

Walter Clark,
Chair
Cumberland County

Patricia Hall,
Vice-Chair
Town of Hope Mills

Garland C. Hostetter,
Town of Spring Lake
Harvey Cain, Jr.,
Town of Stedman
Charles C. Morris,
Town of Linden



Planning & Inspections Department

Thomas J. Lloyd,
Director

Cecil P. Combs,
Deputy Director

Lori Epler,
Sara E. Piland,
Vikki Andrews,
Cumberland County

Benny Pearce,
Town of Eastover

Donovan McLaurin,
Wade, Falcon & Godwin

TENTATIVE AGENDA

May 21, 2013
7:00 P.M.

- I. INVOCATION AND PLEDGE OF ALLEGIANCE
- II. APPROVAL OF/ADJUSTMENTS TO AGENDA
- III. PUBLIC HEARING WITHDRAWAL

P12-48: REZONING OF 86.22+/- ACRES FROM CD CONSERVANCY AND RR RURAL RESIDENTIAL TO R7.5 RESIDENTIAL OR TO A MORE RESTRICTIVE ZONING DISTRICT; LOCATED ON THE EAST SIDE OF MCKINNON FARM ROAD AND SOUTH OF SR 1107 (FISHER ROAD); SUBMITTED BY LORRAINE MOHLER ON BEHALF OF MWH GROUP, LLC. (OWNER) AND 4D SITE SOLUTIONS, INC.

- IV. ABSTENTIONS BY BOARD MEMBERS
- V. POLICY STATEMENT REGARDING PUBLIC HEARING TIME LIMITS
- VI. APPROVAL OF THE MINUTES OF APRIL 16, 2013
- VII. PUBLIC HEARING CONSENT ITEMS

TEXT AMENDMENT

- A. **P13-20.** REVISION AND AMENDMENT TO THE TOWN OF FALCON ZONING ORDINANCE AMENDING ARTICLE II. GENERAL ZONING DISTRICT CLASSIFICATIONS, SECTION 2.1. STATEMENT OF INTENT, PURPOSE AND ZONE CHARACTERISTICS, SUB-SECTION 2.18. CONDITIONAL USE DISTRICTS; ARTICLE III. PERMITTED PRINCIPAL USES AND STRUCTURES, TITLE AND SECTION 3.1 TABULATION OF PERMITTED USES; ARTICLE IV. COMPANION DISTRICTS – CONDITIONAL USE DISTRICTS IN ITS ENTIRETY, INCLUDING THE TITLE; ARTICLE IX. SIGN REGULATIONS, SECTION 9.3. SIGNS PERMITTED IN ANY DISTRICT; ARTICLE X. DEFINITION OF TERMS, SECTION 10.2. DEFINITIONS OF SPECIFIC TERMS AND WORDS, SPECIFICALLY CONDITIONAL USE & SPECIAL INFORMATION SIGNS; ARTICLE XII. ADMINISTRATIVE PROVISIONS, SECTION 12.4. ADMINISTRATIVE PROCEDURES, SUB-SECTION 12.43. VARIANCE AND SECTION 12.5. AMENDMENTS, IN ITS ENTIRETY; AND UPDATING THE TABLE OF CONTENTS AS APPROPRIATE. (FALCON)

REZONING CASES

- B. **P13-13.** REZONING OF 2.78+/- ACRES FROM M(P) PLANNED INDUSTRIAL TO A1 AGRICULTURAL OR TO A MORE RESTRICTIVE ZONING DISTRICT; LOCATED AT 2276 CLARK WEST ROAD AND ON THE SOUTHWEST SIDE OF SR 2217 (CLARK WEST ROAD), EAST OF SR 2216 (EVANS DAIRY ROAD); SUBMITTED BY STEPHEN M. & ELIZABETH CRUMPLER CLARK AND HENRY E. & MILDRED M. CLARK (OWNERS). (COUNTY)
- C. **P13-14.** REZONING OF 23.78+/- ACRES FROM R40 RESIDENTIAL TO R20 RESIDENTIAL OR TO A MORE RESTRICTIVE ZONING DISTRICT; LOCATED ON THE NORTHWEST SIDE OF RAMSEY STREET, NORTHEAST W REEVES BRIDGE ROAD; SUBMITTED BY W. STAN TAYLOR (TRUSTEE) ON BEHALF OF KM TAYLOR FAMILY TRUST (OWNER). (COUNTY)
- D. **P13-18.** REZONING OF 2.56+/- ACRES FROM A1 AGRICULTURAL TO R40 OR TO A MORE RESTRICTIVE ZONING DISTRICT, LOCATED ON THE NORTH SIDE OF SR 2245 (THROWER ROAD) AND ON THE EAST SIDE OF SR 2372 (NORTH FORK LANE), SUBMITTED BY ELLA M. MCNAIR (OWNER) AND TIMOTHY B. EVANS. (COUNTY)

CONDITIONAL ZONING DISTRICT

- E. **P13-05.** REZONING OF 2.51+/- ACRES FROM A1 AGRICULTURAL TO R40 RESIDENTIAL OR TO A MORE RESTRICTIVE ZONING DISTRICT, LOCATED AT 1348 BAINBRIDGE ROAD, SUBMITTED BY WALTER SCOTT AND SYLVIA DELORIS MANNING (OWNERS) AND ROBERT M. BENNETT. (COUNTY)
- F. **P13-19.** REZONING OF 8.00+/- ACRES FROM R40A RESIDENTIAL TO R20/CZ RESIDENTIAL/CONDITIONAL ZONING DISTRICT FOR GROUP QUARTERS OR TO A MORE RESTRICTIVE ZONING DISTRICT; LOCATED ON THE NORTHEAST SIDE OF NC HWY 82 (N WEST STREET), SOUTHEAST OF SR 1806 (SHERRILL BAGGETT ROAD); SUBMITTED BY JOSEPH T. LEGGETT ON BEHALF OF FALON CHILDREN'S HOME (OWNER) AND MATTHEW HALEY, PE. (FALCON)

VIII. PUBLIC HEARING CONTESTED ITEMS

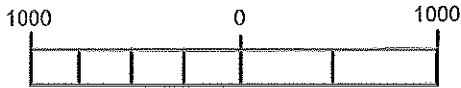
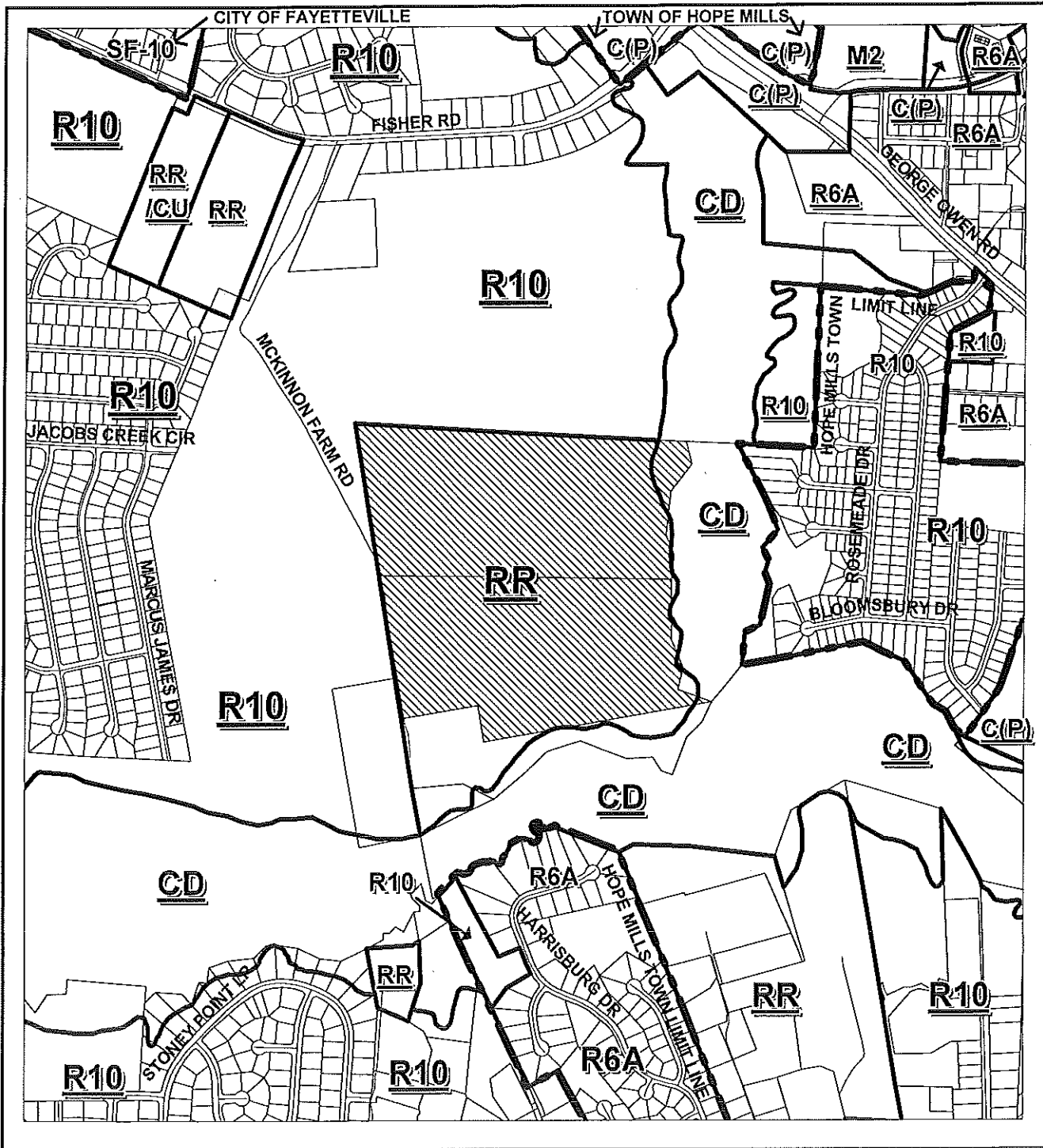
TEXT AMENDMENT

- G. **P11-20.** REVISION AND AMENDMENT TO THE CUMBERLAND COUNTY ZONING ORDINANCE, AMENDING ARTICLE II INTERPRETATIONS, CALCULATIONS, AND DEFINITIONS, SECTION 203. DEFINITIONS OF SPECIFIC TERMS AND WORDS BY INSERTING IN ALPHABETICAL ORDER THE TERM AND DEFINITION FOR "FIRING RANGE, OUTDOOR;" AMENDING ARTICLE IV PERMITTED, CONDITIONAL, AND SPECIAL USES, SECTION 403. USE MATRIX BY INSERTING IN ALPHABETICAL ORDER A NEW ROW ENTITLED "FIRING RANGE, OUTDOOR (SEC. 907.1)" IN THE LAND USE COLUMN AND ALLOWING THIS USE AS CONDITIONAL ZONING BY INSERTING A "Z" IN THE CD, A1, A1A, O&I(P), C1(P), C2(P), C(P), M1(P) AND M(P) ZONING DISTRICT COLUMNS ON THIS SAME ROW; AMENDING ARTICLE IX INDIVIDUAL USES BY CREATING AND INSERTING IN NUMERICAL ORDER A NEW SECTION ENTITLED: SECTION 907.1 FIRING RANGE, OUTDOOR, WITH SUB-SECTIONS "A" THROUGH "J;" AND UPDATING THE TABLE OF CONTENTS AS APPROPRIATE. (NOTE: ORIGINAL HEADING HAS CHANGED TO REFLECT THE CURRENT PROPOSED AMENDMENT.) (COUNTY)

IX. DISCUSSION

DIRECTOR'S UPDATE

X. ADJOURNMENT



SCALE IN FEET

REQUESTED REZONING CD & RR TO R15/CZ

ACREAGE: 86.22 AC.+/-

HEARING NO: P12-48

ORDINANCE: COUNTY

HEARING DATE

ACTION

STAFF RECOMMENDATION

PLANNING BOARD

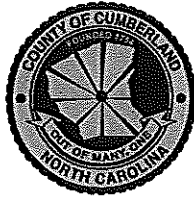
GOVERNING BOARD

★ Withdrawn

Walter Clark,
Chair
Cumberland County

Patricia Hall,
Vice-Chair
Town of Hope Mills

Garland C. Hostetter,
Town of Spring Lake
Harvey Cain, Jr.,
Town of Stedman
Charles C. Morris,
Town of Linden



CUMBERLAND
★ **COUNTY** ★
NORTH CAROLINA

Planning & Inspections Department

May 14, 2013

Thomas J. Lloyd,
Director

Cecil P. Combs,
Deputy Director

Lori Epler,
Sara E. Piland,
Vikki Andrews,
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Benny Pearce,
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Donovan McLaurin,
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MEMORANDUM

TO: Cumberland County Joint Planning Board
FROM: Planning and Inspections Staff
SUBJECT: Staff Recommendation for May 21, 2013 Board Meeting

P13-20. REVISION AND AMENDMENT TO THE TOWN OF FALCON ZONING ORDINANCE AMENDING ARTICLE II. GENERAL ZONING DISTRICT CLASSIFICATIONS, SECTION 2.1. STATEMENT OF INTENT, PURPOSE AND ZONE CHARACTERISTICS, SUB-SECTION 2.18. CONDITIONAL USE DISTRICTS; ARTICLE III. PERMITTED PRINCIPAL USES AND STRUCTURES, TITLE AND SECTION 3.1 TABULATION OF PERMITTED USES; ARTICLE IV. COMPANION DISTRICTS – CONDITIONAL USE DISTRICTS IN ITS ENTIRETY, INCLUDING THE TITLE; ARTICLE IX. SIGN REGULATIONS, SECTION 9.3. SIGNS PERMITTED IN ANY DISTRICT; ARTICLE X. DEFINITION OF TERMS, SECTION 10.2. DEFINITIONS OF SPECIFIC TERMS AND WORDS, SPECIFICALLY *CONDITIONAL USE & SPECIAL INFORMATION SIGNS*; ARTICLE XII. ADMINISTRATIVE PROVISIONS, SECTION 12.4. ADMINISTRATIVE PROCEDURES, SUB-SECTION 12.43. VARIANCE AND SECTION 12.5. AMENDMENTS, IN ITS ENTIRETY; AND UPDATING THE TABLE OF CONTENTS AS APPROPRIATE. (FALCON)

The Planning & Inspections Staff recommends approval of the above referenced text amendment based on the following:

1. If approved, this amendment will allow for rezoning with conditions as a legislative matter and since quasi-judicial hearings would no longer be required for this type of application, the two part motion requirement would also be eliminated; and
2. The amendment, if adopted, will enable board members to converse with citizens and affected property owners concerning a proposed conditional zoning application without comprising the rezoning process thus affording the Town's elected officials the opportunity to make well-informed decisions.

Attachment: P13-20 Town of Falcon Zoning Text Amendment – Conditional Use District & Permit to Conditional Zoning

P13-20
Town of Falcon
Zoning Ordinance Text Amendment
Conditional Zoning District

P13-20. REVISION AND AMENDMENT TO THE TOWN OF FALCON ZONING ORDINANCE AMENDING ARTICLE II. GENERAL ZONING DISTRICT CLASSIFICATIONS, SECTION 2.1. STATEMENT OF INTENT, PURPOSE AND ZONE CHARACTERISTICS, SUB-SECTION 2.18. CONDITIONAL USE DISTRICTS; ARTICLE III. PERMITTED PRINCIPAL USES AND STRUCTURES, TITLE AND SECTION 3.1 TABULATION OF PERMITTED USES; ARTICLE IV. COMPANION DISTRICTS – CONDITIONAL USE DISTRICTS IN ITS ENTIRETY, INCLUDING THE TITLE; ARTICLE IX. SIGN REGULATIONS, SECTION 9.3. SIGNS PERMITTED IN ANY DISTRICT; ARTICLE X. DEFINITION OF TERMS, SECTION 10.2. DEFINITIONS OF SPECIFIC TERMS AND WORDS, SPECIFICALLY *CONDITIONAL USE & SPECIAL INFORMATION SIGNS*; ARTICLE XII. ADMINISTRATIVE PROVISIONS, SECTION 12.4. ADMINISTRATIVE PROCEDURES, SUB-SECTION 12.43. VARIANCE AND SECTION 12.5. AMENDMENTS, IN ITS ENTIRETY; AND UPDATING THE TABLE OF CONTENTS AS APPROPRIATE. (FALCON)

AMEND Article II. General Zoning District Classifications, Section 2.1. Statement of Intent, Purpose and Zone Characteristics, by changing the title and contents of sub-section 2.18. Conditional Use Districts, as follows:

2.18. Conditional Zoning Use-Districts.

2.181. Companion Districts. Each district includes a companion conditional zoning use-district (e.g. R15 has R15/CZ CUD) where no uses are permitted by right. This district is designed for the development and use of the property subject to predetermined ordinance standards and rules imposed as part of the legislative decision creating the district and applying it to the particular property ~~All uses in the companion conditional use districts also require a conditional use permit.~~

AMEND Article III. Permitted Principal Uses and Structures by deleting “PERMITTED” from the title and also AMENDING Section 3.1 Tabulation of Permitted Uses, by changing the title and contents, as follows:

ARTICLE III. PERMITTED PRINCIPAL USES AND STRUCTURES

SECTION 3.1 TABULATION OF PERMITTED USES

Within the various use districts, as established in Article II and subject to the requirements of this ordinance, no land, building or structure shall be used and no building or structure shall be erected which is intended or designed to be used in whole

or in part for any use other than the uses allowed ~~permitted~~ by the various districts as established herein. The use regulations for the various districts are intended to be permissive in nature and none other than those specifically listed shall be construed as being allowable uses. Some land uses, may be allowed through conditional zoning use ~~district and approval of a permit~~ or by issuance of a special use permit only upon findings that certain conditions exist or should be applied, and is requested and agreed to by the property owner. The establishment of these uses shall be allowed only after review through appropriate measures and approval of plans.

