF RATED FLOORS AND WALLS TO PRESERVE OR RESTORE THE FIRE-RESISTANCE RATING. SEAL PENETRATIONS USING A UL LISTED SYSTEM FOUND IN THE UL DIRECTORY SPECIFIC TO THE UL LISTING OF THE ASSEMBLY BEING PENETRATED. SEE ARCHITECTURAL PLANS FOR UL RATED ASSEMBLIES SPECIFIC TO THIS PROJECT.
6. EC SHALL PROVIDE GFCI RECEPTACLES IN KITCHENS, RESTROOMS, OUTDOORS, AND IN SHOP AREAS AS REQUIRED BY NEC. REFRIGERATORS AND WATER COOLERS MUST HAVE A DEDICATED GFCI BREAKER. EACH OUTDOOR HVAC UNIT MUST HAVE A GFCI RECEPTACLE WITHIN 25 FEET FOR SERVICING. GFCI RECEPTACLES SHALL CONFORM TO UL 943 CLASS A AND UL 498 STANDARDS. SHOW WINDOW RECEPTACLES SHALL BE PROVIDED IN ACCORDANCE WITH 210.62 OF THE NEC. RECEPTACLES SHALL BE BY COOPER WIRING DEVICES, LEVITON MANUFACTURING, PASS & SEYMOUR, OR HUBBELL. ALL RECEPTACLES SHALL BE 125V RATED, HEAVY DUTY, AND COMPLY WITH NEMA WD 6 AND WD 1.
7. LOCATIONS AND HEIGHTS OF ALL WALL-MOUNTED DEVICES SHALL BE COORDINATED WITH THE ARCHITECT PRIOR TO INSTALLATION.
8. CONCEAL ALL CONDUIT EXCEPT IN MECHANICAL ROOMS OR UNFINISHED AREAS AS NOTED. USE EMT CONDUIT FOR ALL BRANCH CIRCUITS AND FEEDERS INSIDE THE BUILDING. TYPE MC CABLE AND TYPE AC CABLE MAY BE INSTALLED WITHIN WALLS IF ALL NEUTRAL WIRES, ISOLATED GROUND WIRES, AND EQUIPMENT GROUND WIRES AS LISTED ABOVE ARE CONTAINED IN THE CABLE. *** TYPE NM CABLE MAY BE USED FOR INTERIOR BRANCH CIRCUITS IN NORMALLY DRY LOCATIONS SUBJECT TO THE RESTRICTIONS OF NEC 334.10 AND 334.12. TYPE NM CABLE CONDUCTORS SHALL BE DERATED PER NEC 334.80. *** FLEXIBLE CONNECTIONS TO MOTORS AND OTHER EQUIPMENT SHALL BE MADE USING WEATHERPROOF FLEXIBLE CONDUIT. FOR LAY-IN LIGHT FIXTURES, USE MAXIMUM OF SIX (6) FEET OF FLEXIBLE MC CABLE (OR THE FLEXIBLE CONDUIT PROVIDED BY THE FIXTURE MANUFACTURER). SCHEDULE 40 PVC CONDUIT MAY BE USED FOR THE SECONDARY UNDERGROUND SERVICE, UNDERGROUND TELEPHONE SERVICE, AND BRANCH AND FEEDER CIRCUITS UNDER SLAB OR EXTERIOR TO THE BUILDING. EXPOSED EXTERIOR CONDUIT SHALL BE SCHEDULE 80 PVC. ALL UNDERGROUND RACEWAYS SHALL BE IDENTIFIED WITH UNDERGROUND LINE MARKING TAPE 6-8 in BELOW GRADE DIRECTLY ABOVE THE RACEWAY. PROVIDE PULL WIRE IN EMPTY CONDUITS. UPSIZE CONDUIT FROM MINIMUM SIZE AS NECESSARY FOR LONGER PULLS. UNDERGROUND RACEWAYS THAT STUB INTO THE BOTTOM OF SWITCHBOARDS, OUTDOOR TRANSFORMERS, GENERATORS, ETC., SHALL RISE AT LEAST 2 in ABOVE THE FINISHED SLAB TO PREVENT WATER FROM DRAINING INTO THE RACEWAYS. RACEWAYS THAT PENETRATE EXTERIOR WALLS OR INTERIOR PARTITIONS SEPARATING SPACES THAT WILL BE AT SIGNIFICANTLY DIFFERENT TEMPERATURES SHALL BE SEALED IN ACCORDANCE WITH ARTICLES 300.5(G), 300.7(A), AND 300.50(F) OF THE NEC. ROUTE CONDUIT IN AND UNDER SLAB FROM POINT-TO-POINT. ROUTE EXPOSED CONDUIT AND CONDUIT INSTALLED ABOVE ACCESSIBLE CEILINGS PARALLEL AND PERPENDICULAR TO WALLS. COMPLETELY AND THOROUGHLY SWAB ALL RACEWAYS BEFORE INSTALLING WIRE. PULL ALL CONDUCTORS INTO EACH RACEWAY AT ONE TIME. USE A SUITABLE WIRE PULLING LUBRICANT FOR BUILDING WIRE #4 AWG AND LARGER.
9. CABLES, RACEWAYS, OR BOXES, INSTALLED IN EXPOSED OR CONCEALED LOCATIONS UNDER METAL-CORRUGATED SHEET ROOF DECKING, SHALL BE INSTALLED AND SUPPORTED SO THERE IS NOT LESS THAN 1-1/2 in MEASURED FROM THE LOWEST SURFACE OF THE ROOF DECKING TO THE TOP OF THE CABLE, RACEWAY, OR BOX. A CABLE, RACEWAY, OR BOX SHALL NOT BE INSTALLED IN CONCEALED LOCATIONS IN METAL-CORRUGATED, SHEET DECKING-TYPE ROOF. SEE NEC 300.4(E)