Permitted uses in the various districts are indicated under the appropriate heading of the following tables. Special uses, with Board of Adjustment approval and issuance of the permit, and some uses in conditional zoning use ~~districts~~, after Board of Commissioner approval and ~~issuance of the permit~~, are also indicated in the tables. All proposed uses in any planned district require site plan review and approval and shall be in compliance with the standards of this ordinance and the Town's Subdivision Ordinance.

AMEND Article IV. Companion Districts – Conditional Use Districts by adding “ZONING” and deleting “USE” from the title and also AMENDING Section 4.1. General; Section 4.2. Restrictions on Filing of Applications; Section 4.3. Content of Applications and Conditions; Section 4.4. Action by the Joint Planning Board; Section 4.5. Action by the Falcon Board of Commissioners; 4.6. Modification to Approved Conditional Use Districts & Permits; Section 4.7. Time Limit; Section 4.8. Failure to Comply; and Section 4.9. Validation of Existing Conditional Use Overlays; as follows:

ARTICLE IV. COMPANION DISTRICTS-CONDITIONAL ZONING USE DISTRICTS

SECTION 4.1. GENERAL

The conditional ~~use-zoning~~ zoning use districts set forth herein are authorized by N.C. Gen. Stat. §160A-382, and are intended to modify the uses to which the parallel zoning district is restricted. Generally, an applicant, by seeking to rezone property to a conditional zoning use ~~district~~, will propose to restrict or eliminate permitted, conditional or special uses. Requests for conditional zoning use ~~district rezoning~~ shall be processed administratively in the same manner as for amendments to this ordinance as established in Article 12.5.

Conditional zoning use ~~districts~~ are floating districts that parallel general zoning districts. Conditional zoning use ~~districts~~ are identical to their corresponding general zoning districts in all respects except that a ~~conditional-use~~ permit is required as a prerequisite to any use (permitted, conditional or special) or development within them.

Parallel conditional zoning use districts are provided as a voluntary alternative method of petitioning the Board of Commissioners for a zoning map or classification change. The owner may submit conditions that restrict the uses that would otherwise be allowed in the zoning district and only those uses specifically requested in the application shall be considered.

SECTION 4.2. RESTRICTIONS ON FILING OF APPLICATIONS

A request for a conditional zoning use district rezoning shall be initiated only by an application [petition] signed by all current record owners of the property.

SECTION 4.3. CONTENT OF APPLICATIONS AND CONDITIONS

~~A properly submitted application for a Conditional Use District incorporates a petition for rezoning and an application for a Conditional Use Permit, which may be combined in one application.~~ The conditional zoning use district application shall provide the minimum information requirements set forth below, however, additional information may be required by the Planning and Inspections Staff, Planning Board or the Board of Commissioners when requested if any of the aforementioned deem it necessary in order to be able to make a recommendation on, or decision regarding, the application a required finding. Such requests may include a requirement for a more detailed site plan, or one modified in accordance with additional or modified conditions and other performance criteria.

(a) *Proposed uses.* Proposed uses shall be set forth in detail, including the compatibility with the uses in the neighboring districts. Any limitations or conditions to be placed on the proposed uses to enhance compatibility with and benefit to surrounding areas shall also be set forth.

(b) *Dimensional requirements.* The application shall show that the uses comply with dimensional requirements for the district requested. If the applicant proposes to vary the dimensional requirements for the district requested, it shall be demonstrated that the public purposes to be accomplished by any such dimensional requirement are met to an equal or greater degree.

(c) *Sign requirements.* The application shall indicate the location of signs in accordance with Article IX, Sign Regulations. If the applicant proposes to vary the sign provisions for the district requested, it shall be demonstrated that the public purposes to be accomplished by any such provisions are met to an equal or greater degree.

(d) *Off-street parking requirements.* The application shall indicate the location of all off-street parking and internal drive areas in accordance with Article VIII, Off-Street Parking and Loading, provisions. If the applicant proposes to vary the off-street parking provisions of this ordinance for the use requested, it shall be demonstrated that the public purposes to be accomplished by any such provisions are met to an equal or greater degree.

(e) *Miscellaneous provisions.* The application for a Conditional Use Permit may also set forth other conditions and performance criteria, such as days and hours of operation, numbers of employees, exterior lighting, and noise, odor and smoke emission controls or other environmental conditions, which might be proposed to make the use of the property compatible with surrounding areas and uses allowed therein.

(f) *Site plan requirement.* The application shall include a site plan drawn to the specifications of Section 12.45. If the proposed uses involve development subject to the Town's Subdivision Ordinance, the site plan required may be general in nature, showing a generalized street pattern, if applicable, and the location of proposed uses. If the proposed uses include development not subject to the Town's Subdivision Ordinance, the site plan shall be of sufficient detail to allow the Planning and Inspections Staff, the Planning Board, and the Board of Commissioners to analyze the proposed uses and arrangement of uses on the site. It shall also include the footprints of all buildings to be placed on the site, the proposed number of stories, and the location and number of off-street parking and loading spaces. The site plan shall show proposed points of access to existing streets and internal circulation patterns. In addition, the location of all proposed buffers and fences shall be included on the site plan.

SECTION 4.4. ACTION BY THE JOINT PLANNING BOARD

The Joint Planning Board may hold a public hearing during which the applicant may voluntarily make modifications to the Conditional Use Permit request. ~~The hearing shall follow quasi-judicial requirements including sworn testimony, the reliance on competent evidence, avoiding ex parte contact and bias, and basing findings of fact on evidence in the record. Board members shall disclose on the record at the public hearing any site visit they may have made to the affected property or any incidental ex parte contact he/she may have had with an affected party.~~ The Planning Board shall review the request for a Conditional Use Permit and conditional zoning use district rezoning and make a recommendation to the Board of Commissioners. When favorably recommending approval of the conditional zoning use district, the Planning Board shall issue a statement addressing the reasonableness of the proposed rezoning, in addition to addressing the request's consistency with the current Land Use Plan for the area in which the subject property is located. ~~In recommending the Conditional Use Permit, the Planning Board shall find that:~~

~~(a) The use will not materially endanger the public health or safety if located according to the plan submitted and recommended;~~

~~(b) The use meets all required conditions and specifications;~~

~~(c) The use will maintain or enhance the value of adjoining or abutting properties, or that the use is a public necessity; and~~

~~(d) The location and character of the use, if developed according to the plan as submitted and recommended, will be in harmony with the area in which it is to be located and in general conformity with the Town's most recent Land Use Plan and adopted planning policies.~~

SECTION 4.5. ACTION BY THE FALCON BOARD OF COMMISSIONERS

~~The Board of Commissioners shall hold a public hearing to consider the conditional zoning use district rezoning and Conditional Use Permit. The hearing shall follow quasi-judicial requirements including sworn testimony, the reliance on competent evidence, avoiding ex parte contact and bias, and basing findings of fact on evidence in the record. Board members shall disclose on the record at the public hearing any site visit they may have made to the affected property or any incidental ex parte contact he/she may have had with an affected party.~~

~~The Board of Commissioners shall review the application, recommendations from the Joint Planning Board, suggested conditions, and other information presented at the public hearing. If the Board of Commissioners approves the rezoning application, a statement analyzing the reasonableness of the proposed rezoning along with addressing the consistency of the request with the current Land Use Plan for the area in which the subject property is located shall be made a part of the record. Only upon approval of the Conditional Use District shall the Board of Commissioners consider approval of the Conditional Use Permit.~~

~~In approving the application, the Board of Commissioners, with mutual agreement of the property owner(s), by separate motion, shall approve the Conditional Use Permit and may attach such reasonable requirements or conditions in addition to those specified in the Joint Planning Board's recommendation, and shall find that the application meets the findings listed in Section 4.4. Sub-sections (a) through (d). All conditions shall be stated in the permit and no condition shall be less restrictive than the standards of the parallel general use district. The conditions may include, but shall not be limited to:~~

~~(a) The location of the proposed use on the property;~~

~~(b) The number and location of structures;~~

~~(c) The location and extent of accessory and support facilities, such as parking lots, driveways, fences and access streets;~~

~~(d) The location and extent of buffer areas and other special purpose areas on the property;~~

~~(e) The height of any structure;~~

~~(f) The phasing of development;~~

(a) Other restrictions on the use of the property that adhere to the purposes of this ordinance and maintain the public health, safety and welfare; and

(b) Such other matters as the applicants shall propose.

The record shall reflect that the applicant voluntarily agrees to all conditions proposed for approval of the Conditional Use Permit.

SECTION 4.6. MODIFICATION TO APPROVE CONDITIONAL ZONING USE DISTRICTS & PERMITS

All modifications, including changes in use and/or increase in density, to approved conditional zoning use districts and Permits, other than those listed below, shall be reviewed in the same manner as a new project.

The following minor modifications to the approval for a conditional zoning district Use Permit may be approved by the Planning and Inspections Staff without re-approval by the Board of Commissioners, provided no variance is required, the use does not change, the intent and layout of the approved plan is generally followed, density is not increased, conditions of approval are not violated, and such changes do not cause a significant adverse impact:

(a) Slight variations in the building dimensions that do not depart from the general approved layout and not exceeding ten percent of the original approved dimensions;

(b) Minor changed in parking lot or traffic lane dimensions;

(c) Minor dimensional changed to individual lots;

(d) Minor site modifications due to necessary engineering requirements;

(e) Change of location of elements included on the site plan that generally maintains relative alignment and orientation to the approved site plan; and

(f) Other similar insignificant changes.

In reviewing such changes, the Planning and Inspections Staff may require that the modification be handled in the same manner as a new application.

SECTION 4.7. TIME LIMIT

Once the conditional zoning use district rezoning is and Conditional Use Permit are approved, all conditions attached thereto shall be binding upon the property and all subsequent development and use of the property shall be in accordance with the

approved application permit and conditions. Since the intent of this type of district is to provide for workable alternative uses of property, it is intended that land will be zoned in accordance with firm plans to develop. Therefore, at the end of two years from the date of approval, the Board of Commissioners may examine progress made to determine if active efforts are proceeding. If the Board of Commissioners determines that active efforts to develop are not proceeding, the board may institute proceedings to rezone the property to its previous zoning classification.

SECTION 4.8. FAILURE TO COMPLY

If for any reason any condition imposed pursuant to this section is found to be illegal, or if the applicant should fail to accept any condition, the authorization of such conditional zoning district use Permit shall be null and void and of no effect, and the Town Board of Commissioners or the Planning and Inspections Director, hereinafter Director, property shall initiate a rezoning to remain in, or revert the zoning of the property to, its previous zoning classification.

Compliance with all conditions of a conditional zoning district use permit is an essential element of the conditional zoning district's use permit continued validity and effectiveness. If the Planning and Inspections Director, hereinafter Director, determines that a developer has failed to comply with a condition of an approved conditional zoning district use permit, the Director shall so notify the property owner(s) or the property owner(s)' developer or the developer's successor in interest in writing and shall place the matter on the Board of Commissioners' agenda, after consideration by the Joint Planning Board and upon issuance of its recommendation, for the Board of Commissioners' hearing and decision whether or not to revoke the conditional zoning district use permit and revert the zoning of the property to its previous zoning district. Such hearing shall be on reasonable written notice to the property owner(s) or the property owner(s)' developer or the developer's successor in interest and shall be a quasi-judicial proceeding according to quasi-judicial procedures. The decision of the Board of Commissioners shall be a final decision, and a decision to revoke the conditional zoning district use permit may be appealed to the Superior Court of Cumberland County within 30 days after the property owner(s) or the property owner(s)' developer or the developer's successor in interest has been served with written notice of the Board of Commissioners' decision. Service by personal delivery or certified mail, return receipt requested, of a certified copy of the Board of Commissioners' approved minutes for its meeting at which such decision is made, shall constitute written notice and service of the Board of Commissioners' decision hereunder.

SECTION 4.9. VALIDATION OF EXISTING CONDITIONAL USE OVERLAYS AND CONDITIONAL USE DISTRICTS AND PERMITS.

Nothing in this ordinance shall be interpreted to affect or impair any rights accrued pursuant to any conditional use overlay district and permit, under the Town Zoning Ordinance of March 5, 1991, and subsequent amendments, prior to the effective date of

this amendment. In addition, nothing in this ordinance shall be interpreted to affect or impair any rights accrued pursuant to a condition use district and permit approved prior to <enter date of adoption of this amendment>. All valid and legally approved conditional use overlay districts or conditional use districts and the permits shall continue to be valid provided that terms of the permit are not substantially or materially altered or expanded in any manner, that all conditions and requirements of the permit are and continue to be complied with and that the use does not cease for a period of one calendar year. Failure to comply with the conditions of the permit for the conditional use overlays or a conditional use district will subject the property owner and/or developer and/or current owner to possible revocation pursuant to Section 4.8 above.

AMEND Article IX. Sign Regulations, Section 9.3. Signs Permitted in any District, as indicated below:

SECTION 9.3. SIGNS PERMITTED IN ANY DISTRICT

9.36. Special Informational Signs.

Signs and on-site signs pertaining to ~~specified conditional~~ uses where not otherwise permitted may be approved by the Board of Adjustment subject to a special use permit specifying the size, location, lighting, design, and display. Such signs shall be limited to those which are necessary to inform the public as to location and information concerning facilities, institutions, business districts, fraternal orders and service clubs, or such other activity as the board may judge to be beneficial to the total community.

AMEND Article X. Definition of Terms, Section 10.2. Definitions of Specific Terms and Words, specifically the terms *Conditional use* and *Special informational signs*, as indicated below:

SECTION 10.2 DEFINITIONS OF SPECIFIC TERMS AND WORDS

Conditional use: A use or occupancy of a structure, or a use of land, permitted only upon the successful rezoning to a conditional zoning use district and ~~subsequent issuance of a Conditional Use Permit~~ and made subject to the limitations and conditions specified therein.

Special informational signs: For the purpose of giving directions and information, on-site signs pertaining to ~~specified conditional~~ uses where not otherwise permitted, and off-premises signs may be approved by the Board of Adjustment subject to subject to a permit specifying the size, location, lighting, design and display in accordance with Article IX. Sign Regulations. Such signs shall be limited to those which are necessary to inform the public as to location and information concerning facilities, institutions, business districts, fraternal orders and service clubs, or such other activity as the Board may judge to be beneficial to the total community.

AMEND Article XII. Administrative Provisions, Section 12.4. Administrative Procedures, sub-section 12.43. Variance, as follows:

12.43. Variance.

[Editor's note: Below is the very last paragraph of the section and is the only item proposed to be amended within Section 12.43.]

The Board of Adjustment is not authorized to grant variances to the conditional uses allowed in conditional zoning use ~~overlay~~ districts or to the specific conditions or other performance criteria imposed upon such uses.

AMEND Article XII. Administrative Provisions, Section 12.5. Amendments, sub-section 12.51. Submissions to and Consideration Thereof by the Planning Board; 12.52. Petitions for Amendments Limited; Reapplications Limited; and 12.53. Approval by the Town Board of Commissioners; as indicated below:

12.51. Submissions to and Consideration Thereof by the Planning Board.

(a) Petitions for amendments or other changes of this ordinance shall be submitted in the form set forth in this ordinance, if applicable, or otherwise as prescribed by the Planning Board. Submissions by the Town Board of Commissioners ~~Council~~ or by the Planning Board on its own initiative are not subject to any requirement of form.

(b) The Planning Board, upon receipt of a proposal for amendment, by petition or otherwise, and upon notice to land owners as by law required, will consider each proposed amendment or change and may hold public hearings, ~~public notice of which shall be given,~~ for such consideration. Upon petition or other proposal for an amendment of the ordinance for the purpose of establishing a specific zoning district or specifically establishing a specific zoning district or for the purpose of establishing a conditional zoning Use ~~Use~~ district or specifically changing the classification of a existing district or part thereof, the Planning Board may consider proposing an amendment to amending the ordinance to provide a classification or reclassification other than that specifically requested, and so recommend, provided that the notice to land owners and notice of public hearing required by law states that classifications or reclassifications other than that requested will be considered. If upon receipt of a proposal to reclassify one type of general zoning district to another, the Planning Board proposes or has received a proposal from the Town Board of Commissioners to consider establishment of a conditional zoning use ~~zoning use~~ district, it must refer such proposal to the owners of the property to be included in such district for submission of a petition in accordance with the provisions of Article IV hereof; no consideration of such a proposal can be made unless and until such a petition is received.

(c) Following consideration of proposed amendments, supplements, changes, modifications, or repeal of provisions of the ordinance, the Planning Board will report all proposals it has considered to the Town Board of Commissioners ~~Council~~ and make

recommendations pertaining thereto. Failure of the Planning Board to make a report and recommendation within a period of ~~thirty (30)~~ days after a petition for a specific amendment has been referred to it will constitute a favorable report and recommendation for such amendment.

12.52. Petitions for Amendments Limited; Reapplications Limited.

After the initial zoning process in a zoning area, an initial petition to amend the zoning ordinance so as to reclassify property in that area may be submitted at any time. After the first such petition has been submitted, regardless of the outcome thereof, no subsequent petition, by the same or other persons, to reclassify the same property or any portion thereof, whether in conjunction with other property or not, shall be considered earlier than one (1) full year after the date of the last public hearing before the Town Board of Commissioners Council on the most recent prior application to reclassify such property or portion thereof. A petition to amend the zoning ordinance so as to reclassify property may be withdrawn without establishing a new one-year time limit only by a written instrument submitted to the office of the Planning and Inspections Director prior to the first official notification to the public concerning the petition. If the instrument withdrawing a petition to reclassify property is received after such first notification of the public, the withdrawal shall be effective, but a subsequent petition to reclassify the same property or part thereof, as set forth above, shall not be considered earlier than one (1) full year after the date of the receipt of the withdrawal instrument. The foregoing time limits on petitions to reclassify property shall not apply to amendments of any nature initiated by the Planning Board or the Town Board of Commissioners Council.

12.53. Approval by the Town Board of Commissioners.

(a) Upon receipt of reports and recommendations from the Planning Board concerning proposed amendments, supplements, changes, modifications, or repeal provisions of this ordinance, the Town Board of Commissioners Council shall schedule a public hearing, upon notice to landowners of proposed action and notice of the public hearing as required by law, and thereafter shall approve or deny the proposed action. A failure to approve a proposed action shall constitute a denial of the proposal.

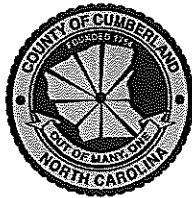
(b) The Town Board of Commissioners Council may approve an amendment of the ordinance to provide a classification or reclassification of a zoning district or part thereof, other than that specifically requested by a petitioner, provided that the notice to land owners and the notice of public hearing required by law states that classifications or reclassifications other than that requested will be considered and further provided that the Planning Board has considered such other classifications or reclassifications and reported on them to the Town Board of Commissioners Council. If such notice or such consideration has not been accomplished, the Town Board of Commissioners Council shall refer its proposal to amend the ordinance in a way other than that proposed by the petitioner to the Planning Board for further action in accordance with this ordinance.

(c) To approve any amendment, supplement, change, modification, or repeal of any provision of this ordinance, the Town Board of Commissioners shall address the consistency of the action with the current Land Use Plan; and make a finding and determination, entered in the minutes of the meeting, that such action is reasonable, neither arbitrary or unduly discriminatory and in the public interest. In the case of the approval of the establishment of a general zoning district or the reclassification of an existing general zoning district to another type of general zoning district, the board shall make an additional finding and determination that the property within the district is suitable for all uses permitted by the new classification. Consideration of any conditional zoning use-district is governed by Article IV of this ordinance.

Walter Clark,
Chair
Cumberland County

Patricia Hall,
Vice-Chair
Town of Hope Mills

Garland C. Hostetter,
Town of Spring Lake
Harvey Cain, Jr.,
Town of Stedman
Charles C. Morris,
Town of Linden



CUMBERLAND
★ **COUNTY** ★
NORTH CAROLINA

Planning & Inspections Department

May 14, 2013

Thomas J. Lloyd,
Director

Cecil P. Combs,
Deputy Director

Lori Epler,
Sara E. Piland,
Vikki Andrews,
Cumberland County

Benny Pearce,
Town of Eastover

Donovan McLaurin,
Wade, Falcon & Godwin

MEMORANDUM

TO: Cumberland County Joint Planning Board
FROM: Planning and Inspections Staff
SUBJECT: Staff Recommendation for the May 21, 2013 Board Meeting

P13-13. REZONING OF 2.78+/- ACRES FROM M(P) PLANNED INDUSTRIAL TO A1 AGRICULTURAL OR TO A MORE RESTRICTIVE ZONING DISTRICT; LOCATED AT 2276 CLARK WEST ROAD AND ON THE SOUTHWEST SIDE OF SR 2217 (CLARK WEST ROAD), EAST OF SR 2216 (EVANS DAIRY ROAD); SUBMITTED BY STEPHEN M. & ELIZABETH CRUMPLER CLARK AND HENRY E. & MILDRED M. CLARK (OWNERS).

The Planning and Inspections Staff recommends approval of the A1 Agricultural district for this request based on the following:

The subject properties' current zoning classification of M(P) Planned Industrial District is the result of a mapping error related to the approval and digitizing of case P99-63 (A1 and CD to M(P) approved on 09/20/1999). This request is reasonable and consistent as it is simply a correction returning the subject properties to their original zoning classification of A1 Agricultural.

There are no other districts considered suitable for this request.

Attachments:

- 1 – Site Profile
- 2 – Sketch Map

P13-13
SITE PROFILE

P13-13. REZONING OF 2.78+/- ACRES FROM M(P) PLANNED INDUSTRIAL TO A1 AGRICULTURAL OR TO A MORE RESTRICTIVE ZONING DISTRICT; LOCATED AT 2276 CLARK WEST ROAD AND ON THE SOUTHWEST SIDE OF SR 2217 (CLARK WEST ROAD), EAST OF SR 2216 (EVANS DAIRY ROAD); SUBMITTED BY STEPHEN M. & ELIZABETH CRUMPLER CLARK AND HENRY E. & MILDRED M. CLARK (OWNERS).

Site Information:

Frontage & Location: 294.19'+/- on SR 2217 (Clark West Road)

Depth: 523.69'+/-

Jurisdiction: Cumberland County

Adjacent Property: Yes, northwest of subject property

Current Use: 1 residential structure & vacant woodlands

Initial Zoning: A1 – September 14, 1979 (Area 9); rezoned to M(P) on September 20, 1999

Nonconformities: Residential use not permitted in M(P) district

Zoning Violation(s): None

Surrounding Zoning: North: A1 & CD; South & West: M(P), A1 & CD; East: M(P) & A1

Surrounding Land Use: Residential (including manufactured dwellings), farmland & woodlands

2030 Growth Strategy Map: Urban

Special Flood Hazard Area (SFHA): None

Water/Sewer Availability: PWC/Septic

Soil Limitations: None

School Capacity/Enrolled: Seabrook Elementary: 310/272; Mac Williams Middle: 1,270/1,231;

Cape Fear High: 1,425/1,589

Subdivision/Site Plan: If approved, any new development will require review and approval

Average Daily Traffic Count (2010): 220 on SR 2216 (Evans Dairy Road)

Highway Plan: There are no road improvements/constructions specified for this area. This case has no impact on the current Highway Plan or Transportation Improvement Program

Notes:

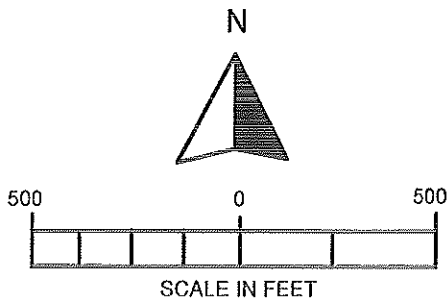
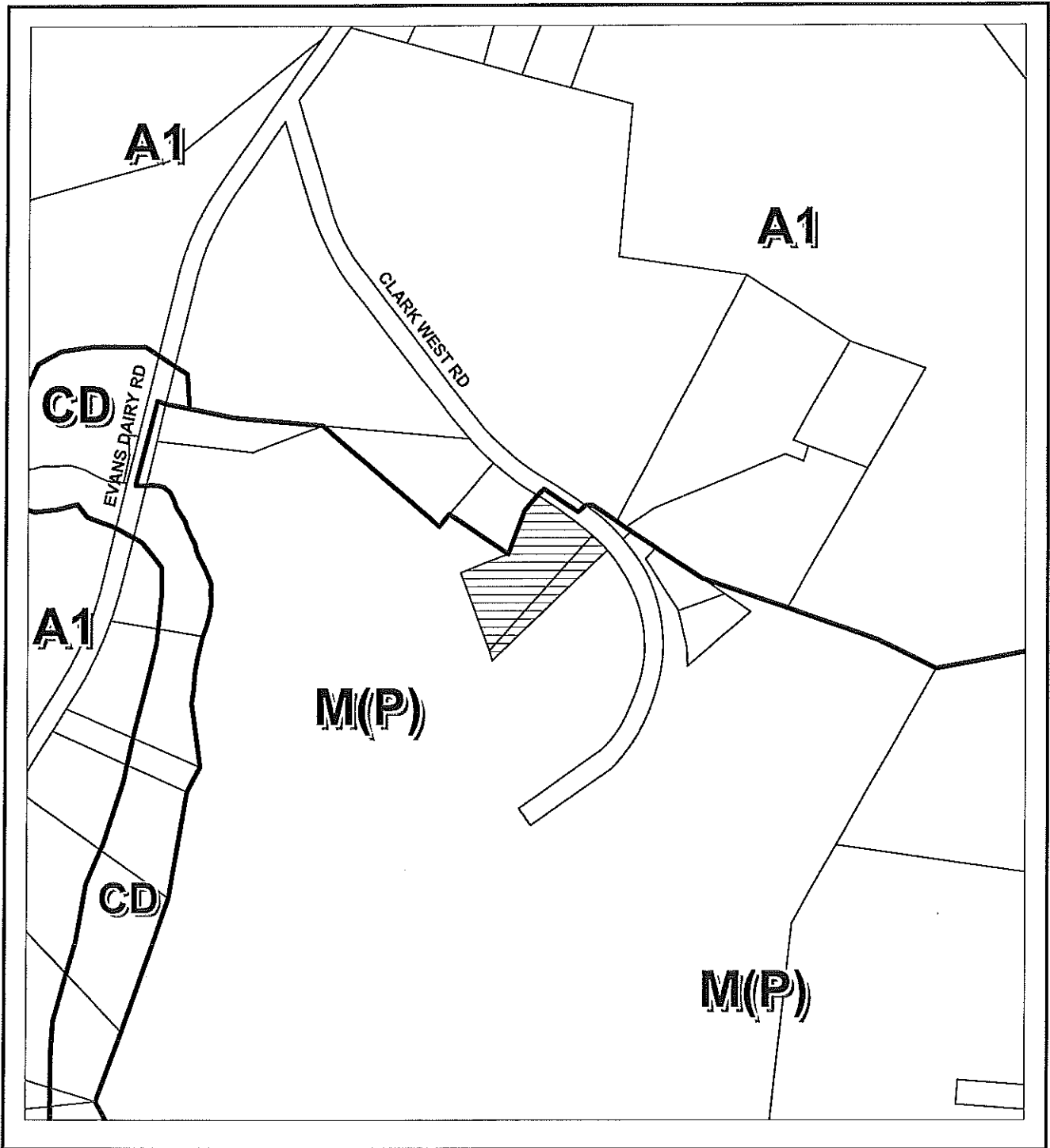
1. Density:
A1 – 1 lot/unit

2. Minimum Yard Setback Regulations:

<u>M(P)</u>	<u>A1</u>
Front yard: 100'	Front yard: 50'
Side yard: 50'	Side yard: 20"
Rear yard: 50'	Rear yard: 50'

First Class and Record Owners' Mailed Notice Certification

A certified copy of the tax record owner(s) of the subject and adjacent properties and their tax record mailing address is contained within the case file and is incorporated by reference as if delivered herewith.

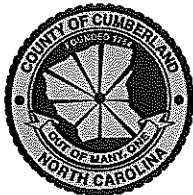


REQUESTED REZONING M(P) TO A1

ACREAGE: 2.78 AC.+/-	HEARING NO: P13-13	
ORDINANCE: COUNTY	HEARING DATE	ACTION
STAFF RECOMMENDATION		
PLANNING BOARD		
GOVERNING BOARD		

PIN: 0455-51-5464
 PIN: 0455-51-5505

AM



Walter Clark,
Chair
Cumberland County

Patricia Hall,
Vice-Chair
Town of Hope Mills

Garland C. Hostetter,
Town of Spring Lake
Harvey Cain, Jr.,
Town of Stedman
Charles C. Morris,
Town of Linden

CUMBERLAND
★ COUNTY ★
NORTH CAROLINA

Planning & Inspections Department

May 14, 2013

Thomas J. Lloyd,
Director

Cecil P. Combs,
Deputy Director

Lori Epler,
Sara E. Pfland,
Vikki Andrews,
Cumberland County

Benny Pearce,
Town of Eastover

Donovan McLaurin,
Wade, Falcon & Godwin

MEMORANDUM

TO: Cumberland County Joint Planning Board
FROM: Planning and Inspections Staff
SUBJECT: Staff Recommendation for the May 21, 2013 Board Meeting

P13-14. REZONING OF 23.78+/- ACRES FROM R40 RESIDENTIAL TO R20 RESIDENTIAL OR TO A MORE RESTRICTIVE ZONING DISTRICT; LOCATED ON THE NORTHWEST SIDE OF RAMSEY STREET, NORTHEAST W REEVES BRIDGE ROAD; SUBMITTED BY W. STAN TAYLOR (TRUSTEE) ON BEHALF OF KM TAYLOR FAMILY TRUST (OWNER).

The Planning and Inspections Staff recommends approval of the R20 Residential district based on the following:

1. The district requested is consistent with the 2030 Growth Vision Plan, which calls for "rural" at this location, as well as meeting the location criteria for "suburban density residential" development as listed in the Land Use Policies Plan; the request is also consistent with the North Central Land Use Plan which calls for suburban density at this location;
2. Consideration of the R20 Residential district for the subject property is reasonable because the request is comparable to development and rezonings approved within the general area in the recent past; and
3. Public water is available to the subject property.

The R30 Residential district could also be considered suitable for this request.

Attachments:

- 1 – Site Profile
- 2 – Sketch Map

P13-14
SITE PROFILE

P13-14. REZONING OF 23.78+/- ACRES FROM R40 RESIDENTIAL TO R20 RESIDENTIAL OR TO A MORE RESTRICTIVE ZONING DISTRICT; LOCATED ON THE NORTHWEST SIDE OF RAMSEY STREET, NORTHEAST W REEVES BRIDGE ROAD; SUBMITTED BY W. STAN TAYLOR (TRUSTEE) ON BEHALF OF KM TAYLOR FAMILY TRUST (OWNER).

Site Information:

Frontage & Location: 580.00'+/- on US 401 (Ramsey Street)

Depth: 1980.00'+/-

Jurisdiction: Cumberland County

Adjacent Property: No

Current Use: Woodlands

Initial Zoning: A1 – December 17, 2001 (Area 16); rezoned to R40 on September 19, 2011

Nonconformities: None

Zoning Violation(s): None

Surrounding Zoning: North: R20 & A1; South: R40A, R40, R20 & A1; East & West: A1

Surrounding Land Use: Residential (including manufactured dwellings), farmland & woodlands

2030 Growth Strategy Map: Rural

North Central Land Use Plan: Suburban density residential

Special Flood Hazard Area (SFHA): None

Water/Sewer Availability: Linden/ Septic

Soil Limitations: None

School Capacity/Enrolled: Raleigh Road Elementary (K-1): 220/230; Long Hill Elementary (2-5): 460/475;

Pine Forest Middle: 820/760; Pine Forest High: 1,750/1,620

Subdivision/Site Plan: If approved, any new development will require review and approval

Average Daily Traffic Count (2010): 6,300 on US 401 (Ramsey Street)

Highway Plan: Ramsey Street is identified in the highway plan as a Major Thoroughfare. The current right-of-way is 100 feet and the proposal calls for a multi-lane facility (R-2609) with a ROW of 200 feet. Road improvements are post years and the project is unfunded. This proposal would require a 25 foot reservation for future acquisition by the NCDOT

Notes:

1. Density minus 15% for R/W:

A1 – 10 lots/units

R40 – 22 lots/units

R30 – 29 lots/units

R20 – 44 lots/units

R15 – 59 lots/units

2. Minimum Yard Setback Regulations:

A1

Front yard: 50'

Side yard: 20'

Rear yard: 50'

R40, R30 & R20

Front yard: 30'

Side yard: 15'

Rear yard: 35'