10. THE EC SHALL PROVIDE ALL OUTLET, JUNCTION, PULL BOXES, FITTINGS, AND SUPPORTS. ALL OUTLET AND JUNCTION BOXES SHALL BE GALVANIZED STEEL TYPE BY APPLETON, STEEL CITY, OR RACO. EXTERIOR BOXES SHALL BE TYPE FS. VAPORTITE BOXES SHALL BE TYPE GS. WHERE SURFACE MOUNTED BOXES ARE USED, THOSE BOXES AND THEIR FACEPLATES SHALL HAVE ROUNDED CORNERS. BOXES INSTALLED IN FLOORS SHALL BE RATED FOR THE APPLICATION. MOUNT JUNCTION AND OUTLET BOXES FLUSH WITH FINISH SURFACES UNLESS OTHERWISE NOTED. WHERE MOUNTING HEIGHTS ARE GIVEN, THEY SHALL BE MEASURED FROM THE FINISHED FLOOR TO THE CENTER OF THE BOX. ALL BOXES SHALL BE SIZED PER NEC ARTICLE 314. ALL OUTLET AND JUNCTION BOXES SHALL HAVE A COVER PLATE, PROVIDED BY THE EC. OUTLET BOXES IN RATED WALLS SHALL BE INSTALLED IN ACCORDANCE WITH SBC 714.3.2 (MAXIMUM BOX SIZE IS 16 SQUARE in AND MAXIMUM OF SIX (6) BOXES PER 100 SQUARE FEET). INSTALL OUTLET BOXES IN RATED WALLS SUCH THAT OPENINGS OCCUR IN ONE SIDE ONLY WITHIN ANY GIVEN STUD SPACE. ALL CLEARANCES BETWEEN THE OUTLET BOX AND THE GYPSUM BOARD SHALL BE FILLED WITH JOINT COMPOUND OR OTHER APPROVED FIRE STOP MATERIAL. FLUSH MOUNTED JUNCTION BOXES IN ADJACENT ROOMS SHALL NOT BE MOUNTED BACK-TO-BACK. SURFACE MOUNTED FIXTURES SHALL BE FED THROUGH FLUSH MOUNTED 4x4 OCTAGONAL OR SQUARE BOXES.
11. ALL CONDUIT, BOXES, AND ELECTRICAL EQUIPMENT SHALL BE FIRMLY AND SECURELY FASTENED TO OR SUPPORTED FROM THE BUILDING STRUCTURAL MEMBERS OR EMBEDDED IN CONCRETE OR MASONRY. ELECTRICAL SUPPORTS SHALL NOT BE ATTACHED TO DUCTWORK, PIPING, OR THEIR SUPPORTS. HANGERS SHALL BE CATALOG ITEMS COMPATIBLE WITH AND SUITABLE FOR THE INTENDED USE. FOR METAL ROOF DECK INSTALLATIONS, 1 in EMT CONDUIT MAXIMUM AND 4 in JUNCTION BOXES MAXIMUM MAY BE SUPPORTED BY DECKING. THE SUSPENDED CEILING SYSTEM SHALL NOT BE USED FOR THE SUPPORT OF ELECTRICAL RACEWAY SYSTEMS OR SUPPORT OF COMMUNICATIONS OR DATA SYSTEMS WIRING. CONTRACTOR SHALL COMPLY WITH 1613 OF THE SBC.
12. ALL TELEPHONE AND COMMUNICATIONS OUTLETS AND RACEWAYS ARE ROUGH-INS ONLY. EACH TELEPHONE AND COMMUNICATIONS OUTLET SHALL BE A 4 in SQUARE BY 2-1/8 in DEEP BOX WITH 3/4 in KNOCK-OUTS AND A 3/4 in CONDUIT STUBBED FROM THE OUTLET BOX TO ABOVE THE CEILING. PROVIDE A NON-METALLIC INSULATING BUSHING ON ALL CONDUITS STUBBED ABOVE THE CEILING. PROVIDE A BLANK COVER PLATE ON ALL OUTLET BOXES.
13. EC SHALL INSTALL DISCONNECT SWITCHES IN SIGHT OF ALL HARDWIRED EQUIPMENT AND APPLIANCES OR PROVIDE BREAKERS CAPABLE OF BEING LOCKED IN THE OPEN POSITION PER NEC 422.31. FOR MOTOR DRIVEN APPLIANCES, PROVIDE A DISCONNECTING MEANS PER NEC 422.31 AND 430 PART IX. WHERE AN INDIVIDUAL DISCONNECT SWITCH, CIRCUIT BREAKER, STARTER, ETC, IS SHOWN ON THE PLANS ADJACENT TO ITS LOAD AND NOT LOCATED ON A WALL, PROVIDE NECESSARY MATERIALS AND LABOR TO SUPPORT THE DEVICE.
14. EC SHALL FIELD IDENTIFY ALL SWITCH BOARD, PANEL BOARDS, CONTROL PANELS, METER SOCKETS, ETC., TO WARN QUALIFIED PERSONS OF POTENTIAL ELECTRICAL ARC FLASH HAZARDS PER 110.16 OF NEC.
15. EC SHALL PROVIDE NAMEPLATES FOR IDENTIFICATION OF ALL EQUIPMENT, SWITCHES, PANELS, ETC. THE NAMEPLATES SHALL BE LAMINATED PHENOLIC PLASTIC, BLACK FRONT, AND BACK WITH WHITE CORE, WHITE ENGRAVED LETTERS (1/4 in MINIMUM) ETCHED INTO THE WHITE CORE. EC SHALL PROVIDE A TYPE WRITTEN DIRECTORY CARD THAT ACCURATELY IDENTIFIES CIRCUITS INSIDE EACH PANEL. HANDWRITTEN LABELS ARE NOT ACCEPTABLE.