R15

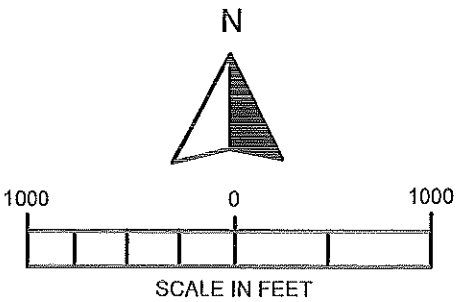
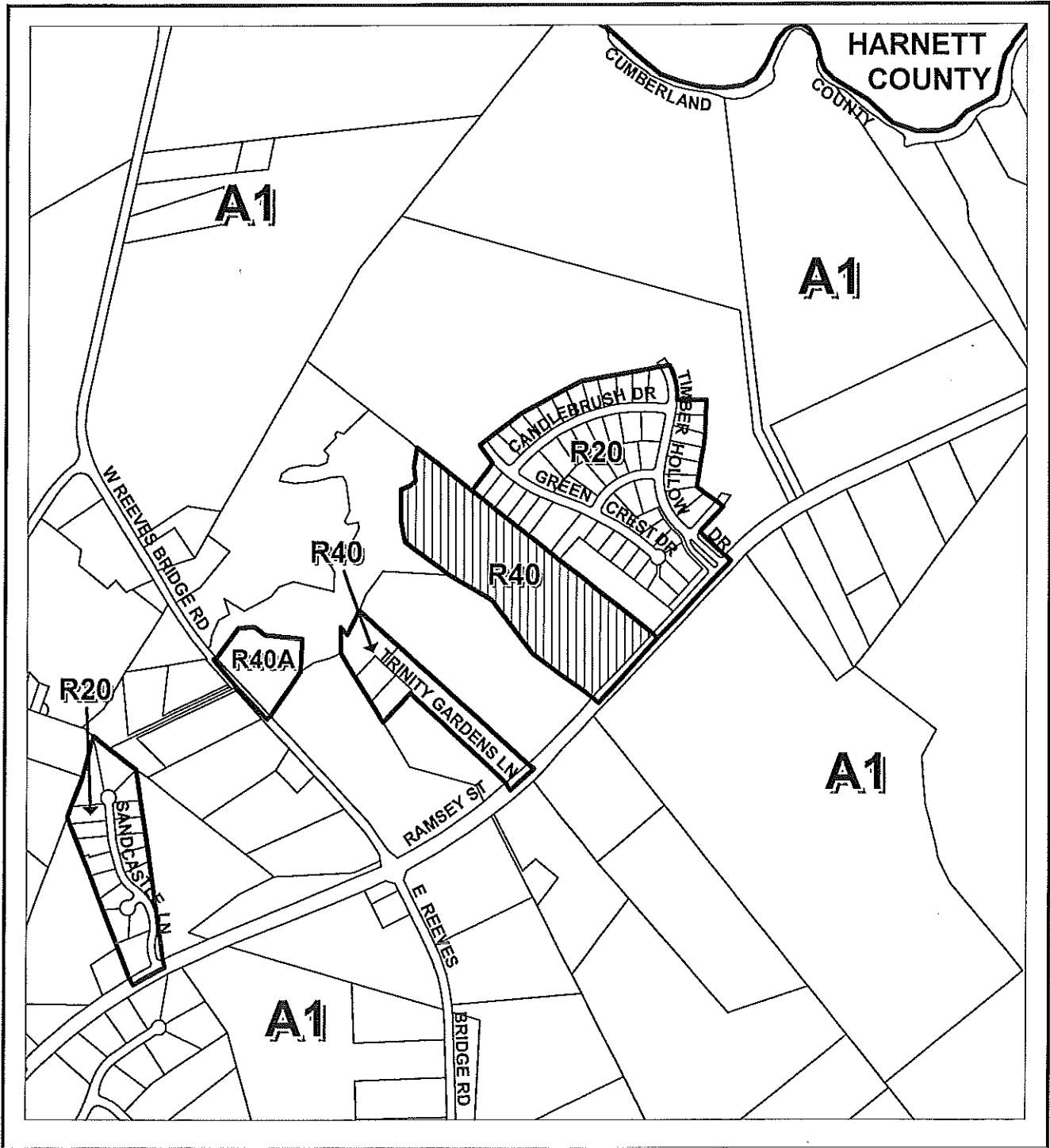
Front yard: 30'

Side yard: 10'

Rear yard: 35'

First Class and Record Owners' Mailed Notice Certification

A certified copy of the tax record owner(s) of the subject and adjacent properties and their tax record mailing address is contained within the case file and is incorporated by reference as if delivered herewith.



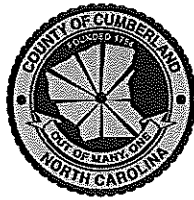
REQUESTED REZONING R40 TO R20

ACREAGE: 23.78 AC. +/-	HEARING NO: P13-14	
ORDINANCE: COUNTY	HEARING DATE	ACTION
STAFF RECOMMENDATION		
PLANNING BOARD		
GOVERNING BOARD		

Walter Clark,
Chair
Cumberland County

Patricia Hall,
Vice-Chair
Town of Hope Mills

Garland C. Hostetter,
Town of Spring Lake
Harvey Cain, Jr.,
Town of Stedman
Charles C. Morris,
Town of Linden



CUMBERLAND
★ **COUNTY** ★
NORTH CAROLINA

Planning & Inspections Department

May 14, 2013

Thomas J. Lloyd,
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Lori Epler,
Sara E. Piland,
Vikki Andrews,
Cumberland County

Benny Pearce,
Town of Eastover

Donovan McLaurin,
Wade, Falcon & Godwin

MEMORANDUM

TO: Cumberland County Joint Planning Board
FROM: Planning and Inspections Staff
SUBJECT: Staff Recommendation for the May 21, 2013 Board Meeting

P13-18. REZONING OF 2.56+/- ACRES FROM A1 AGRICULTURAL TO R40 OR TO A MORE RESTRICTIVE ZONING DISTRICT, LOCATED ON THE NORTH SIDE OF SR 2245 (THROWER ROAD) AND ON THE EAST SIDE OF SR 2372 (NORTH FORK LANE), SUBMITTED BY ELLA M. MCNAIR (OWNER) AND TIMOTHY B. EVANS.

The Planning and Inspections Staff recommends approval of the R40 Residential district based on the following:

1. The district requested is consistent with the 2030 Growth Vision Plan, which calls for "rural" at this location, as well as meeting the location criteria for "rural density residential" development as listed in the Land Use Policies Plan; and
2. The location and character of the district is reasonable and will be in harmony with the surrounding area.

There are no other districts considered suitable for this request.

Attachments:

- 1 – Site Profile
- 2 – Sketch Map

P13-18
SITE PROFILE

P13-18. REZONING OF 2.56+/- ACRES FROM A1 AGRICULTURAL TO R40 OR TO A MORE RESTRICTIVE ZONING DISTRICT, LOCATED ON THE NORTH SIDE OF SR 2245 (THROWER ROAD) AND ON THE EAST SIDE OF SR 2372 (NORTH FORK LANE), SUBMITTED BY ELLA M. MCNAIR (OWNER) AND TIMOTHY B. EVANS.

Site Information:

Frontage & Location: 262.53'+/- on SR 2245 (Thrower Road) & 112.93'+/- on SR 2372 (North Fork Lane)

Depth: 431.78'+/-

Jurisdiction: Cumberland County

Adjacent Property: No

Current Use: Vacant land

Initial Zoning: A1 – June 25, 1980 (Area 13)

Nonconformities: None

Zoning Violation(s): None

Surrounding Zoning: North: RR, A1A & A1; South & East: A1; West: R40 & A1

Surrounding Land Use: Residential (including manufactured dwellings), farmland & woodlands

2030 Growth Strategy Map: Rural

Special Flood Hazard Area (SFHA): None

Water/Sewer Availability: Well/Septic

Soil Limitations: None

School Capacity/Enrolled: Alderman Road Elementary: 750/646; Gray's Creek Middle: 1,000/1,001; Gray's Creek High: 1,270/1,234

Subdivision/Site Plan: If approved, new development may require review and approval

Average Daily Traffic Count (2010): 290 on SR 2245 (Thrower Road)

Highway Plan: There are no road improvements/constructions specified for this area. This case has no impact on the current Highway Plan or Transportation Improvement Program

Notes:

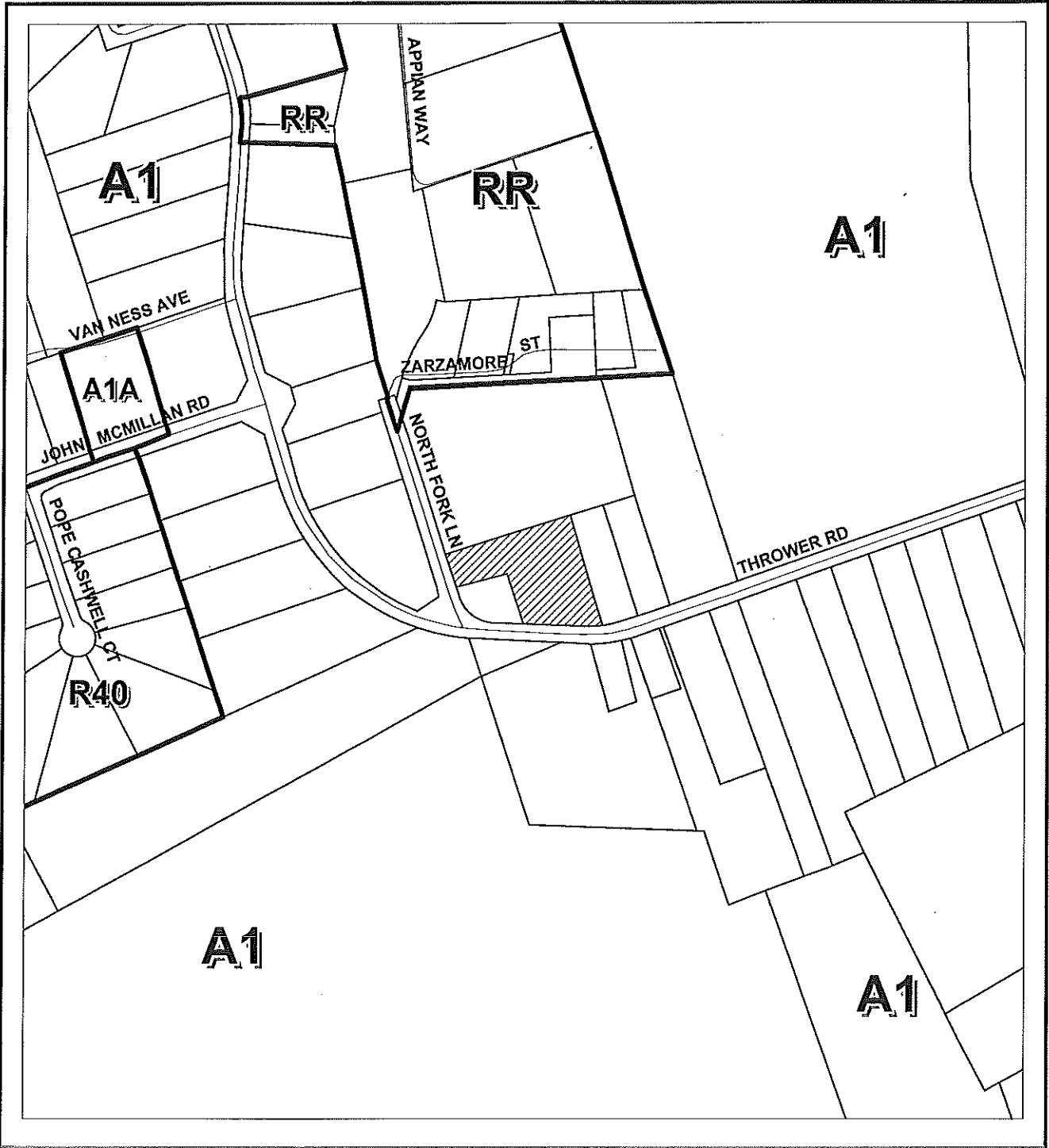
1. Density:
A1 – 1 lot/unit
R40 – 2 lots/units

2. Minimum Yard Setback Regulations:

<u>A1</u>	<u>R40</u>
Front yard: 50'	Front yard: 30'
Side yard: 20'	Side yard: 15'
Rear yard: 50'	Rear yard: 35'

First Class and Record Owners' Mailed Notice Certification

A certified copy of the tax record owner(s) of the subject and adjacent properties and their tax record mailing address is contained within the case file and is incorporated by reference as if delivered herewith.



SCALE IN FEET

REQUESTED REZONING A1 TO R40

ACREAGE: 2.56 AC.+/-	HEARING NO: P13-18	
ORDINANCE: COUNTY	HEARING DATE	ACTION
STAFF RECOMMENDATION		
PLANNING BOARD		
GOVERNING BOARD		

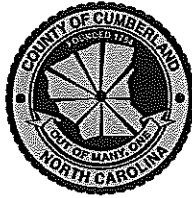
PIN: 0431-99-3721

AM

Walter Clark,
Chair
Cumberland County

Patricia Hall,
Vice-Chair
Town of Hope Mills

Garland C. Hostetter,
Town of Spring Lake
Harvey Cain, Jr.,
Town of Stedman
Charles C. Morris,
Town of Linden



CUMBERLAND
★ **COUNTY** ★
NORTH CAROLINA

Planning & Inspections Department

May 14, 2013

Thomas J. Lloyd,
Director

Cecil P. Combs,
Deputy Director

Lori Epler,
Sara E. Piland,
Vikki Andrews,
Cumberland County

Benny Pearce,
Town of Eastover

Donovan McLaurin,
Wade, Falcon & Godwin

MEMORANDUM

TO: Cumberland County Joint Planning Board
FROM: Planning & Inspections Staff
SUBJECT: Staff Recommendation for the May 21, 2013 Board Meeting

P13-05. REZONING OF 2.51+/- ACRES FROM A1 AGRICULTURAL TO R40 RESIDENTIAL OR TO A MORE RESTRICTIVE ZONING DISTRICT, LOCATED AT 1348 BAINBRIDGE ROAD, SUBMITTED BY WALTER SCOTT AND SYLVIA DELORIS MANNING (OWNERS) AND ROBERT M. BENNETT.

On April 17, 2013 the property owner/applicant amended the original application and is now requesting your consideration of a favorable recommendation for a R40 Residential/CZ Conditional Zoning district (R40/CZ) for two residential lots. The Planning & Inspections Staff recommends approval of the requested rezoning to R40 Residential/CZ Conditional Zoning district for two residential lots based on the following:

1. The district requested is consistent with the 2030 Growth Vision Plan, which calls for "rural" at this location, as well as meeting the location criteria for "rural density residential" development as listed in the Land Use Policies Plan;
2. The request is reasonable as the subject property is entirely surrounded by A1 Agricultural and R40 Residential and approval of this request would allow for comparable lot sizes which would most likely enhance or maintain the value of adjoining residential properties; and
3. The location and character of the use, if developed according to the plan as submitted and the recommended Ordinance Related Conditions, are reasonable as they will be in harmony with the area in which they are to be located.

There are no other zoning districts suitable as related to this request. The applicant has verbally agreed to all Ordinance Related Conditions.

Attachments:

- 1 – Site Profile
- 2 – Rezoning Sketch Map
- 3 – Site Plan
- 4 – Draft Ordinance Related Conditions
- 5 – Application

P13-05
SITE PROFILE

P13-05. REZONING OF 2.51+/- ACRES FROM A1 AGRICULTURAL TO R40 RESIDENTIAL OR TO A MORE RESTRICTIVE ZONING DISTRICT, LOCATED AT 1348 BAINBRIDGE ROAD, SUBMITTED BY WALTER SCOTT AND SYLVIA DELORIS MANNING (OWNERS) AND ROBERT M. BENNETT.

Site Information:

Frontage & Location: 140.16'+/- on SR 1851 (Bainbridge Road) & 407.91'+/- on SR 1853 (John Nunnery Road)

Depth: 316.74'+/-

Jurisdiction: Cumberland County

Adjacent Property: No

Current Use: 1 accessory structure

Initial Zoning: A1 – September 3, 1996 (Area 20)

Nonconformities: Yes, subject property has an accessory structure with no principal use

Zoning Violation(s): None

Surrounding Zoning: North: RR & A1; South: R30 & A1; East: R40 & A1; West: A1

Surrounding Land Use: Residential (including manufactured dwellings), farmland & woodlands

2030 Growth Strategy Map: Rural

Special Flood Hazard Area (SFHA): None

Water/Sewer Availability: Well/Septic

Soil Limitations: Yes, hydric – TR Torhunta and Lynn Haven soils

School Capacity/Enrolled: Stedman Primary (K-1): 200/162; Stedman Elementary (2-5): 300/288; Mac Williams Middle: 1,270/1,231; Cape Fear High: 1,425/1,589

Subdivision/Site Plan: If approved, "Ordinance Related Conditions" will apply

Average Daily Traffic Count (2010): 980 on SR 1851 (Bainbridge Road) & 670 on SR 1853 (John Nunnery Road)

Highway Plan: There are no road improvements/constructions specified for this area. This case has no impact on the current Highway Plan or Transportation Improvement Program

Notes:

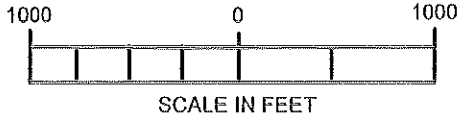
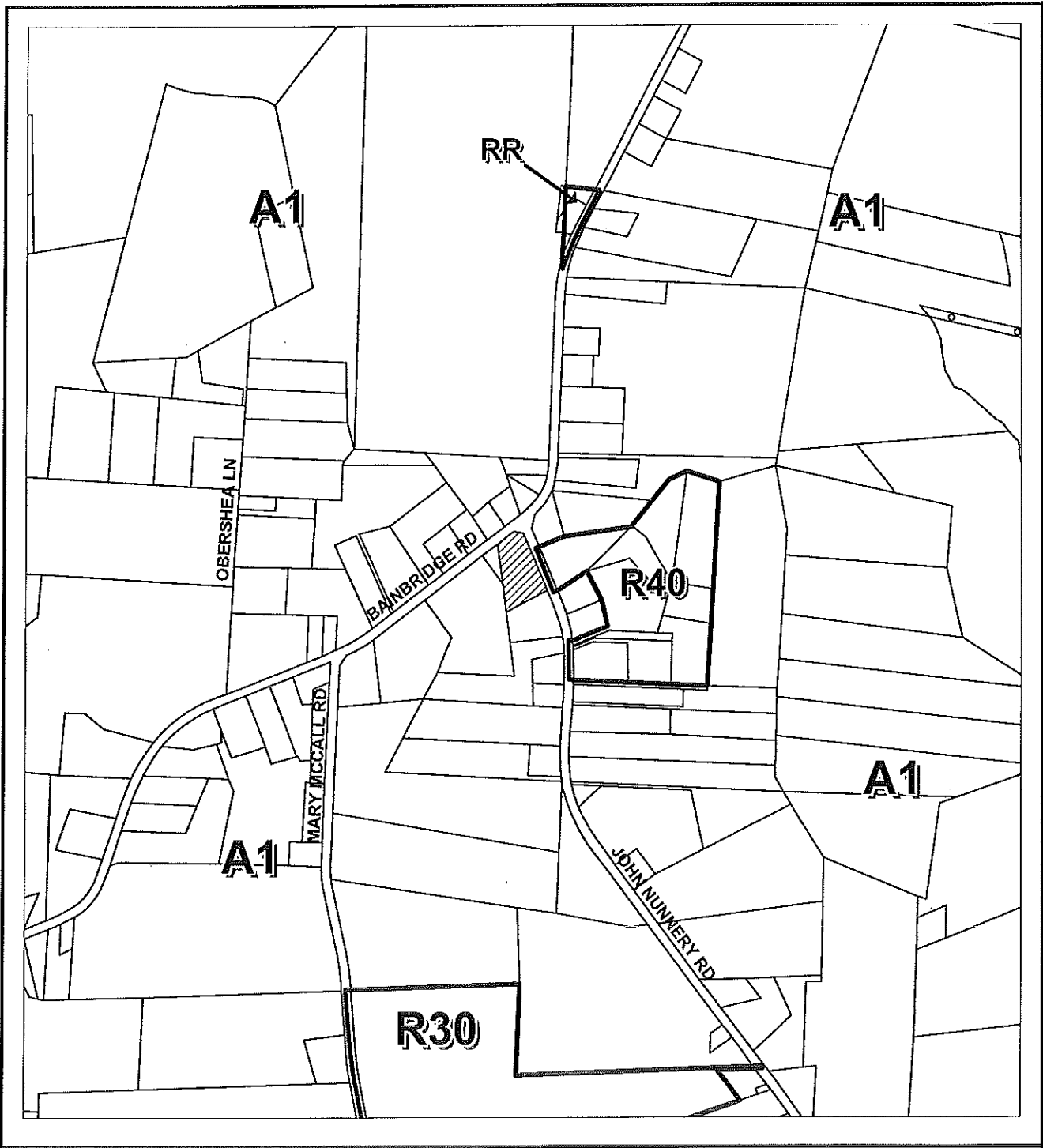
1. Density:
A1 – 1 lot/unit
A1A – 3 lots/units
R40 – 3 lots/units

2. Minimum Yard Setback Regulations:

<u>A1& A1A</u>	<u>R40</u>
Front yard: 50'	Front yard: 30'
Side yard: 20'	Side yard: 15'
Rear yard: 50'	Rear yard: 35'

First Class and Record Owners' Mailed Notice Certification

A certified copy of the tax record owner(s) of the subject and adjacent properties and their tax record mailing address is contained within the case file and is incorporated by reference as if delivered herewith.

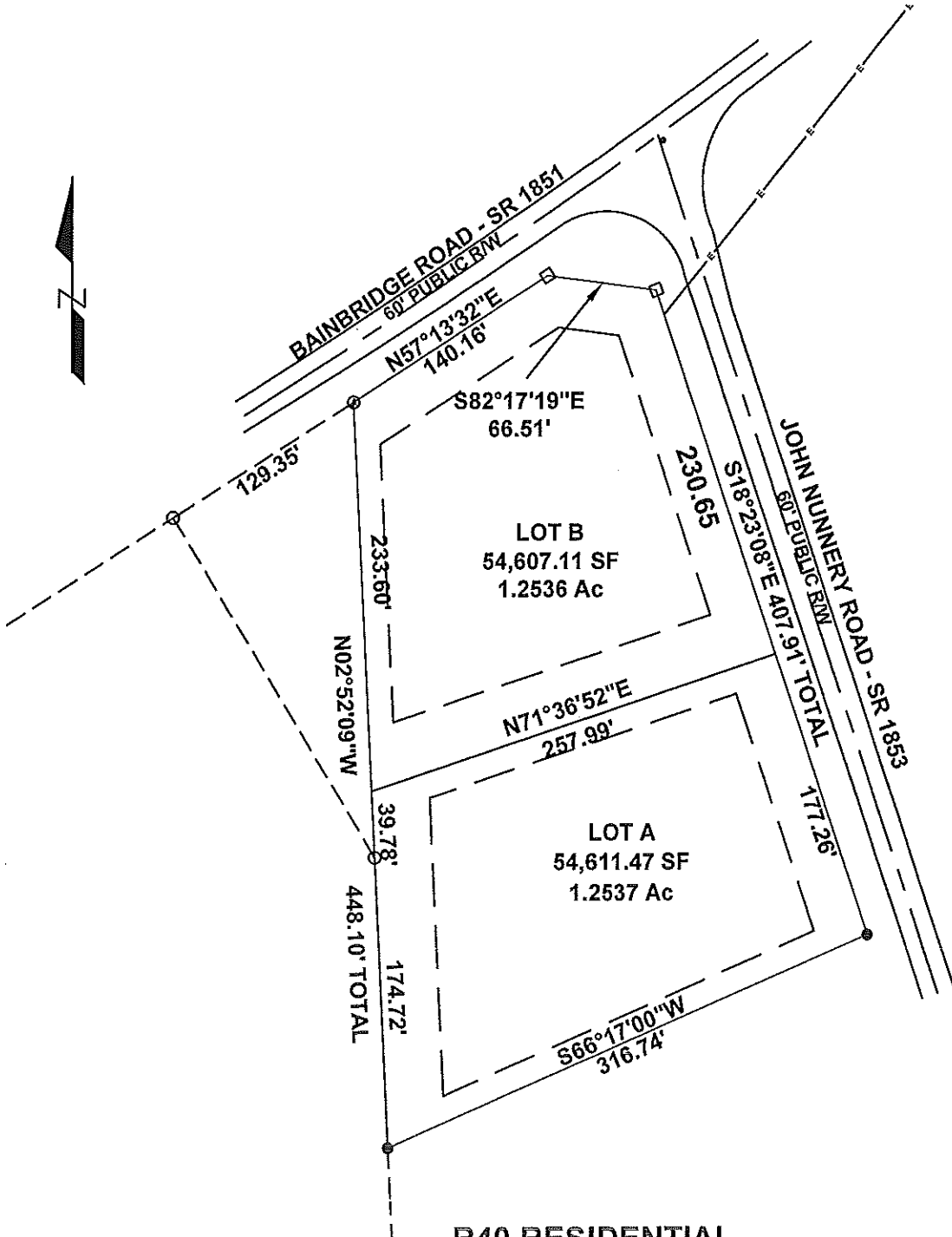


REQUESTED REZONING A1 TO R40/CZ

ACREAGE: 2.51 AC. +/-	HEARING NO: P13-05	
ORDINANCE: COUNTY	HEARING DATE	ACTION
STAFF RECOMMENDATION		
PLANNING BOARD		
GOVERNING BOARD		

PIN: 0496-76-8743

4/18/2013
AM



**R40 RESIDENTIAL
 CONDITIONAL ZONING
 REQUEST: ALLOW TWO LOTS
 CASE: P13-05 ACREAGE: 2.51±
 ZONED: A1 SCALE: 1"=100'**

*SCALED DETAILED SITE PLAN IN FILE AVAILABLE FOR REVIEW UPON REQUEST

Conditional Zoning District
DRAFT
Ordinance Related Conditions
(Two Lot - One Dwelling Per Lot – Subdivision)

Permit-Related:

1. The owner/developer(s) of these lots must obtain detailed instructions on provisions of the County Zoning Ordinance and permits required to place any structure within this development from the County Code Enforcement Section, Room 101 in the Historic Courthouse at 130 Gillespie Street. For additional information, the developer should contact a Code Enforcement Officer.
2. The County Health Department must approve water and sewer plans prior to application for any permits. Site and soil evaluations must be conducted on the property by the County Environmental Health Department prior to application for permits. A copy of the Health Department approval must be provided to Code Enforcement at the time of application for any building/zoning permits. (Note: All Health Department requirements must be met prior to issuance of final permits.) (Section 2306 A, Water and Sewer, County Subdivision Ordinance)
3. The developer must provide a site-specific address and tax parcel number at the time of building/zoning permit application.
4. New development where the developer will disturb or intends to disturb more than one acre of land is subject to the Post-Construction Stormwater Management Permitting Program (Phase II Stormwater Management Requirements) administered by the Division of Water Quality, North Carolina Department of Environment and Natural Resources. If one acre or more of land is to be disturbed, prior to the issuance of any building/zoning permits for this site, a copy of the State's *Post-Construction Permit* must be provided to County Code Enforcement.
5. For any new development where the developer disturbs or intends to disturb more than one acre of land, the developer must provide the Code Enforcement Section with an approved NC Department of Environment and Natural Resources (NCDENR) sedimentation and erosion control plan (S&E) prior to any application for permits. (Note: If any retention/detention basins are required for state approval of this plan, then three copies of a revised plan must be submitted and approved by Planning & Inspections prior to application for any building/zoning permits.) A copy of the NCDENR approval must be provided to Code Enforcement at the time of application for any building/zoning permits.

Site-Related:

6. All uses, dimensions, setbacks and other related provisions of the County Subdivision and Zoning Ordinances for the R40/CZ zoning district, to include the contents of the application and site plan, must be complied with, as applicable.
7. All corner lots and lots fronting more than one street must provide front yard setbacks from each street.
8. For any new development, an adequate drainage system must be installed by the developer in accordance with the NC Department of Environment and Natural Resources' (NCDENR) *Manual on Best Management Practices* and all drainage ways must be kept clean and free of debris. (Section 2306 D, County Subdivision Ordinance)
9. For new development, all utilities, except for 25kv or greater electrical lines, must be located underground. (Section 2306 C, County Subdivision Ordinance)
10. The developer must obtain a driveway permit from the NC Department of Transportation (NCDOT). A copy of the approved driveway permit must be provided to Code Enforcement at the time of application for building/zoning permits.

Plat-Related:

11. Prior to or at the time of submission for final plat approval, the developer must submit documentation from the NC Department of Transportation (NCDOT) indicating that the NCDOT is satisfied with the cleaning out and restoration of the drainage ditch.
12. Each lot must be drawn with solid property lines with the bearings and distances, acreage, and lot identifier reflected on the final plat.
13. A note must be added to the final plat stating that the two lots have a maximum density of one dwelling for each lot and that the lots cannot be further subdivided as mutually agreed by the property owner and the County Board of Commissioners.
14. Prior to final plat approval of any portion of this development, the developer is required to submit a check or cash in the amount of \$206.99 (one lot) payable to "Cumberland County". This condition is in accordance with Section 2308, Parks, Recreation and Open Space, County Subdivision Ordinance, which requires every residential dwelling unit to provide a portion of land, in certain instances, or pay a fee in lieu of dedication, for the purposes of providing park, recreation and open space areas. (Park District # 1)
15. Any/All easements must be reflected on the final plat and labeled as to type of easement, reference number for document creating the easement, and the name of the agency, individual, etc. who holds the easement.
16. The NC Department of Transportation (NCDOT) may not allow a driveway for each individual lot. If one joint driveway is required to serve both lots, the joint driveway must be reflected on the final plat.
17. A 10' x 70' sight distance easement is required at the intersection of SR 1853 (John Nunnery Road) with SR 1851 (Bainbridge Road) and must be reflected on the final plat.
18. The NC Department of Transportation (NCDOT) stamp must be affixed to the final plat prior to submission for final plat approval by Land Use Codes.
19. The notarized signature(s) of all current tax record owner(s) and notary certifications appear on the final plat when submitted for final approval. (Section 2503 D, Certificate of Ownership and Dedication, County Subdivision Ordinance)
20. The final plat must be submitted to Land Use Codes for review and approval for recording with the County Register of Deeds, and the plat must be recorded prior to any permit application for any structure and/or prior to the sale of any lot or unit within this development.

Other Relevant Conditions:

21. The applicant is advised to consult an expert on wetlands before proceeding with any development.
22. The owner/developer is responsible for ensuring easements which may exist on the subject property are accounted for, not encumbered and that no part of this development is violating the rights of the easement holder.
23. The owner/developer be aware that every deed created for a lot being served by an on-site water and/or sewer system must contain the following disclosure when filed with the County Register of Deeds:

"Public water and/or sewer services are not available as of the date of the recording of this deed. On-site sewer disposal systems must be approved by the County Health Department."

Thank you for developing in Cumberland County!

If you need clarification of any conditions, please contact Ed Byrne at 910-678-7609 or Patti Speicher at 910-678-7605 with the Land Use Codes Section; otherwise, contact the appropriate agency at the contact numbers below.

Contact Information (Area Code is 910 unless otherwise stated):

Subdivision/Site Plan/Plat	Ed Byrne	678-7609
Code Enforcement (Permits):	Ken Sykes	321-6654
County Engineer's Office:	Wayne Dudley	678-7636
County Health Department:	Daniel Ortiz	433-3680
Ground Water Issues:	Matt Rooney	678-7625
County Public Utilities:	Amy Hall	678-7637
Corp of Engineers (wetlands):	Crystal C. Amschler	(910) 251-4170
NCDENR (E&S):	Sally Castle	433-3300
Location Services:		
Site-Specific Address:	Ron Gonzales	678-7616
Tax Parcel Numbers:		678-7549
NCDOT (driveways/curb-cuts):	Gary Burton	486-1496
N.C. Division of Water Quality:	Mike Randall	(919) 733-5083 ext. 545

TO THE CUMBERLAND COUNTY JOINT PLANNING BOARD AND THE BOARD OF COUNTY COMMISSIONERS OF CUMBERLAND COUNTY, NC:

I (We), the undersigned, hereby submit this application, and petition the County Commissioners to amend and to change the zoning map of the County of Cumberland as provided for under the provisions of the County Zoning Ordinance. In support of this petition, the following facts are submitted;

1. Requested Rezoning from A1 to R-40
2. Address of Property to be Rezoned: 1348 Bainbridge Rd/SR1851
3. Location of Property: S.W. Corner of Bainbridge Rd
& John Nummy Rd/SR1853
4. Parcel Identification Number (PIN #) of subject property: 0496-76-8743
(also known as Tax ID Number or Property Tax ID)
5. Acreage: 2.5073 Frontage: 140.16' Depth: 407.91
6. Water Provider: Well: PWC: _____ Other (name): _____
7. Septage Provider: Septic Tank PWC _____
8. Deed Book 9056, Page(s) 84-86, Cumberland County Registry. (Attach copy of deed of subject property as it appears in Registry).
9. Existing use of property: Vacant
10. Proposed use(s) of the property: Residential - Single
Family
11. Do you own any property adjacent to or across the street from this property?
Yes _____ No If yes, where? _____
12. Has a violation been issued on this property? Yes _____ No

A copy of the recorded deed(s) and/or recorded plat map(s) must be provided. If the area is a portion of a parcel, a written legal description by metes and bounds, showing acreage must accompany the deeds and/or plat. If more than one zoning classification is requested, a correct metes and bounds legal description, including acreage, for each bounded area must be submitted.

The Planning and Inspections Staff is available for advice on completing this application; however, they are not available for completion of the application.

TO THE CUMBERLAND COUNTY JOINT PLANNING BOARD AND THE BOARD OF COUNTY COMMISSIONERS OF CUMBERLAND COUNTY, NC:

I (We), the undersigned, hereby submit this application, and petition the County Commissioners to amend and to change the zoning map of the County of Cumberland as provided for under the provisions of the County Zoning Ordinance. In support of this petition, as hereinafter requested, the following facts are submitted:

1. Applicant/Agent _____
2. Address: _____ Zip Code _____
3. Telephone: (Home) _____ (Work) _____
4. Location of Property: _____

5. Parcel Identification Number (PIN #) of subject property: _____
(also known as Tax ID Number or Property Tax ID)
6. Acreage: _____ Frontage: _____ Depth: _____
7. Water Provider: _____
8. Septage Provider: _____
9. Deed Book _____, Page(s) _____, Cumberland County Registry. (Attach copy of deed of subject property as it appears in Registry).

10. Existing use of property: Vacant Lot, 2.5073 Ac.
 11. Proposed use(s) of the property: Two single Family Homes,
One on each of 2 Lots
- NOTE: Be specific and list all intended uses.**

12. It is requested that the foregoing property be rezoned FROM: _____

TO: (Select one)

- R-110 Conditional Zoning District, with an underlying zoning district of _____
(Article IV)
_____ Mixed Use District/Conditional Zoning District (Article VI)
_____ Planned Neighborhood District/Conditional Zoning District (Article VII)
_____ Density Development/Conditional Zoning District, at the _____ Density
(Article VIII)

The Planning and Inspections Staff is available for advice on completing this application; however, they are not available for completion of the application.

APPLICATION FOR
CONDITIONAL ZONING

1. PROPOSED USE(S):

- A. List the use(s) proposed for the Conditional Zoning. (Use of the underlying district will be restricted only to the use(s) specified in this application.)

Two 1.25 Ac. Lots with one single Family Home on each lot

- B. Density: List the amount of acreage that will be residential, commercial, and/or open space, and the number of lots and/or dwelling units proposed, and the square footage of the non-residential units.

2.5073 Acres R-40 Conditional Zoning

2. DIMENSIONAL REQUIREMENTS:

- A. Reference either the dimensional requirements of the district, Sec. 1104 or list the proposed setbacks.

Building Setbacks:
Front - 30'
Side 15'
Rear 35'

- B. Off-street parking and loading, Sec.1202: List the number of spaces, type of surfacing material and any other pertinent information.

N/A

3. SIGN REQUIREMENTS:

Reference the district sign regulations proposed from Article XIII.