16. IN ACCORDANCE WITH SECTION 510 OF THE SFC, TESTING WILL BE REQUIRED TO DETERMINE SATISFACTORY FIRST RESPONDER RADIO SIGNAL STRENGTH INSIDE EACH BUILDINGS ON SITE. TESTING WILL NEED TO EITHER BE COMPLETED BY A COUNTY FIRE INSPECTOR (OBTAIN BY REQUESTING A COURTESY INSPECTION) OR A CERTIFIED 3RD PARTY. TESTING SHALL TAKE PLACE AT BOTH 80% PROJECT COMPLETION AND AGAIN AT 100% COMPLETION. IF UNACCEPTABLE SIGNAL DEGRADATION IS PRESENT AT EITHER 80% OR 100% INSPECTION, THEN AN ACCEPTABLE BOOSTER SYSTEM SHALL BE ADDED TO THE BUILDING DESIGN AT THAT TIME.
17. COLOR CODE CONDUCTORS PER NEC. FEEDERS SHALL BE IDENTIFIED IN ACCORDANCE WITH NEC 215.12. USE BLACK AND RED FOR PHASES A AND B RESPECTIVELY ON 120/240 VOLT SINGLE-PHASE SYSTEMS AND WHITE FOR THE NEUTRAL. USE BLACK, RED, AND BLUE FOR PHASES A, B, AND C RESPECTIVELY ON 208Y/120 VOLT THREE-PHASE Y SYSTEMS AND WHITE FOR THE NEUTRAL. ISOLATED GROUND WIRES SHALL BE GREEN WITH YELLOW BANDS OR STRIPES. USE BROWN, ORANGE, AND YELLOW FOR PHASES A, B, AND C RESPECTIVELY FOR 480Y/277 VOLT THREE-PHASE Y SYSTEMS AND GRAY FOR THE NEUTRAL. ON 4 WIRE DELTA CONNECTED SYSTEMS WHERE THE MIDPOINT OF ONE PHASE WINDING IS GROUNDED, THE PHASE CONDUCTOR HAVING THE HIGHER PHASE TO GROUND VOLTAGE SHALL BE PERMANENTLY IDENTIFIED WITH AN OUTER FINISH THAT IS ORANGE IN COLOR; THIS IDENTIFICATION SHALL BE MADE AT EACH POINT WHERE A CONNECTION IS MADE. COLORS SHALL BE FACTORY APPLIED FOR CONDUCTORS #6 AWG AND SMALLER. ALL EQUIPMENT GROUNDING CONDUCTORS SHALL BE GREEN IN COLOR AND MINIMUM #12 AWG. THE EC SHALL PROVIDE PLENUM RATED CABLE FOR ANY ELECTRICAL, TELEPHONE, COMMUNICATION, OR OTHER CABLE THAT ENTERS CEILING RETURN PLENUMS.
18. ABANDONED CONDUIT AND BOXES SHALL HAVE ALL ELECTRICAL WIRING REMOVED COMPLETELY AND NOT JUST "MADE SAFE." CONDUIT AND BOXES SHALL BE REMOVED WHERE PRACTICAL WITHOUT CREATING ADDITIONAL DEMOLITION/RESTITUTION WORK FOR OTHER TRADES.
19. WHERE CONDUCTORS ARE RUN IN PARALLEL, THE EC SHALL COMPLY WITH NEC 310.10(G).
20. ALL EQUIPMENT LOCATED UNDER KITCHEN HOODS SHALL BE WIRED FROM SHUNT TRIP BREAKERS.
21. ISOLATED-GROUND TYPE RECEPTACLES SHALL BE INSTALLED IN ACCORDANCE WITH NEC 250.146(D). ISOLATED GROUND RECEPTACLES SHALL BE ORANGE IN COLOR.
22. ALL RECEPTACLES LOCATED WITHIN DWELLING UNITS SHALL HAVE AFCI PROTECTION IN ACCORDANCE WITH SECTION 210.12 OF THE NEC. RECEPTACLES IN DWELLING UNITS SHALL BE LISTED TAMPER-RESISTANT PER NEC 406.12.
23. PROVIDE AND INSTALL LISTED TAMPER PROOF RECEPTACLES IN CLASSROOMS.
24. IN PATIENT CARE AREAS, EQUIPMENT GROUNDING SHALL COMPLY WITH NEC 517.13 (THIS INCLUDES LIGHTS AND SWITCHES). THE METAL RACEWAY SYSTEM, METALLIC CABLE ARMOR, OR SHEATH ASSEMBLY SHALL ITSELF QUALIFY AS AN EQUIPMENT GROUNDING CONDUCTOR PER NEC 250.118.
25. IN ASSEMBLY AREAS EXCEEDING 100 PERSONS OCCUPANCY, WIRING METHODS SHALL COMPLY WITH NEC 518.
26. TRANSFER EQUIPMENT SHALL BE LISTED FOR THE PARTICULAR USE (I.E., "EMERGENCY" OR "STANDBY") AND SHALL BE APPROVED BY THE AUTHORITY HAVING JURISDICTION.
27. PROVIDE AN UNDERGROUND PVC CONDUIT SYSTEM FOR TELEPHONE SERVICE WITH PULL WIRES. EC SHALL COORDINATE WITH TELEPHONE UTILITY REGARDING ADDITIONAL FACILITIES REQUIRED FOR THE SERVICE INSTALLATION.
28. INSTALL ONE (1) 3/4 in FIRE RETARDANT TREATED PLYWOOD BACKBOARD WHERE INDICATED ON THE DRAWINGS FOR THE USE BY THE TELEPHONE SYSTEM. PROVIDE A 120 VOLT RECEPTACLE ADJACENT TO THE TELEPHONE BOARD. GROUND ALL TELEPHONE AND COMMUNICATIONS CIRCUITS PER NEC 800.

MATERIALS:

1. THE EC SHALL PROVIDE ALL NECESSARY DISCONNECTS, SWITCHES, RECEPTACLES, TERMINALS, ETC, UNDER THE ELECTRICAL BID AND SHALL INCLUDE ALL NECESSARY CIRCUITS AND CONNECTIONS TO THE EQUIPMENT PROVIDED BY ALL SUPPLIERS, UNLESS NOTED OTHERWISE BY OTHER DISCIPLINES.
2. EC SHALL PROVIDE ALL SERVICE ENTRANCE EQUIPMENT, SUB PANELS, AND OTHER ELECTRICAL DISTRIBUTION EQUIPMENT AS NECESSARY FOR A COMPLETE INSTALLATION. EC SHALL COORDINATE WITH UTILITY REGARDING SERVICE AND METERING DETAILS. *PRIOR TO ORDERING EQUIPMENT, THE EC SHALL OBTAIN THE AVAILABLE FAULT CURRENT OR TRANSFORMER SIZE AND IMPEDANCE FROM THE UTILITY AND CONTACT THE ENGINEER IF THE VALUE EXCEEDS THE EQUIPMENT SPECIFIED.* PANEL BOARDS AND SWITCH BOARDS SHALL BE SQUARE D, CUTLER-HAMMER, SIEMENS, OR GE. BUSES SHALL BE COPPER UNLESS OTHERWISE APPROVED BY THE ENGINEER. RECESSED PANEL BOARDS SHALL BE INSTALLED FLUSH WITH THE WALL FINISH. METER BASES SHALL COMPLY WITH THE UTILITY'S SPECIFICATIONS AND SHALL BE MOUNTED AT A HEIGHT APPROVED BY THE UTILITY. ALL EQUIPMENT IDENTIFIED FOR SERVICE ENTRANCE USE SHALL BE SO LABELED AND UL LISTED FOR SUCH USE. EC SHALL INSTALL ALL ELECTRICAL EQUIPMENT WITH CLEARANCES PER NEC 110.26. EC SHALL PERMANENTLY LABEL EQUIPMENT PER NEC 110.24.
3. ENCLOSED SAFETY SWITCHES SHALL BE HEAVY DUTY TYPE BY SQUARE D, EATON, OR GE. ENCLOSED SWITCHES SHALL HAVE A HANDLE LOCKABLE IN THE OFF POSITION AND SHALL HAVE A HANDLE INTERLOCKED TO PREVENT OPENING THE FRONT COVER WHILE IN THE ON POSITION. ENCLOSED SWITCHES OF THE FUSIBLE TYPE SHALL BE FUSED IN ACCORDANCE WITH NAMEPLATE DATA WITH DUAL ELEMENT TYPE FUSES BY BUSSMAN, LITTELFUSE, OR MERSEN.
4. OCCUPANCY SENSORS SHALL BE BY WATTSTOPPER, LUTRON, LEVITON, SENSOR SWITCH, HUBBELL, OR APPROVED EQUAL.
5. CIRCUIT BREAKERS SHALL BE MOLDED-CASE, THERMAL MAGNETIC TYPE WITH QUICK-MAKE, QUICK-BREAK MECHANISM, COMMON TRIP ON MULTI-POLE BREAKERS, AND UL LISTED FOR BOTH COPPER AND ALUMINUM CONDUCTORS. CIRCUIT BREAKERS IN PANELS SHALL BE SERIES RATED WITH THE MAIN BREAKER, FULLY RATED FOR THE SYSTEM, OR SERIES RATED WITH THE BREAKER FEEDING THE PANEL FROM THE FACTORY.
6. ALL WIRE, CONNECTORS, TERMINALS, AND LUGS SHALL BE PROVIDED BY THE EC. WHERE CONDUCTORS ARE RUN IN PARALLEL, LUGS SHALL BE LISTED FOR PARALLEL CONDUCTORS. PUSH WIRE CONNECTORS ARE NOT ALLOWED FOR BUILDING WIRE. PUSH CONNECTORS ARE ONLY ALLOWED, WHEN APPROVED, AS PART OF MANUFACTURED LISTED PRODUCTS. ALL WIRE SHALL BE INSTALLED IN CONDUIT UNLESS SPECIFICALLY NOTED OTHERWISE.
7. THE INSULATION TYPE FOR INTERIOR WIRING SHALL BE DUAL RATED THHN/THWN OR XHHW; ALL WIRING INSTALLED BELOW GRADE OR IN MOIST OR WET LOCATIONS SHALL HAVE TYPE THWN OR XHHW INSULATION. INSULATION VOLTAGE RATING SHALL BE 600 VOLTS AND A MINIMUM TEMPERATURE RATING OF 75°C. CONDUCTORS SHALL BE SOLID OR STRANDED COPPER FOR #10 AWG AND #12 AWG, AND STRANDED COPPER FOR #8 AWG AND LARGER SIZES. ALL WIRING AND CABLE SHALL BE UL LISTED. ALL TERMINATIONS AND DEVICES SHALL BE RATED FOR USE WITH 75°C CONDUCTORS. FINAL CONNECTIONS TO ALL MOTORS AND EQUIPMENT SUBJECT TO VIBRATION OR MOVEMENT SHALL BE MADE WITH STRANDED COPPER CONDUCTORS. CONDUCTORS SHALL BE BY CERRO WIRE, INC, INDUSTRIAL WIRE & CABLE, INC, ENCORE WIRE CORPORATION, OR SOUTHWIRE COMPANY.
8. JOINTS IN SOLID CONDUCTORS SHALL BE SPLICED USING IDEAL "WIRE NUTS", 3M "SCOTCH LOCK", OR T&B "PIGGY" CONNECTORS IN JUNCTION BOXES, OUTLET BOXES, AND LIGHTING FIXTURES. JOINTS IN STRANDED CONDUCTORS SHALL BE SPLICED BY APPROVED MECHANICAL CONNECTORS AND GUM RUBBER TAPE OR FRICTION TAPE. SOLDERLESS MECHANICAL CONNECTORS FOR SPLICES AND TAPS, PROVIDED WITH UL APPROVED INSULATING COVERS, MAY BE USED INSTEAD OF MECHANICAL CONNECTORS PLUS TAPE. IN ALL CASES, CONDUCTORS SHALL BE CONTINUOUS FROM OUTLET TO OUTLET AND NO SPLICING SHALL BE MADE EXCEPT WITHIN OUTLET OR JUNCTION BOXES, TROUGHS, OR GUTTERS. WHERE CONCENTRIC, ECCENTRIC, OR OVERSIZED KNOCKOUTS ARE ENCOUNTERED, A GROUNDING TYPE INSULATED BUSHING SHALL BE PROVIDED.
9. ALL LUMINAIRES SHALL BE LISTED. LUMINAIRES IN WET OR DAMP LOCATIONS SHALL BE MARKED AS SUITABLE FOR THE RESPECTIVE USE. EMERGENCY LIGHTING SHALL BE INSTALLED AS SHOWN. FINAL LOCATIONS OF ALL EXIT AND EMERGENCY LIGHTS SHALL BE VERIFIED WITH THE BUILDING INSPECTOR PRIOR TO INSTALLATION. ALL FLUORESCENT FIXTURES SHALL HAVE ELECTRONIC BALLASTS MEETING ANSI C82.11 FOR ELECTRONIC BALLAST PERFORMANCE. ALL BALLASTS SHALL BE UL LISTED AND MEET FEDERAL AND STATE EFFICIENCY REQUIREMENTS.
10. ALL CONDUIT, FITTINGS, COUPLINGS, AND SUPPORTS SHALL BE PROVIDED BY THE EC. CONDUIT FITTINGS AND COUPLINGS SHALL BE BY APPLETON, RACO, OR O-Z/GEDNEY. COUPLINGS SHALL BE THREADED, SET-SCREW, OR COMPRESSION TYPE. INDENTER OR CRIMP TYPE ARE NOT PERMITTED. CONDUIT FITTINGS AT ALL ELECTRICAL BOXES INCLUDING PULL, JUNCTION, AND OUTLET BOXES, SHALL HAVE INSULATED THROATS TO PREVENT INSULATION SCORING. DIE CAST FITTINGS ARE NOT PERMITTED
11. EMT SHALL BE MANUFACTURED IN ACCORDANCE WITH AMERICAN NATIONAL STANDARDS INSTITUTE-AMERICAN NATIONAL STANDARD FOR STEEL ELECTRICAL METALLIC TUBING (EMT), ANSI C80.3 AND UL 797. RIGID METAL CONDUIT SHALL BE MANUFACTURED IN ACCORDANCE WITH ANSI-AMERICAN NATIONAL STANDARD FOR ELECTRICAL RIGID STEEL CONDUIT (ERSC), ANSI C80.1 AND UL 6. INTERMEDIATE METAL CONDUIT SHALL BE MANUFACTURED IN ACCORDANCE WITH ANSI-AMERICAN NATIONAL STANDARD FOR INTERMEDIATE METAL CONDUIT ANSI C80.6 AND UL 1242.
12. METAL CONDUIT SHALL BE BY ALLIED TUBING & CONDUIT, BECK MANUFACTURING, INC, OR WHEATLAND TUBE COMPANY. FLEXIBLE METAL CONDUIT, LIQUID-TIGHT FLEXIBLE METAL CONDUIT, AND NONMETALLIC CONDUIT SHALL BE BY AFC CABLE SYSTEMS, INC, ELECTRI-FLEX COMPANY, OR INTERNATIONAL METAL HOSE.