N/A

4. LANDSCAPE AND BUFFER REQUIREMENTS:

- A. For all new non-residential and mixed use development abutting a public street, indicate the number and type of large or small ornamental trees used in the streetscape, yard space, and/or parking areas, plus the number and type of shrubs. (Sec. 1102N). **NOTE: All required landscaping must be included on the site plan.**

N/A

- B. Indicate the type of buffering and approximate location, width and setback from the property lines.

N/A

5. MISCELLANEOUS:

List any information not set forth above, such as the days and hours of the operation, number of employees, exterior lighting, noise, odor and smoke, emission controls, etc.

N/A

6. SITE PLAN REQUIREMENTS:

The application must include a site plan drawn to the specifications of Sec. 1402. If the proposed uses involve development subject to the County Subdivision Ordinance, the site plan required may be general in nature, showing a generalized street pattern, if applicable, and the location of proposed uses. If the proposed uses include development not subject to the Subdivision Ordinance, the site plan shall be of sufficient detail to allow the Planning and Inspections Staff and the Planning Board to analyze the proposed uses and arrangement of uses on the site. It shall also include the footprints of all buildings (proposed and existing), the proposed number of stories, location and number of off-street parking and loading spaces, proposed points of access to existing streets and internal circulation patterns. In addition, the location of all proposed buffers and fences and landscaping shall be included on the site plan.

Building Envelopes shown

The undersigned hereby acknowledge that the County Planning Staff has conferred with the petitioner or assigns, and the application as submitted is accurate and correct.

Walter S. & Sylvia D. Manning
NAME OF OWNER(S) (PRINT OR TYPE)

6313 Faircloth Bridge Rd, Stedman, NC 28391
ADDRESS OF OWNER(S)

910-323-2740 HOME TELEPHONE # WORK TELEPHONE #

Robert M Bennett
NAME OF AGENT, ATTORNEY, APPLICANT (PRINT OR TYPE)

120 Gillespie St 2nd Fl. Fayetteville, NC 28301-5644
ADDRESS OF AGENT, ATTORNEY, APPLICANT

benengineering@embarqmail.com
E-MAIL

910-425-2689 HOME TELEPHONE # 910-484-5523 WORK TELEPHONE #

[Signature] SIGNATURE OF OWNER(S) Robert M Bennett SIGNATURE OF AGENT, ATTORNEY OR APPLICANT

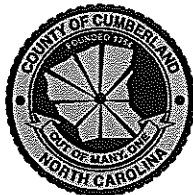
[Signature] for SIGNATURE OF OWNER(S) Sylvia D. Manning

The contents of this application, upon submission, become "public record."

Walter Clark,
Chair
Cumberland County

Patricia Hall,
Vice-Chair
Town of Hope Mills

Garland C. Hostetter,
Town of Spring Lake
Harvey Cain, Jr.,
Town of Stedman
Charles C. Morris,
Town of Linden



CUMBERLAND
★ **COUNTY** ★
NORTH CAROLINA

Planning & Inspections Department

May 15, 2013

Thomas J. Lloyd,
Director

Cecil P. Combs,
Deputy Director

Lori Epler,
Sara E. Piland,
Vikki Andrews,
Cumberland County

Benny Pearce,
Town of Eastover

Donovan McLaurin,
Wade, Falcon & Godwin

MEMORANDUM

TO: Cumberland County Joint Planning Board
FROM: Planning & Inspections Staff
SUBJECT: Staff Recommendation for the May 21, 2013 Board Meeting

P13-19. REZONING OF 8.00+/- ACRES FROM R40A RESIDENTIAL TO R20/CZ RESIDENTIAL/CONDITIONAL ZONING DISTRICT FOR GROUP QUARTERS OR TO A MORE RESTRICTIVE ZONING DISTRICT; LOCATED ON THE NORTHEAST SIDE OF NC HWY 82 (N WEST STREET), SOUTHEAST OF SR 1806 (SHERRILL BAGGETT ROAD); SUBMITTED BY JOSEPH T. LEGGETT ON BEHALF OF FALON CHILDREN'S HOME (OWNER) AND MATTHEW HALEY, PE. (FALCON)

The Planning & Inspections Staff recommends approval of the requested rezoning to R20 Residential/CZ Conditional Zoning district for group quarters based on the following:

1. The district requested is consistent with the 2030 Growth Vision Plan, which calls for "community growth area" at this location, as well as meeting the location criteria for "suburban density residential" development as listed in the Land Use Policies Plan; the request is also consistent with the Vision Northeast Land Use Plan which calls for "office and institutional" at this location;
2. The requested use of group quarters is reasonable as it is a logical extension of the Falcon Children's Home located on the same property and under the same ownership;
3. The location and character of the use, if developed according to the plan as submitted and the recommended Ordinance Related Conditions, are reasonable as they will be in harmony with the area in which they are to be located.

There are no other zoning districts suitable as related to this request. The applicant has verbally agreed to all Ordinance Related Conditions.

Attachments:

- 1 – Site Profile
- 2 – Rezoning Sketch Map
- 3 – Site Plan
- 4 – Draft Ordinance Related Conditions
- 5 – Application

P13-19
SITE PROFILE

P13-19. REZONING OF 8.00+/- ACRES FROM R40A RESIDENTIAL TO R20/CZ RESIDENTIAL/CONDITIONAL ZONING DISTRICT FOR GROUP QUARTERS OR TO A MORE RESTRICTIVE ZONING DISTRICT; LOCATED ON THE NORTHEAST SIDE OF NC HWY 82 (N WEST STREET), SOUTHEAST OF SR 1806 (SHERRILL BAGGETT ROAD); SUBMITTED BY JOSEPH T. LEGGETT ON BEHALF OF FALON CHILDREN'S HOME (OWNER) AND MATTHEW HALEY, PE. (FALCON)

Site Information:

Frontage & Location: 698.34'+/- on NC HWY 82 (N. West Street)

Depth: 600.88'+/-

Jurisdiction: Town of Falcon

Adjacent Property: Yes, north & east of subject property

Current Use: Vacant land

Initial Zoning: R40A – March 3, 1991 (Town of Falcon)

Nonconformities: None

Zoning Violation(s): None

Surrounding Zoning: North: R40A & A1 (County); South: C(P)/CU (motor vehicle repair), R15/CU (piano shop/vocal instruction), O&I, R40A, R15A & R15; East: R40A & R15; West: R40A (all referenced districts are in Falcon unless otherwise noted)

Surrounding Land Use: Residential (including multi-family), club, children's home, trade contractor, motor vehicle repair, nursing home, farmland & woodlands

2030 Growth Vision Plan: Community Growth Area

Vision Northeast Land Use Plan: Office & Institutional

Special Flood Hazard Area (SFHA): None

Water/Sewer Availability: Falcon/Septic

Soil Limitations: None

School Capacity/Enrolled: District 7 Elementary: 300/278; Mac Williams Middle: 1,270/1,229; Cape Fear High: 1,425/1,575

Subdivision/Site Plan: If approved, "Ordinance Related Conditions" will apply

Average Daily Traffic Count (2010): 1,500 on NC Hwy 82 (N. West Street) & 660 on SR 1806 (Sherrill Baggett Road)

Highway Plan: There are no road improvements/constructions specified for this area. This case has no impact on the current Highway Plan or Transportation Improvement Program

Notes:

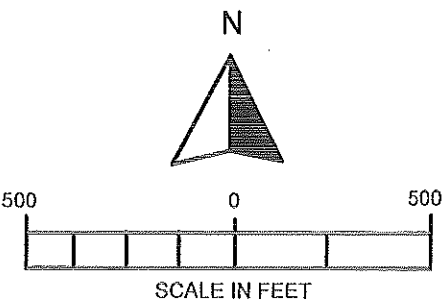
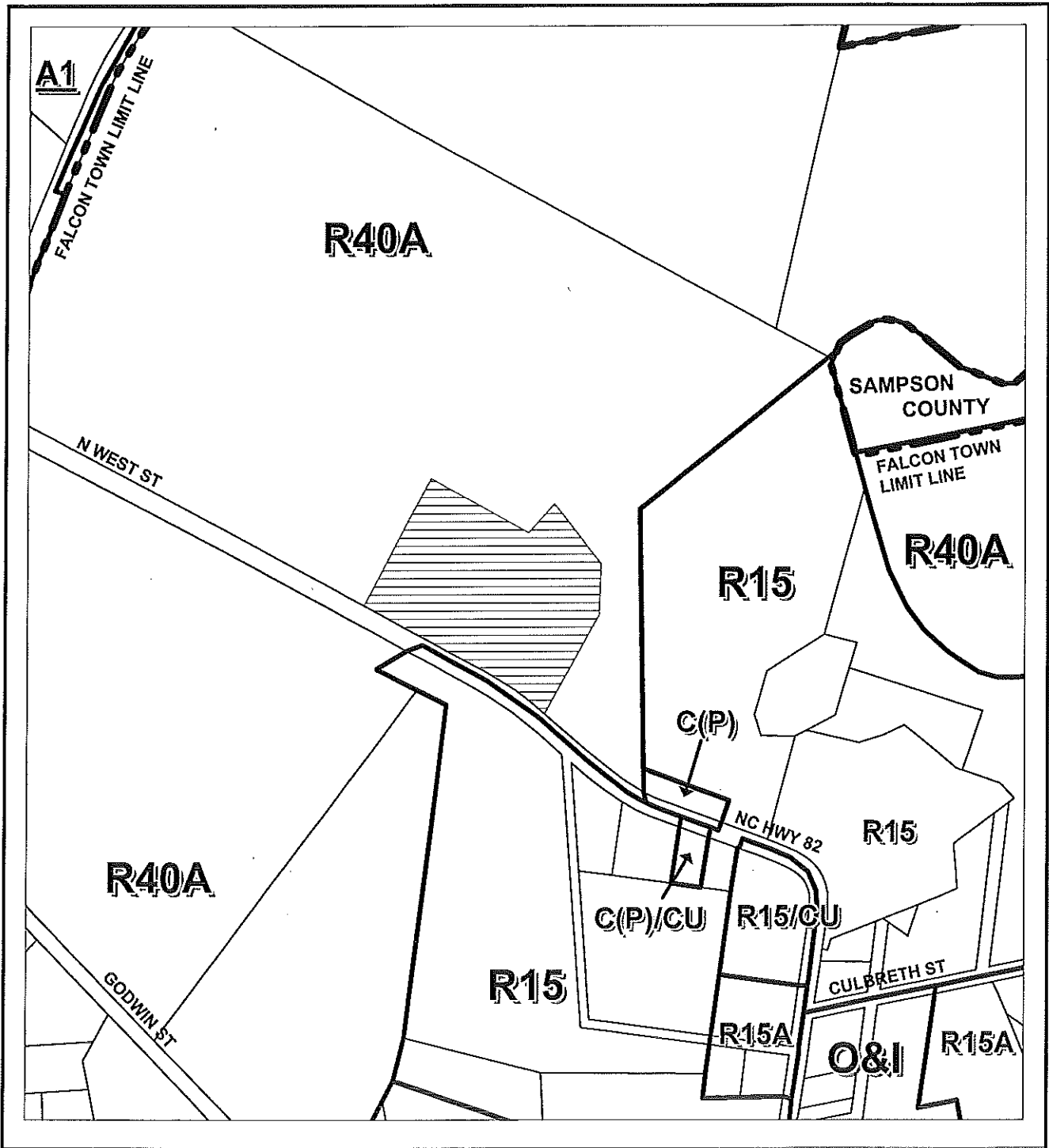
1. Density minus (15% for R/W):
R40A – 7 lots/units
R20 – 15 lots/units

2. Minimum Yard Setback Regulations:

<u>R40A</u>	<u>R20</u>
Front yard: 50'	Front yard: 30'
Side yard: 15'	Side yard: 15'
Rear yard: 35'	Rear yard: 35'

First Class and Record Owners' Mailed Notice Certification

A certified copy of the tax record owner(s) of the subject and adjacent properties and their tax record mailing address is contained within the case file and is incorporated by reference as if delivered herewith.

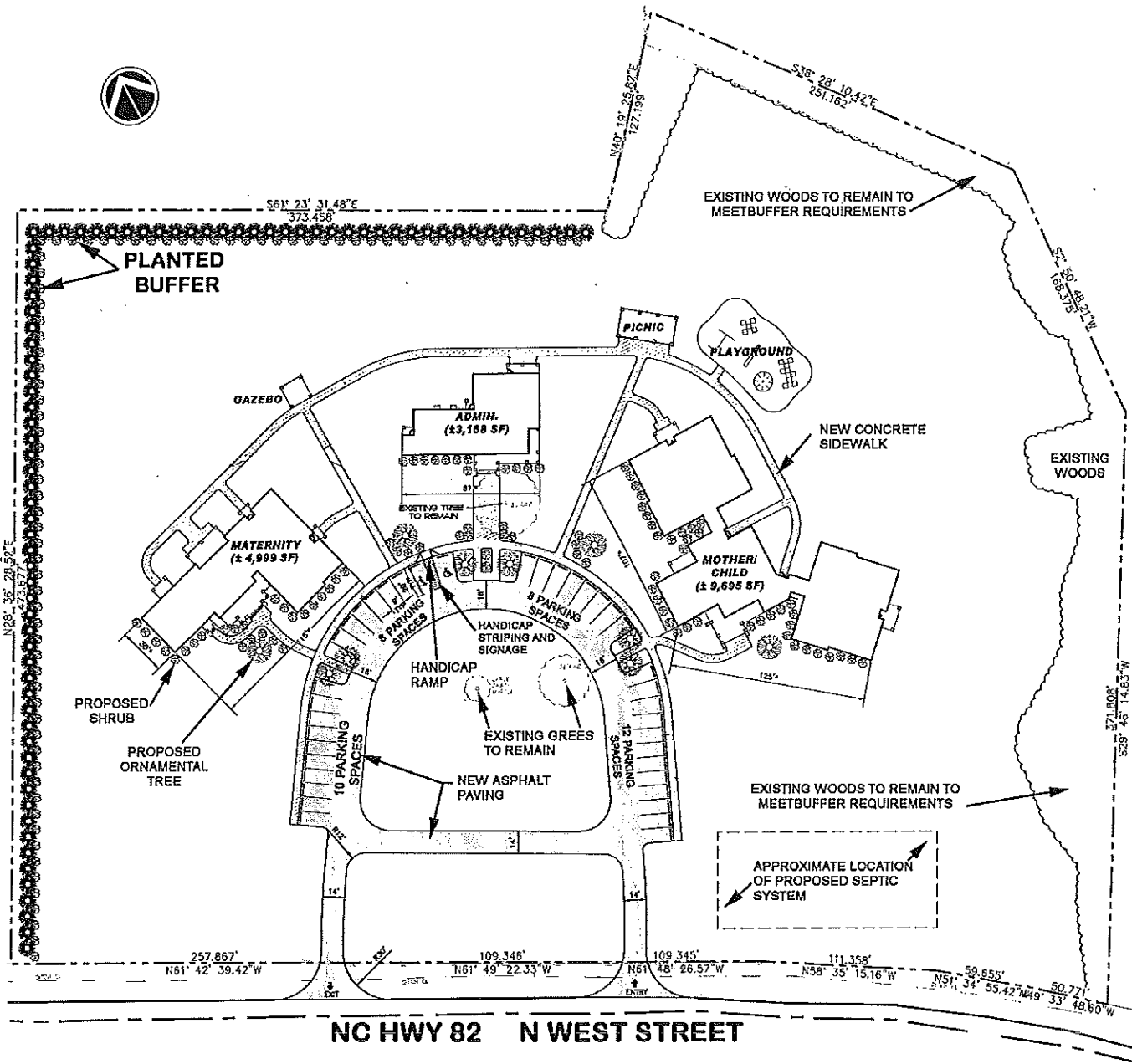


REQUESTED REZONING R40A TO R20/CZ

ACREAGE: 8.00 AC.+/-		HEARING NO: P13-19	
ORDINANCE: FALCON	HEARING DATE	ACTION	
STAFF RECOMMENDATION			
PLANNING BOARD			
GOVERNING BOARD			

PORT. OF PIN: 1502-37-5595

AM



R20 RESIDENTIAL/CONDITIONAL ZONING DISTRICT
REQUEST: FOR GROUP QUARTERS
CASE: P13-19 ACERAGE: 8.00 AC+/-
ZONED: R40A SCALE: NTS
PARKING: AS SHOWN
 *SCALED DETAILED SITE PLAN IN FILE AVAILABLE FOR REVIEW UPON REQUEST

Conditional Zoning District
Town of Falcon
DRAFT
Ordinance Related Conditions
(Group Quarters & Group Development)

Permit-Related:

1. The owner/developer(s) of these lots must obtain detailed instructions on provisions of the Falcon Zoning Ordinance and permits required to place any structure within this development from the County Code Enforcement Section, Room 101 in the Historic Courthouse at 130 Gillespie Street. For additional information, the developer should contact a Code Enforcement Officer.
2. Connection to public water and sewer is required, the Town of Falcon must approve water and NORCRESS the sewer plans prior to application for any permits. A copy of the Falcon and NORCRESS approval must be provided to Code Enforcement at the time of application for building/zoning permits. (Section 4.3.d(2), Public Water and Sewer Systems Falcon Subdivision Ordinance)
3. The developer must provide a site-specific address and tax parcel number at the time of building/zoning permit application.
4. If applicable, any new development where the developer will disturb or intends to disturb more than one acre of land is subject to the Post-Construction Stormwater Management Permitting Program (Phase II Stormwater Management Requirements) administered by the Division of Water Quality, North Carolina Department of Environment and Natural Resources. If one acre or more of land is to be disturbed, prior to the issuance of any building/zoning permits for this site, a copy of the State's *Post-Construction Permit* must be provided to County Code Enforcement.
5. For any new development where the developer disturbs or intends to disturb more than one acre of land, the developer must provide the Code Enforcement Section with an approved NC Department of Environment and Natural Resources (NCDENR) sedimentation and erosion control plan (S&E) prior to any application for permits. (Note: If any retention/detention basins are required for state approval of this plan, then three copies of a revised plan must be submitted and approved by Planning & Inspections prior to application for any building/zoning permits.) A copy of the NCDENR approval must be provided to Code Enforcement at the time of application for any building/zoning permits.
6. The *Special Flood Hazard Area* (SFHA) exists on this tract; any development within SFHA must have first flood elevations, including all mechanical and electrical equipment above base flood elevation (BFE) plus two feet of freeboard. Proper flood plain development permits are required, issued by the County Engineer, prior to any building/permit application. A copy of the approved flood plain permit must be provided to Code Enforcement at the time of building/zoning permit applications. (Note: **This condition applies to a portion of the parent tract that is located within the SFHA area. The proposed construction limits of this project appear to be located out of the SFHA area.**)
7. Landscaping must be provided in accordance with Section 7.32, Yard Space Landscape Requirements and Section 8.28 Parking Area Landscaping Requirements, Falcon Zoning Ordinance and/as shown on the site plan. The following are the minimum standards for the required landscaping of this site:
 - a. Nine ornamental trees and 93 shrubs are required in the building yard area; and
 - b. Two large shade trees or four small ornamental trees are required within the parking area.

In addition:

- a. Required plant materials shall be maintained by the property owner, including replacing dead or unhealthy trees and shrubs; and
- b. All yard and planting areas shall be maintained in a neat, orderly, and presentable manner and kept free of weeds and debris.

8. The building final inspection cannot be accomplished until a Code Enforcement Officer inspects the site and certifies that the site is developed in accordance with the approved plans.

Site-Related:

9. All uses, dimensions, setbacks and other related provisions of the County Subdivision and Zoning Ordinances for the R20/CZ zoning district must be complied with, as applicable.
10. This conditional approval is not approval of any freestanding signs. If a freestanding sign is desired, re-submittal of the site plan is required prior to application for any freestanding sign permits. Attached signage for this development must be in accordance with the applicable sign regulations as set forth in Article IX of the Falcon Zoning Ordinance and that the proper permit(s) must be obtained prior to the installation of any permanent signs on the property. (Note: This conditional approval is not approval of the size, shape, or location of any signs.)
11. For any new development, an adequate drainage system must be installed by the developer in accordance with the NC Department of Environment and Natural Resources' (NCDENR) *Manual on Best Management Practices* and all drainage ways must be kept clean and free of debris. (Section 4.3.c, Falcon Subdivision Ordinance)
12. For new development, all utilities, except for 25kv or greater electrical lines, must be located underground. (Section 4.3g, Falcon Subdivision Ordinance)
13. In the event a stormwater utility structure is required by the NC Department of Environment and Natural Resources (NCDENR), the owner/developer must secure the structure with a four foot high fence with a lockable gate, and is required to maintain the detention/retention basin, keeping it clear of debris and taking measures for the prevention of insect and rodent infestation.
14. The developer must obtain a driveway permit from the NC Department of Transportation (NCDOT). A copy of the approved driveway permit must be provided to Code Enforcement at the time of application for building/zoning permits.
15. Turn lanes may be required by the NC Department of Transportation (NCDOT).
16. All lighting is required to be directed internally within this development and comply with the provisions of Section 8.25, Lighting, Falcon Zoning Ordinance.
17. A solid buffer must be provided and maintained along the side and rear property lines where this tract/site abuts residentially zoned properties in accordance with the provisions of Section 7.27, Buffer Requirements, Falcon Zoning Ordinance. (Note: Chain link fencing cannot be used to satisfy the buffer requirement.)
18. All dumpster, garbage, and utility areas shall be located on concrete pads and screened on a minimum of three sides.
19. All required off-street parking spaces shall be a minimum of 8 ½' x 20'; a minimum of 38 off-street parking spaces is required for this development.

Advisories:

20. The applicant is advised to consult an expert on wetlands before proceeding with any development. There may be wetlands located in the project area that are subject to the permit requirements of Section 404 of the Clean Water Act. To avoid a violation of federal and/or state law, it is recommended the developer contact the Office of the Army Corp of Engineers or hire an environmental consultant to identify and delineate any wetlands in the project area prior to construction. A Section 404 permit will be required if the applicant needs to fill wetlands and the permit must be obtained prior to any construction on this site.
21. The owner/developer is responsible for ensuring easements which may exist on the subject property are accounted for, not encumbered and that no part of this development is violating the rights of the easement holder.

Other Relevant Conditions:

22. The owner/developer be aware that every deed created for a lot being served by an on-site water and/or sewer system must contain the following disclosure when filed with the County Register of Deeds:

“Public water and/or sewer services are not available as of the date of the recording of this deed. On-site sewer disposal systems must be approved by the County Health Department.”

Thank you for developing in the Town of Falcon and Cumberland County!

If you need clarification of any conditions, please contact Ed Byrne at 910-678-7609 or Patti Speicher at 910-678-7605 with the Land Use Codes Section; otherwise, contact the appropriate agency at the contact numbers below.

Contact Information (Area Code is 910 unless otherwise stated):

Subdivision/Site Plan/Plat	Ed Byrne	678-7609
Code Enforcement (Permits):	Ken Sykes	321-6654
County Engineer’s Office:	Wayne Dudley	678-7636
County Health Department:		
Food & Lodging Env. Health:	Daniel Ortiz	433-3680
PWC:	Heidi Maly	223-4737
Town of Falcon:	Belinda White (Town Clerk)	980-1355
CCP&I Falcon Staff Representative:	Denise Sykes	678-7629
County Public Utilities/NORCRESS:	Amy Hall	678-7637
Corp of Engineers (wetlands):	Crystal C. Amschler	(910) 251-4170
NCDENR (E&S):	Sally Castle	433-3300
Location Services:		
Site-Specific Address:	Ron Gonzales	678-7616
Tax Parcel Numbers:		678-7549
NCDOT (driveways/curb-cuts):	Gary Burton	486-1496
N.C. Division of Water Quality:	Mike Randall	(919) 733-5083 ext. 545

cc: Belinda White, Town of Falcon

TO THE CUMBERLAND COUNTY JOINT PLANNING BOARD AND THE TOWN OF FALCON BOARD OF COMMISSIONERS, FALCON, NORTH CAROLINA:

I (We), the undersigned, hereby submit this application, and petition the Falcon Board of Commissioners to amend and to change the zoning map of the Town of Falcon as provided for under the provisions of the Falcon Zoning Ordinance. In support of this petition, as hereinafter requested, the following facts are submitted:

1. Applicant/Agent FALCON CHILDREN HOME
2. Address: PO BOX 391 FALCON, NC Zip Code: 28342-0039
3. Telephone: (Home) _____ (Work) 910-980-1065
4. Location of Property: ON N. WEST STREET (NC HWY 82)
ACROSS FROM EXISTING FALCON CHILDREN HOME
5. Parcel Identification Number (PIN #) of subject property: PORTION OF 1502-31-5595
(also known as Tax ID Number or Property Tax ID)
6. Acreage: 8.00 Frontage: ± 700 Depth: ± 475'
7. Water Provider: TOWN OF FALCON
8. Septage Provider: ONSITE PRIVATE SEPTIC
9. Deed Book 00341, Page(s) 00116, Cumberland County Registry. (Attach copy of deed of subject property as it appears in Registry).
10. Existing use of property: AGRICULTURE
11. Proposed use(s) of the property: "WHITFIELD FAMILY LIFE CENTER"
TO INCLUDE ADMIN, MATERNITY, AND MOTHER/CHILD BUILDINGS
NOTE: Be specific and list all intended uses.
12. It is requested that the foregoing property be rezoned From: R40A-RESIDENTIAL
TO:
 Conditional Use District, with an underlying zoning district of R20
(Article IV)

APPLICATION FOR
CONDITIONAL USE PERMIT

1. PROPOSED USE(S):

- A. List the use(s) proposed for the Conditional Use Permit. (Use of the underlying district will be restricted only to the use(s) specified in this application.)

GROUP QUARTERS (ADMIN, MATERNITY, AND MOTHER/CHILD FACILITIES AS PART OF THE WHITFIELD FAMILY LIFE CENTER)

- B. Density: List the amount of acreage that will be residential, commercial, and/or open space, and the number of lots and/or dwelling units proposed, and the square footage of the non-residential units.

ALL 6.51 ACRES OF THE PROJECT WILL BE FOR NON-RESIDENTIAL USE

PROPOSED BUILDING SQ FOOTAGES ARE AS FOLLOWS:
ADMIN (3,168 SF), MATERNITY (4,999 SF),
+ MOTHER/CHILD (9,695 SF)

2. DIMENSIONAL REQUIREMENTS:

- A. Reference either the dimensional requirements of the district, Sec. 7.3 or list the proposed setbacks.

SEE SITE PLAN

- B. Off-street parking and loading, Article VIII: List the number of spaces, type of surfacing material and any other pertinent information.

SEE SITE PLAN

3. SIGN REQUIREMENTS:

Reference the district sign regulations proposed from Article IX.

SEE SITE PLAN

4. LANDSCAPE AND BUFFER REQUIREMENTS:

- A. For all new non-residential and mixed use development abutting a public street, indicate the number and type of large or small ornamental trees used in the streetscape, yard space, and/or parking areas, plus the number and type of shrubs. [Sec. 7.32 & 8.28]. **NOTE: All required landscaping must be included on the site plan.**

SEE SITE PLAN

- B. Indicate the type of buffering and approximate location, width and setback from the property lines. [Sec. 7.27]. **NOTE: Required buffering must be included on the site plan.**

SEE SITE PLAN

5. MISCELLANEOUS:

List any information not set forth above, such as the days and hours of the operation, number of employees, exterior lighting, noise, odor and smoke, emission controls, etc.

THE PROPOSED FACILITY WILL OPERATE 24 HOURS A DAY,
7 DAYS A WEEK. THERE WILL BE APPROXIMATELY 16 EMPLOYEES.

6. SITE PLAN REQUIREMENTS:

The application shall include a site plan drawn to the specifications of Sec. 12.45. If the proposed uses involve development subject to the Falcon Subdivision Ordinance, the site plan required may be general in nature, showing a generalized street pattern, if applicable, and the location of proposed uses. If the proposed uses include development not subject to the Subdivision Ordinance, the site plan shall be of sufficient detail to allow the Planning and Inspections Staff and the Planning Board to analyze the proposed uses and arrangement of uses on the site. It shall also include the footprints of all buildings (proposed and existing), the proposed number of stories, location and number of off-street parking and loading spaces, proposed points of access to existing streets and internal circulation patterns. In addition, the location of all proposed buffers and fences and landscaping shall be included on the site plan.

7. STATEMENT OF ACKNOWLEDGMENT

It is understood by the undersigned that the official zoning map, as originally adopted and subsequently amended, is presumed to be appropriate to the property involved and that the burden of proof for a zoning amendment (change) rest with the petitioner.

It is the responsibility of the petitioner (personally or by agent) to submit to the Planning and Inspections Department a valid request, not incompatible with existing neighborhood zoning patterns.

In order for the Planning Board to offer a favorable recommendation, and for the Board of Commissioners to approve, any Conditional Use District and Permit they must find from the evidence presented at their respective public hearing that:

- A. The use will not materially endanger the public health or safety if located according to the plan submitted and recommended;
- B. The use meets all required conditions and specifications;
- C. The use will maintain or enhance the value of adjoining or abutting properties, or that the use is a public necessity; and
- D. The location and character of the use, if developed according to the plan as submitted and recommended, will be in harmony with the area in which it is to be located and in general conformity with Falcon's most recent Land Use Plan and adopted planning policies.

I further understand I must voluntarily agree to all conditions proposed for the Conditional Use Permit.

The undersigned hereby acknowledge that the County Planning Staff has conferred with the petitioner or assigns, and the application as submitted is accurate and correct.

↓ Falcon Childrens Home
NAME OF OWNERS (PRINT OR TYPE)

7569 North west St. Falcon, N.C. 28342
ADDRESS OF OWNER (S)

2leygett@fchfs.org
E-MAIL

910-980-1065 910-980-1065
HOME TELEPHONE # WORK TELEPHONE

[Signature] Falcon Childrens Home
SIGNATURE OF OWNER (S) SIGNATURE OF OWNER (S)

↓ MATTHEW HALEY, PE - CAPE FEAR ENGINEERING
NAME OF AGENT, ATTORNEY, APPLICANT (by assign) (PRINT OR TYPE)

151 POOLE ROAD, SUITE 100
ADDRESS OF AGENT, ATTORNEY, APPLICANT

MATT. HALEY @ CAPEFEARENGINEERING.COM
E-MAIL

910-338-2602
~~HOME~~ TELEPHONE#
CELL

910-383-1044
WORK TELEPHONE #

Matthew Haley
SIGNATURE OF AGENT, ATTORNEY
OR APPLICANT

- * ALL record property owners must sign this petition.
- * The contents of this application, upon submission, becomes "public record."

FALCON ZONING ORDINANCE
FEE SCHEDULE

REQUESTED ZONING DISTRICTS ¹	LESS THAN 5 ACRES	5 TO 50 ACRES	50 TO 100 ACRES	100+ ACRES
CONDITIONAL USE DISTRICTS ² RESIDENTIAL	\$500	\$500	\$500	\$500
CONDITIONAL USE DISTRICTS ² NONRESIDENTIAL	\$700	\$800	\$800	\$800

- 1 If more than one zoning district is requested in the same applications, the highest fee for the district requested will apply.
- 2 If a general rezoning is requested and based on recommendations of the Joint Planning Board or Falcon Commissioners, the Applicant desires to submit a Conditional Use District and Permit application; the original application fee will be credited towards the Conditional Use District and Permit.

Walter Clark,
Chair
Cumberland County

Patricia Hall,
Vice-Chair
Town of Hope Mills

Garland C. Hostetter,
Town of Spring Lake
Harvey Cain, Jr.,
Town of Stedman
Charles C. Morris,
Town of Linden



CUMBERLAND
★ **COUNTY** ★
NORTH CAROLINA

Planning & Inspections Department

April 24, 2013

Thomas J. Lloyd,
Director

Cecil P. Combs,
Deputy Director


Lori Epler,
Sara E. Piland,
Vikki Andrews,
Cumberland County

Benny Pearce,
Town of Eastover

Donovan McLaurin,
Wade, Falcon & Godwin

MEMORANDUM

TO: Cumberland County Joint Planning Board

FROM: Charles Morris, Moderator, Land Use Codes Committee 

SUBJECT: **P11-20.** REVISION AND AMENDMENT TO THE CUMBERLAND COUNTY ZONING ORDINANCE, AMENDING ARTICLE II INTERPRETATIONS, CALCULATIONS, AND DEFINITIONS, SECTION 203. DEFINITIONS OF SPECIFIC TERMS AND WORDS BY INSERTING IN ALPHABETICAL ORDER THE TERM AND DEFINITION FOR "FIRING RANGE, OUTDOOR;" AMENDING ARTICLE IV PERMITTED, CONDITIONAL, AND SPECIAL USES, SECTION 403. USE MATRIX BY INSERTING IN ALPHABETICAL ORDER A NEW ROW ENTITLED "FIRING RANGE, OUTDOOR (SEC. 907.1)" IN THE LAND USE COLUMN AND ALLOWING THIS USE AS CONDITIONAL ZONING BY INSERTING A "Z" IN THE CD, A1, A1A, O&I(P), C1(P), C2(P), C(P), M1(P) AND M(P) ZONING DISTRICT COLUMNS ON THIS SAME ROW; AMENDING ARTICLE IX INDIVIDUAL USES BY CREATING AND INSERTING IN NUMERICAL ORDER A NEW SECTION ENTITLED: SECTION 907.1 FIRING RANGE, OUTDOOR, WITH SUB-SECTIONS "A" THROUGH "J;" AND UPDATING THE TABLE OF CONTENTS AS APPROPRIATE. (NOTE: ORIGINAL HEADING HAS CHANGED.)

The Land Use Codes Committee has re-considered the above referenced text amendment to the County Zoning Ordinance and recommends approval of the proposed revised amendment as attached.

The amendment is necessary to ensure that the Cumberland County Zoning Ordinance contains specific provisions related to the land use impacts resulting from the operation of commercial outdoor firing ranges. If adopted the provisions are intended to ensure the ranges are in an appropriate location with sufficient land area, have appropriate safety measures in place and provide a safe environment for the users of the facility as well as the occupants/owners of surrounding properties.

The committee recommends the review process require Planning Board consideration with the board's recommendation presented to the County Commissioners at public hearing for final determination.

Please contact me with any questions at 910-323-3161, email: charles@morriscoyler.com or Patti Speicher at 910-678-7605 or email: pspeicher@co.cumberland.nc.us.