KILIAN
A Stratus Team Company
PO Box 3301, Henderson, NC 27536
www.kilianengineering.com | P| 252.436.8178
CORPORATE LICENSE C-2277

NORTH CAROLINA PROFESSIONAL SEAL 17304 ENGINEER MICHAEL W. KILIAN
10/02/2025
KILIAN ENGINEERING, INC. CORPORATE SEAL NORTH CAROLINA

NEW CONSTRUCTION FOR:

COVE CREEK PICNIC SHELTER & RESTROOMS

SUGAR GROVE, NC

REVISION

7	6	5	4	3	2	1	NO
							DESCRIPTION

ISSUED: 10/02/2025

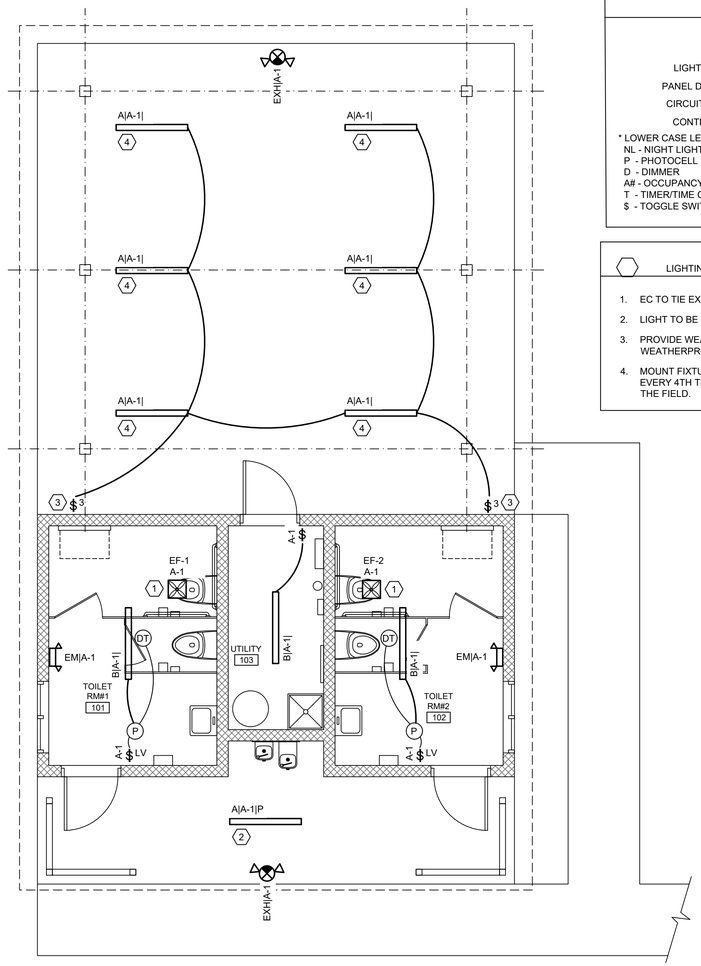
ISSUED FOR PERMITTING
DESCRIPTION

DRAWN BY: RSB
CHECKED BY: MWK/REW

SHEET: ELECTRICAL NOTES

SHEET NO.
E-001

PROJECT NO: 250594



1 LIGHTING PLAN

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

LIGHTING CIRCUIT DESIGNATIONS

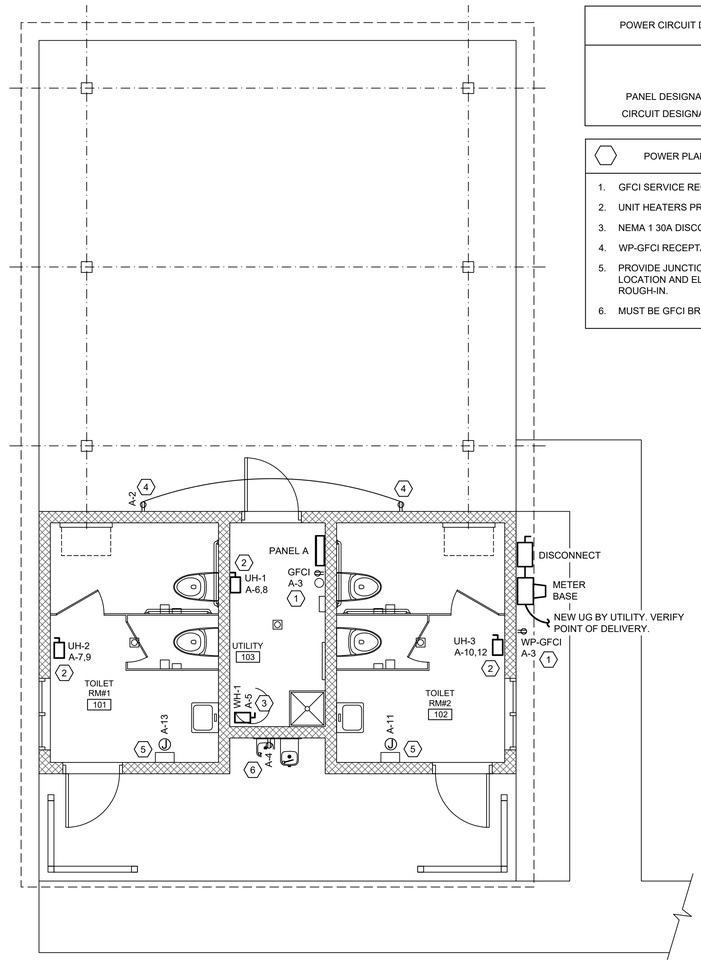
A | A#-# | C

- LIGHT FIXTURE
- PANEL DESIGNATION
- CIRCUIT DESIGNATION
- CONTROL DESIGNATION

* LOWER CASE LETTER INDICATES SWITCH ID
NL - NIGHT LIGHT - 24/7 OPERATION
P - PHOTOCELL
D - DIMMER
A# - OCCUPANCY SENSOR CIRCUIT (E.G. RMJ-B1)
T - TIMER/TIME CLOCK
$ - TOGGLE SWITCH

LIGHTING PLAN HEX NOTES

1. EC TO TIE EXHAUST FAN INTO SWITCH FOR LIGHT.
2. LIGHT TO BE CONTROLLED BY PHOTOCELL.
3. PROVIDE WEATHERPROOF SWITCH, OR INSTALL IN WEATHERPROOF BOX.
4. MOUNT FIXTURE TO TOP EDGE OF THE BOTTOM CHORD ON EVERY 4TH TRUSS. COORDINATE MOUNTING LOCATIONS IN THE FIELD.



2 POWER PLAN

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

POWER CIRCUIT DESIGNATIONS

A - #

- PANEL DESIGNATION
- CIRCUIT DESIGNATION

POWER PLAN HEX NOTES

1. GFCI SERVICE RECEPTACLE.
2. UNIT HEATERS PROVIDE WITH INTERNAL DISCONNECT.
3. NEMA 1 30A DISCONNECT FOR WH-1 LOCATED NEAR DEVICE.
4. WP-GFCI RECEPTACLE MOUNTED AT 24" AFF.
5. PROVIDE JUNCTION BOX FOR HAND DRYER. VERIFY LOCATION AND ELECTRICAL REQUIREMENTS PRIOR TO ROUGH-IN.
6. MUST BE GFCI BREAKER.

KILIAN
A Stratus Team Company
PO Box 3301, Henderson, NC 27536
www.kilianengineering.com | P| 252.436.8178
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NORTH CAROLINA PROFESSIONAL SEAL 17304 ENGINEER MICHAEL W. KILIAN
10/02/2025

KILIAN ENGINEERING, INC. CORPORATE SEAL NORTH CAROLINA

NEW CONSTRUCTION FOR:

COVE CREEK PICNIC SHELTER & RESTROOMS

SUGAR GROVE, NC

REVISION

7	6	5	4	3	2	1	NO.
							DESCRIPTION
							DATE

ISSUED: 10/02/2025

ISSUED FOR PERMITTING
DESCRIPTION

DRAWN BY: RSB
CHECKED BY: MWK/REW

SHEET:
LIGHTING & POWER PLAN

SHEET NO.
E-101

PROJECT NO: 250594

LIGHT FIXTURE SCHEDULE										
MARK	DESCRIPTION	LOUVER/LENS	LAMPS		VOLTAGE	INPUT WATTAGE	MOUNTING	REMARKS	MFG	MODEL
			TYPE	CCT						
A	LED STRIP LIGHT, WET LISTED	-	LED	4000K	120	36	SURFACE	2	COOPER	HVSL2 4 LD4 STD 40 UNV 0 EDC1 WL
B	LED STRIP LIGHT	-	LED	4000K	120	36	SURFACE	2	LITHONIA	CSS L48 4000LM MVOLT 40K 80CRI
EM	DUAL HEAD EMERGENCY FIXTURE	ACRYLIC	LED	N/A	-	2	VARIES	1	LITHONIA	ELM2L-SDRT
EXH	LED EXIT/EMERGENCY COMBO, WET LOCATION	ACRYLIC	LED	N/A	-	-	VARIES	1	EELP	XCR-CW

1. FIXTURE SHALL HAVE BATTERY BACKUP FOR 90 MINUTE ILLUMINATION.
2. OR EQUAL BY COOPER, MOBERN, OR CURRENT BY GE LIGHTING

LIGHTING DEVICE LEGEND		
SYMBOL	DESCRIPTION	REMARKS
$	SINGLE POLE WALL SWITCH	HEAVY DUTY, AC ONLY, COMMERCIAL GRADE GENERAL USE SNAP SWITCH COMPLYING WITH NEMA WD 6 AND WD 1. IVORY PLASTIC BODY WITH TOGGLE HANDLE. 120-277V, 20A. MEET FEDERAL SPECIFICATION W-S-896.
$M	WALL MOUNTED OCCUPANCY SENSOR	WATTSTOPPER DSW-301 LINE VOLTAGE OCCUPANCY SENSOR. ULTRA SONIC AND INFRARED.
$LV	LOW VOLTAGE SWITCH	WATTSTOPPER LVSW-101 LOW VOLTAGE MOMENTARY CONTROL SWITCH.
$3	3 WAY SWITCH	3-WAY TYPE SWITCH WITH SAME CHARACTERISTICS AS SINGLE POLE SWITCH ABOVE.
(DT)	CEILING OCCUPANCY SENSOR	WATTSTOPPER, UT-300-3 LOW VOLTAGE OCCUPANCY SENSOR. 360° ULTRA SONIC AND INFRARED.
(P)	POWER PACK	WATTSTOPPER, BZ-150 LOW VOLTAGE POWER PACK FOR CEILING PACK SENSORS.
(J)	JUNCTION BOX	GALVANIZED METAL BOX CONSTRUCTED IN ACCORDANCE WITH 314.40 OF THE NEC.
⊠	EXHAUST FAN	VENT FAN, 120V, CFM AS NOTED MC TO PROVIDE AND VENT, EC TO WIRE.

POWER DEVICE LEGEND		
SYMBOL	DESCRIPTION	REMARKS
	DUPLEX RECEPTACLE	NEMA 5-20R, HEAVY DUTY, COMMERCIAL GRADE, 125V, 20A COMPLYING WITH NEMA WD 6 AND WD 1. GFCI OR AFCI IF NOTED. 'WP' DENOTES WEATHERPROOF COVER. 'CH' DENOTES COUNTER HEIGHT. LISTED TAMPERPROOF IF NOTED. MEET FEDERAL SPECIFICATION W-C-596.
	FUSIBLE DISCONNECT SWITCH	HEAVY DUTY TYPE. TYPE 1 ENCLOSURE IN INTERIOR APPLICATIONS, TYPE 3R ENCLOSURE IN EXTERIOR APPLICATIONS, FUSE ACCORDING TO NAMEPLATE DATA.
	DISCONNECT SWITCH	HEAVY DUTY TYPE. TYPE 1 ENCLOSURE IN INTERIOR APPLICATIONS, TYPE 3R ENCLOSURE IN EXTERIOR APPLICATIONS.
(J)	JUNCTION BOX	GALVANIZED METAL BOX CONSTRUCTED IN ACCORDANCE WITH 314.40 OF THE NEC.

RESTROOM

ELECTRICAL DESIGNER'S STATEMENT		
ELECTRICAL SYSTEM AND EQUIPMENT METHOD OF COMPLIANCE PRESCRIPTIVE _X_ PERFORMANCE ___ ENERGY COST BUDGET ___		
LIGHTING SCHEDULE:		
LAMP TYPE REQUIRED IN FIXTURE:	SEE LIGHTING LEGEND	
NUMBER OF LAMPS PER FIXTURE:	SEE LIGHTING LEGEND	
BALLAST TYPE USED IN FIXTURE:	SEE LIGHTING LEGEND	
NUMBER OF BALLASTS IN FIXTURE:	SEE LIGHTING LEGEND	
TOTAL WATTAGE PER FIXTURE:	SEE LIGHTING LEGEND	
TOTAL INTERIOR WATTAGE SPECIFIED VS ALLOWED:	WATTS SPECIFIED	WATTS ALLOWED
	108.0	369.00

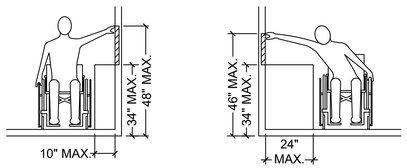
OCCUPANCY	AREA (sf)	ALLOWANCE (W/sf)	WATTAGE ALLOWED
RESTROOM	376.00	0.98	369
TOTAL	376		369.00

EQUIPMENT SCHEDULES WITH MOTORS (NOT USED FOR MECHANICAL SYSTEMS)
MOTOR HORSEPOWER: N/A
NUMBER OF PHASES: N/A
MINIMUM EFFICIENCY: N/A
MOTOR TYPE: N/A
NUMBER OF POLES: N/A

DESIGNER STATEMENT: TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE DESIGN OF THIS BUILDING COMPLIES WITH THE 2020 NORTH CAROLINA ENERGY CONSERVATION CODE.

FOR THE ADDITIONAL PRESCRIPTIVE REQUIREMENT REQUIRED BY C406 OF 2020 NORTH CAROLINA ENERGY CONSERVATION CODE, WE ARE CHOOSING C406.3 - REDUCED LIGHTING POWER DENSITY.

108 W SPECIFIED <= 332 W (369 W ALLOWED X 90%)



ANSI A117.1 FIG. 308.3.2 OBSTRUCTED HIGH REACH SIDE.

ALL SWITCHES AND CONTROLS MUST COMPLY FOR ALL COUNTERTOPS

NOTES FOR EMERGENCY FIXTURES

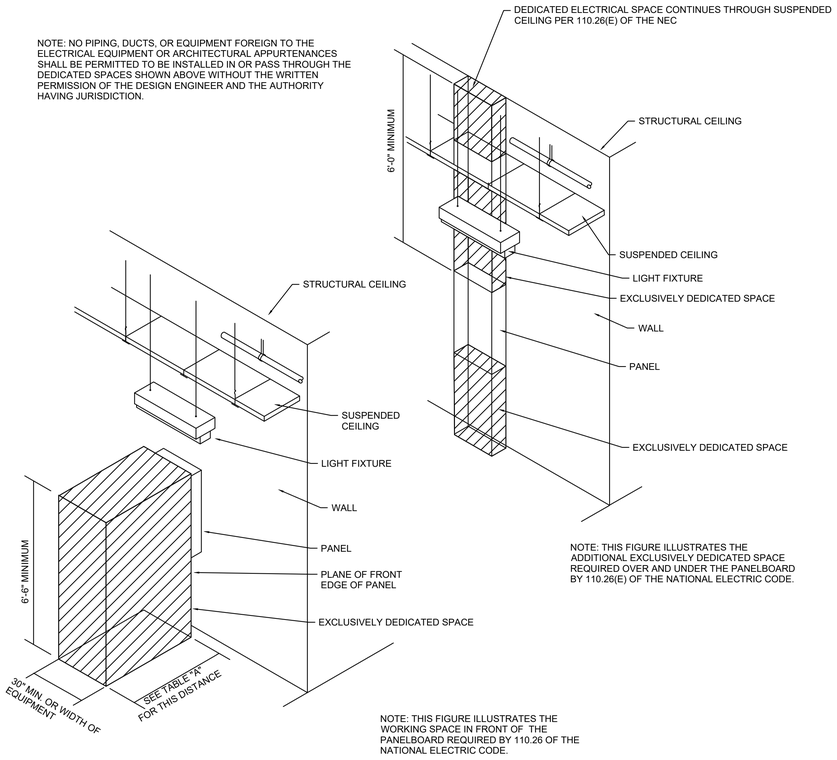
1. FOR INTERIOR FIXTURES WITH EMERGENCY BATTERIES, WIRE THE BATTERY CHARGER ON THE SAME CIRCUIT AS THE FIXTURE BALLAST AHEAD OF ALL SWITCHES, SENSORS, ETC.
2. FOR EXTERIOR FIXTURES WITH EMERGENCY BATTERIES, WIRE THE BATTERY CHARGER ON THE SAME CIRCUIT AS THE NORMAL EXTERIOR LIGHTS OR AS SHOWN ON PLANS AHEAD OF ALL CONTACTORS, PHOTOCELLS, ETC.
3. IN BOTH CASES, EMERGENCY POWER SHOULD INITIATE ONLY IN THE EVENT OF THE LOSS OF NORMAL POWER. ALL BATTERIES SHALL BE RATED TO POWER EMERGENCY ILLUMINATION FOR 90 MINUTES MINIMUM.

OCCUPANCY SENSORS SEQUENCE OF OPERATION WITH LOW-VOLTAGE MOMENTARY SWITCH

1. OCCUPANCY SENSOR DETECTS MOTION AND TURNS THE LIGHTS ON. SENSOR HOLDS LIGHTS ON AS LONG AS MOTION IS DETECTED. IF AFTER THE SET TIME DELAY, NO MOTION IS DETECTED, LIGHTS TURN OFF. CONSULT OWNER FOR DESIRED TIME DELAY SETTING.
2. THE LOAD CAN BE TURNED ON USING THE MANUAL SWITCH AND IT STAYS ON ACCORDING TO THE OCCUPANCY LOGIC SETTING. THE TIME DELAY OPERATES AS PROGRAMMED. WHEN THE LOAD TURNS OFF DUE TO LACK OF OCCUPANCY DETECTION, IT CAN BE TURNED ON AGAIN BY OCCUPANCY DETECTION OR THE SWITCH.
3. ACTIVATING THE MANUAL SWITCH WHILE THE LOAD IS ON TURNS THE LOAD OFF.
   - 3.1. WHEN THE LOAD IS TURNED OFF MANUALLY, AS LONG AS THE SENSOR CONTINUES TO DETECT OCCUPANCY THE LOAD STAYS OFF. FIVE MINUTES AFTER THE LAST OCCUPANCY DETECTION, THE LIGHTS STAY OFF AND THE SENSOR REVERTS TO THE AUTOMATIC-ON MODE.
   - 3.2. WHEN THE LOAD IS TURNED OFF MANUALLY, PRESSING THE SWITCH AGAIN TURNS THE LOAD ON AND THE SENSOR REVERTS TO THE AUTOMATIC-ON MODE.
   - 3.3. ONCE RETURNING TO AUTOMATIC-ON MODE, EITHER THE SWITCH OR OCCUPANCY DETECTION CAN TURN THE LOAD ON.
4. LOW-VOLTAGE INPUT SIGNAL FROM TIME CLOCK HOLDS LIGHTS ON DURING RETAIL HOURS REGARDLESS OF OCCUPANCY DETECTION.

1 SCHEDULES

NOTE: NO PIPING, DUCTS, OR EQUIPMENT FOREIGN TO THE ELECTRICAL EQUIPMENT OR ARCHITECTURAL APPURTENANCES SHALL BE PERMITTED TO BE INSTALLED IN OR PASS THROUGH THE DEDICATED SPACES SHOWN ABOVE WITHOUT THE WRITTEN PERMISSION OF THE DESIGN ENGINEER AND THE AUTHORITY HAVING JURISDICTION.



NOTE: THIS FIGURE ILLUSTRATES THE ADDITIONAL EXCLUSIVELY DEDICATED SPACE REQUIRED OVER AND UNDER THE PANELBOARD BY 110.26(E) OF THE NATIONAL ELECTRIC CODE.

NOTE: THIS FIGURE ILLUSTRATES THE WORKING SPACE IN FRONT OF THE PANELBOARD REQUIRED BY 110.26 OF THE NATIONAL ELECTRIC CODE.

NOTE: WHERE THE CONDITIONS ARE AS FOLLOWS: CONDITION 1 - EXPOSED LIVE PARTS ON ONE SIDE OF THE WORKING SPACE AND NO LIVE OR GROUNDED PARTS ON THE OTHER SIDE OF THE WORKING SPACE, OR EXPOSED LIVE PARTS ON BOTH SIDES OF THE WORKING SPACE THAT ARE EFFECTIVELY GUARDED BY INSULATING MATERIALS. CONDITION 2 - EXPOSED LIVE PARTS ON ONE SIDE OF THE WORKING SPACE AND GROUNDED PARTS ON THE OTHER SIDE OF THE WORKING SPACE. CONCRETE, BRICK, OR TILE WALLS SHALL BE CONDITION 3 - EXPOSED LIVE PARTS ON BOTH SIDES OF THE WORKING SPACE CONSIDERED AS GROUNDED

TABLE 110.26(A)(1) WORKING SPACE			
VOLTAGE TO GROUND, NOMINAL	MINIMUM CLEAR DISTANCE (FEET)		
	CONDITON 1	2	3
0-150	3	3	3
151-600	3	3-1/2	4
601-1000	3	4	5

2 PANEL CLEARANCES DETAIL
Scale: None

KILIAN
A Stratus Team Company
PO Box 3301, Henderson, NC 27536
www.Kilianengineering.com | P| 252.438.8178
CORPORATE LICENSE C-2277

NORTH CAROLINA PROFESSIONAL SEAL 17304 ENGINEER MICHAEL W. KILIAN
10/02/2025
KILIAN ENGINEERING CORPORATE SEAL NORTH CAROLINA

NEW CONSTRUCTION FOR:
COVE CREEK PICNIC SHELTER & RESTROOMS
SUGAR GROVE, NC

REVISION

NO	DESCRIPTION	DATE
1		
2		
3		
4		
5		
6		
7		

ISSUED: 10/02/2025
ISSUED FOR PERMITTING
DESCRIPTION

DRAWN BY: RSB
CHECKED BY: MWK/REW

SHEET: ELECTRICAL SCHEDULES & DETAILS

SHEET NO. E-301

PROJECT NO: 250594

PANEL A								
CKT	LOAD	BKR	LOAD kVA	PH	LOAD kVA	BKR	LOAD	CKT
1	LIGHTING	20/1	0.00	A	0.36	20/1	RECEPTS. SHELTER	2
3	GFCI SERVICE RECEPT.	20/1	0.36	B	1.00	20/1	EWC	④
5	WATER HEATER	30/1	2.50	A	1.00	20/2	UH-1	6
7	UH-2	20/2	1.50	B	1.00			8
9			1.50	A	1.50	20/2	UH-3	10
11	HAND DRYER	20/1	1.30	B	1.50			12
13	HAND DRYER	20/1	1.30	A	0.00	20/1	SPARE	14
15	SPARE	20/1	0.00	B	0.00	20/1	SPARE	16
17	SPACE		0.00	A	0.00		SPACE	18
19	SPACE		0.00	B	0.00		SPACE	20
21	SPACE		0.00	A	0.00		SPACE	22
23	SPACE		0.00	B	0.00		SPACE	24
			kVA	PH	AMPS			
			8.2	A	68			
			6.7	B	56			

VOLTAGE/PHASE	120/240,1P,3W
BUS RATING	200A
MAIN CIRCUIT BREAKER RATING	MLO
AIC RATING	22K (EC TO VERIFY)
SERVICE ENTRANCE RATED	NO
ENCLOSURE	NEMA 1
MOUNTING	SURFACE

◯ = GFCI BREAKER

NEC ELECTRIC DEMAND SUMMARY 120/240V,1P,3W						
EQUIPMENT	DEMAND FACTOR	kVA A	kVA B	LOAD kVA	NEC REFERENCE	NOTES/CALCULATIONS
LIGHTING	100%	0.18	0.18	0.36	220.12	376 SF X .98 VA/SF
RECEPTACLES < 10 kVA	100%	1.66	2.66	4.32	220.44	INCLUDES HAND DRYER, & EWC
RECEPTACLES > 10 kVA	50%	0.00	0.00	0.00	220.44	
HVAC	100%	4.00	4.00	8.00	--	BASED ON KW
WATER HEATER	125%	2.50	0.00	2.50	422.13	STORAGE TANK <120 GAL @ 125%
DEMAND kVA PER PHASE		8.34	6.84			
DEMAND AMPS PER PHASE		69	57			

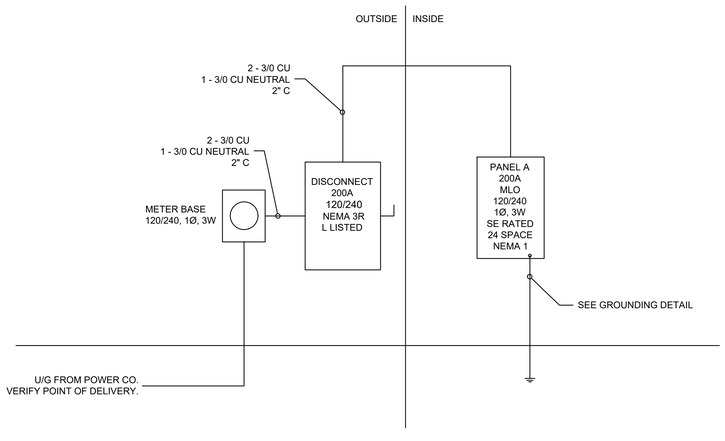
THE CALCULATED LIGHTING LOAD EXCEEDS THE CONNECTED LIGHTING LOAD.

BREAKER FEEDER SCHEDULE			
AMPS	WIRE SIZE	GROUND SIZE	CONDUIT SIZE
15A	#12	#12	1/2"
20A	#12	#12	1/2"
25A	#10	#10	3/4"
30A	#10	#10	3/4"
35A	#8	#10	1"
40A	#8	#10	1"
50A	#8	#10	1"
60A	#6	#10	1 1/4"
70A	#4	#8	1 1/4"
80A	#4	#8	1 1/4"
90A	#3	#8	1 1/2"
100A	#3	#8	1 1/2"
110A	#2	#6	2"
125A	#1	#6	2"
150A	1/0	#6	2 1/2"
175A	2/0	#6	2 1/2"
200A	3/0	#6	2 1/2"
225A	4/0	#4	2 1/2"
250A	250 MCM	#4	3"
300A	350 MCM	#4	3 1/2"
350A	500 MCM	#3	4"
400A	2 SETS- 3/0	#3	2 1/2"

1. CONDUCTOR PER POLE PLUS NEUTRAL PER SET. E.C. TO VERIFY NECESSITY OF NEUTRAL FOR EACH CIRCUIT. NEUTRAL MAY BE DELETED IF NOT REQUIRED FOR INDIVIDUAL PIECES.

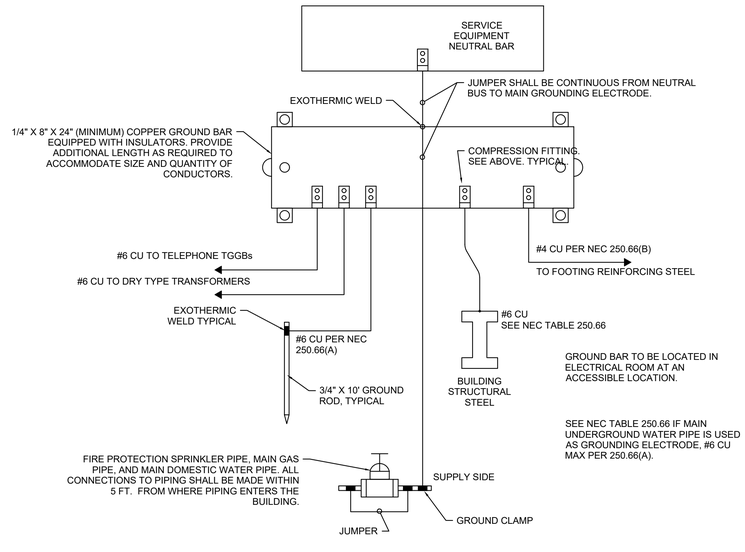
VOLTAGE DROP SCHEDULE
120V CIRCUITS < 8 AMPS (1.0 kVA) DISTANCE TO 1ST LOAD — AWG SIZE 0' - 120' — #12 121' - 190' — #10 191' - 300' — #8 301' - 470' — #6
120V CIRCUITS 9 TO 14 AMPS (1.0-1.7 kVA) DISTANCE TO 1ST LOAD — AWG SIZE 0' - 65' — #12 66' - 110' — #10 111' - 170' — #8 171' - 270' — #6
WIRE SIZES INDICATED IN BREAKER FEEDER SCHEDULE ARE MINIMUM WIRE SIZES. CONTRACTOR SHALL UPSIZE WIRES BASED ON LOAD AND LENGTH OF RUN AS INDICATED IN SCHEDULE ABOVE.

1 PANEL SCHEDULES



2 POWER RISER

Scale: NONE



3 GROUNDING DETAIL

Scale: None

KILIAN
A Stratus Team Company
PO Box 3301, Henderson, NC 27536
www.Killianengineering.com | P| 252.438.8178
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ISSUED: 10/02/2025

ISSUED FOR PERMITTING
DESCRIPTION

DRAWN BY: RSB
CHECKED BY: MWK/REW

SHEET:
ELECTRICAL PANEL SCHEDULES & RISER

SHEET NO.
E-302

PROJECT NO: 250594