Attachment:

1. P11-20 County Zoning Ordinance Text Amendment – Outdoor Firing Ranges (dated April 24, 2013)
2. Sections 4 & 6 and Attachments 1-2 thru 1-20, Range Design Criteria, U.S. Dept. of Energy Office of Health, Safety and Security (June 2012)
3. Listing of Known Existing Ranges in Cumberland County (updated May 2, 2013)
4. Listing of Various NC Counties Outdoor Firing Range Requirements

130 Gillespie Street - Post Office Box 1829 - Fayetteville, North Carolina 28302-1829 - (910) 678-7600 - Fax: (910) 678-7631

P11-20
COUNTY ZONING ORDINANCE TEXT AMENDMENT
(Outdoor Firing Ranges)

P11-20. REVISION AND AMENDMENT TO THE CUMBERLAND COUNTY ZONING ORDINANCE, AMENDING ARTICLE II INTERPRETATIONS, CALCULATIONS, AND DEFINITIONS, SECTION 203. DEFINITIONS OF SPECIFIC TERMS AND WORDS BY INSERTING IN ALPHABETICAL ORDER THE TERM AND DEFINITION FOR "FIRING RANGE, OUTDOOR;" AMENDING ARTICLE IV PERMITTED, CONDITIONAL, AND SPECIAL USES, SECTION 403. USE MATRIX BY INSERTING IN ALPHABETICAL ORDER A NEW ROW ENTITLED "FIRING RANGE, OUTDOOR (SEC. 907.1)" IN THE LAND USE COLUMN AND ALLOWING THIS USE AS CONDITIONAL ZONING BY INSERTING A "Z" IN THE CD, A1, A1A, O&I(P), C1(P), C2(P), C(P), M1(P) AND M(P) ZONING DISTRICT COLUMNS ON THIS SAME ROW; AMENDING ARTICLE IX INDIVIDUAL USES BY CREATING AND INSERTING IN NUMERICAL ORDER A NEW SECTION ENTITLED: SECTION 907.1 FIRING RANGE, OUTDOOR, WITH SUBSECTIONS "A" THROUGH "J;" AND UPDATING THE TABLE OF CONTENTS AS APPROPRIATE. (NOTE: ORIGINAL HEADING HAS CHANGED TO REFLECT THE CURRENT PROPOSED AMENDMENT.)

1. **AMEND** Article II Interpretations, Calculations, and Definitions, Section 203. Definitions of Specific Terms and Words, by **INSERTING** in alphabetical order the following definition:

Firing Range, Outdoor: A facility, including its component shooting ranges, safety fans or shotfall zones, parking areas, all structures for classrooms, administrative offices, ammunition storage areas and other associated improvements, designed for the purpose of providing a place for the discharge of various types of firearms or the practice of archery. For purposes of this ordinance, outdoor firing ranges are a principal use of property and therefore, shall not be considered incidental or accessory. This ordinance is exclusive of occasional target practice by an individual on property owned or leased by the individual or the individual's immediate family and sighting of weapons for purposes of hunting, or temporary turkey shoots conducted on a property no more than 12 days in any calendar year; or any activities conducted by a club or lodge as defined in this ordinance. (Sec. 907.1)

2. **AMEND** Article IV Permitted, Conditional, and Special Uses, Section 403. Use Matrix, by **INSERTING** in alphabetical order in the *Land Uses* column the term **FIRING RANGE, OUTDOOR (Sec. 907.1)** with the new row reflecting that outdoor firing ranges are allowed with Conditional Zoning approval as indicated by **INSERTING** a "**Z**" in the CD Conservancy, A1 and A1A Agricultural, O&I(P) Planned Office and Institutional, C1(P)

Planned Local Business, **C2(P)** Planned Service and Retail, **C(P)** Planned Commercial, **M1(P)** Planned Light Industrial and **M(P)** Planned Industrial zoning district columns.
(Editor's note: See *Attachment 1* for matrix layout to be inserted into the existing Section 403)

3. **AMEND** Article IX Individual Uses, by **INSERTING** in numerical order **SECTION 907.1. FIRING RANGE, OUTDOOR**, including sub-sections, as follows:

SECTION 907.1. FIRING RANGE, OUTDOOR.

A. A detailed site plan complying with the provisions of Article XIV shall be submitted for review and if approved, all applicable permits must be obtained prior to commencement of range activity. The detailed site plan shall be sealed by a North Carolina registered engineer attesting that the proposed plan incorporates the specific safety and design standards for outdoor firing range provisions and live fire shoot house provisions, if applicable, as set out in Section 4, Outdoor Range Design; Section 6, Live Fire Shoot House; and Attachments 1-2 through 1-20, of the *Range Design Criteria* (June 2012) as published by the US Department of Energy's Office of Health, Safety and Security for the type of range proposed; except that Section 4.b(10), the second sentence of Section 4.c(7) and Section 6.a(1) shall not be considered for the reason that these sections are specific to the needs of the DOE.

[Editor's note: If adopted, a link to the *Range Design Criteria* publication will be provided for this sub-section on the County's website. A hardcopy will be made available to the public in the office of the Land Use Codes section of the Planning & Inspections Department.

B. The detailed site plan shall show the boundary of the subject property in its entirety and shall further disclose all existing uses, if discernible, and structures within a distance of 300 feet from the boundary.

C. Surface danger zones shall be located entirely on the subject property and shall be designed to contain all projectiles and debris caused by the type of ammunition, targets and activities to be used or occur on the property. The layout of the proposed range(s) with the accompanying safety fans shall be delineated on the required site plan for each/all range(s) to be constructed on the property.

D. A 60 foot wide buffer, undisturbed except for fence installation and vegetative planting, shall be provided around the entire perimeter of the subject property and shall also be delineated on the detailed site plan.

E. A firing range facility must have access to an approved private street or a public street.

F. Unauthorized access to the firing range facility shall be controlled while firearms are being discharged.

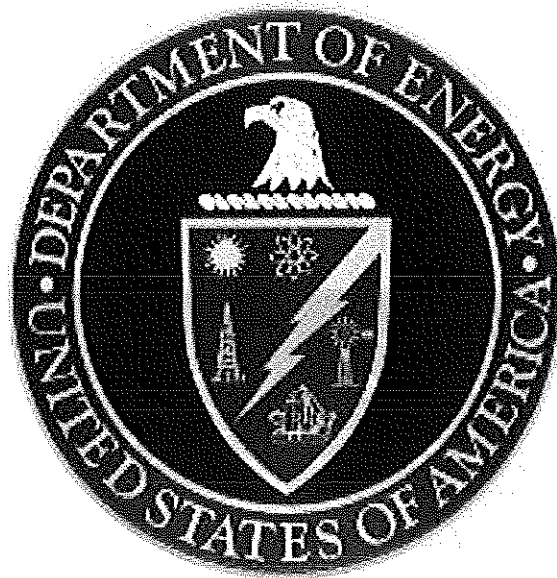
G. The developer/operator of the firing range facility shall provide to Code Enforcement at the time of application for the building final inspection, a certification prepared by a North Carolina registered engineer that the firing range facility has an environmental stewardship plan, which may include semi-annual soil and water sampling, regular liming of the soil to prevent lead migration, reclamation and recycling of the lead and is compliant with the Best Management Practices, specifically relating to lead management, as specified by the Environmental Protection Agency's (EPA) most current edition of *Best Management Practices for Lead at Outdoor Shooting Ranges*.

H. If any firing range facility, or the use thereof, is intended to be expanded to include types of ranges, operations, munitions or activities not covered by the most current conditional approval or pre-existing status, re-submittal/submittal of the site plan for the entire firing range facility for review and approval of the change or expansion shall be required prior to commencement of the change or expansion. This provision applies regardless whether or not the firing range facility was in existence prior to the adoption of this section.

I. All outdoor firing range facilities shall maintain general liability insurance coverage in an amount of not less than Three Million Dollars through an insurance company licensed to do business in North Carolina. The policy shall not exclude coverage for property damage or personal injury caused by the discharge of firearms.

J. All other applicable Federal, State and local regulations, to include the County's Noise Ordinance, shall be strictly adhered to.

RANGE DESIGN CRITERIA



**U.S. DEPARTMENT OF ENERGY
Office of Health, Safety and Security**

AVAILABLE ONLINE AT:
<http://www.hss.energy.gov>

INITIATED BY:
Office of Health, Safety and Security

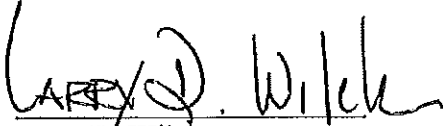
Notices

This document is intended for the exclusive use of elements of the Department of Energy (DOE), to include the National Nuclear Security Administration, their contractors, and other government agencies/individuals authorized to use DOE facilities. DOE disclaims any and all liability for personal injury or property damage due to use of this document in any context by any organization, group, or individual, other than during official government activities.

Local DOE management is responsible for the proper execution of firearms-related programs for DOE entities. Implementation of this document's provisions constitutes only one segment of a comprehensive firearms safety, training, and qualification program designed to ensure that armed DOE protective force personnel are able to discharge their duties safely, effectively, and professionally. Because firearms-related activities are inherently dangerous, proper use of any equipment, procedures, or techniques etc., identified herein can only reduce, not entirely eliminate, all risk. A complete safety analysis that accounts for all conditions associated with intended applications is required prior to the contents of this document being put into practice.

CERTIFICATION

This document contains the currently-approved firearms "Range Design Criteria" referred to in DOE O 473.3, *Protection Program Operations*.



Larry D. Wilcher

Director

Office of Security

Office of Health, Safety and Security

6/4/2012
Date

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ATTACHMENT 1 -- RANGE DESIGN FIGURESAttachment 1-1

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RANGE DESIGN CRITERIA

1. PURPOSE. This document contains design criteria for U.S. Department of Energy (DOE) live-fire ranges for use in planning new facilities and major rehabilitation of existing facilities. This document will be approved and maintained by the Office of Security, Office of Health, Safety and Security (HSS) as a stand-alone document on the HSS website: <http://www.hss.doe.gov/SecPolicy/pfs.html>.
2. PLANNING FACTORS. All applicable local, State, Federal, U.S. Environmental Protection Agency, Occupational Health and Safety Administration (OSHA), and National Environmental Policy Act requirements should be addressed and be reviewed annually (at least every 12 months) by the site to incorporate any requirements and/or changes that occur.
3. PLANNING OVERVIEW.
 - a. General Considerations.
 - (1) Live-fire range design should: (a) promote safe, efficient operation; (b) include provisions for ease of maintenance; and (c) be affordable to construct and maintain.
 - (2) Live-fire ranges should be designed to prevent injury to personnel and to prevent property damage outside the range from misdirected or accidental firing and ricochets. They should also be designed to direct ricochets away from the firing line inside the range.
 - (3) An open range may be established provided that enough distance and land area available to allow for surface danger zones (SDZs) appropriate for the weapons to be used. Lack of SDZs may require baffled ranges. Extreme weather conditions may necessitate indoor ranges.
 - b. Type of Range.
 - (1) Range requirements should be considered when determining the type and size of the range and the material to be used.
 - (2) The range should be suitable for training and qualifications for all courses of fire used on the site as set forth in the HSS-approved Firearms Qualification Courses.
 - (3) The range should be designed for shooting day and reduced-lighting DOE firearms courses, moving targets, multiple targets, and advanced shooting courses/activities (e.g., shooting at steel targets) that may be required by the site.

- (4) When determining whether the facility will be an indoor, open outdoor, partially baffled, or fully baffled range, the decision-making process should include site weather conditions, available land, available funding, and environmental, safety, and health considerations. The following additional factors should be considered.
 - (a) How many shooters must be accommodated?
 - (b) Will emphasis be on training or competitive activities?
 - (c) What types of firearms and range of ammunition will be used? (See Table 1.)
 - (d) Will the facility be used exclusively by DOE or will it be open to other organizations?
 - (e) What special uses will be made of the facility; e.g., advanced training, special weapons, or explosives?
 - (f) What lighting will be required, and what lighting is desired?
 - (g) What administrative space will be needed?
 - (h) What types of target mechanisms will be used?
 - (i) Will spectator safety areas be needed?
 - (j) What types of acoustics will be needed?
 - (k) How will lead contamination be controlled?
 - (l) Where will bullet traps be needed?
 - (m) Where will firearms cleaning and maintenance be performed?
- c. Site Selection Preparation. The site selected should accommodate the required facility. It should meet acceptable standards for safety and have sufficient space, access, and acceptable zoning and construction costs. Land acquisition costs, future land values, and possible restrictions should also be examined. To ensure the project is feasible the following data should be considered.
 - (1) Documents. Copies of specific site, environmental, and construction criteria; applicable mandated regulations from Federal, State, county, and local authorities; copies of ordinances, zoning regulations, soil conservation standards, health department requirements, and any other regulations that may pertain to the project should be obtained.

- (2) Alternate Sites. Identify alternate sites, because one or more of the potential sites may be unsuitable or construction costs may be prohibitive.
 - (3) Technical Data. Gather technical data relevant to each site including zoning maps, aerial photographs, topographic maps, and onsite ground and aerial information.
- d. Considerations. The criteria to be considered in this process are:
- (1) environmental restrictions; e.g., Endangered Species Act, Wilderness Act, and air and water pollution criteria;
 - (2) access; e.g., is it adequate or should a roadway be constructed to the site;
 - (3) construction cost; e.g., berms, baffles, barriers, earth moving;
 - (4) other restrictive Federal or State statutes and local ordinances; and
 - (5) community growth, especially in areas where urban growth is rapid. Escalating property values may make it unwise to construct in a particular area.
- e. Preliminary Design Stage.
- (1) Prepare:
 - (a) a preliminary layout sketch of each site;
 - (b) a draft document, which should include specifications for applicable zoning, building codes, environmental, safety, and health considerations, and other pertinent restrictions;
 - (c) alternative preliminary site plans showing different range layouts;
 - (d) a planning cost estimate; and
 - (e) a risk analysis report.
 - (2) Submit all environmental, zoning and building permit applications for approval. Be prepared, via the draft document, to present and, if necessary, defend the proposal at public hearings before zoning boards, health officials, and other governmental bodies involved in issuing permits.
- f. Final Design Stage.
- (1) The preliminary site plans include a layout of the proposed range with its accompanying safety fan in a cross section and top view.

- (2) The range master/manager, training manager, safety manager, industrial hygienist, appropriate operating personnel and public works engineer should review and approve the design requirements during the planning phase, before the construction drawings are started, and during the construction phase.

4. OUTDOOR RANGE DESIGN.

a. Site Selection.

- (1) Outdoor range sites should be remote from other activities but accessible by road. SDZs should not extend across traveled roads, navigable waterways, railroads, or other areas.
- (2) To protect against unauthorized access, SDZs should be controlled while firearms are being discharged. To prevent future encroachment, SDZs should be recorded on site maps.
- (3) If other methods to control access to SDZs are not effective, then the zones should be fenced in. Natural barriers around the site; e.g., rivers, hills or a large drainage channel may be used to prevent encroachment and will ensure privacy. The best site is one with a natural backstop for projectiles to reduce the cost of constructing earth impact berms and to provide natural sound abatement.
- (4) Outdoor ranges should be oriented to eliminate firing into the sun. The range should be oriented to the north or slightly to the northeast. The ideal direction is between due north and 25° northeast.

b. Range Planning.

- (1) Firing into upward sloping land and land with natural backstops of hills or mountains is recommended.
- (2) Firing platforms, access roads, and targets should be elevated above the flood level.
- (3) The line of fire in rough terrain should be perpendicular to high ground. The line of fire on flat terrain should be free of knolls, ridges, and trees that reduce visibility.
- (4) Known distance ranges should be as flat or evenly graded as possible. If the grade between the firing points and target does not exceed 2 percent, then the firing points may be below the target.
- (5) Roads used for setting and servicing targets in impact areas and for maintenance of earth berm may be graded pathways. Roads in areas not subject to disturbance; e.g., vehicle parking areas, and roadways behind

firing lines or out of range of weapons, should be designed for anticipated vehicle weight and usage.

- (6) The ground between the targets and firing line should be free of any hardened surface (smooth-surfaced walkways excepted) such as rocks or other ricochet-producing material.
 - (7) The surface may be sodded or planted with low-growing ground cover.
 - (8) The surface should be smooth, firm, and graded to drain away from the targets. A slight side-to-side grade of 1 percent to 2 percent should be provided for storm water runoff. For baffled ranges, the lateral slope should not exceed 2 percent because of the geometry of the baffle system.
 - (9) The overall size will be governed by the range distance and number of firing positions.
 - (10) Range distances from the firing line to the target are determined by the approved DOE qualification courses of fire for all weapons available for use by Protective Force (PF) personnel and by site-specific training courses of fire. The distances from the firing line to the target should be accurate to ± 0.1 percent. It is important that any inaccuracy in the firing line-to-target distance is a greater, rather than lesser, distance (e.g., 101 yards for a 100-yard range instead of 99 yards).
 - (11) Shooters should have secure footing.
- c. Surface Danger Zones. SDZs should be established to contain all projectiles and debris caused by firing ammunition and explosives (see Table 1). SDZ dimensions are dictated by the types of ammunition, types of targets, and types of firing activities allowed on the range. A basic SDZ consists of three parts: impact area, ricochet area, and secondary danger area (Figure 1). Figures 2 through 6 illustrate the application of the basic parts in the design of SDZs for various kinds of range activities.
- (1) The primary danger area established for the impact of all rounds extends 5° to either side of the left and right limits of fire and downrange to the maximum range of any ammunition to be used on the range.
 - (2) The ricochet area is 5° to either side of the impact area and extends downrange to the maximum range of any ammunition to be used on the range.
 - (3) The secondary danger area is that area paralleling, and 100 yards outside of, the outermost limits of the ricochet area and extending downrange to the maximum range of any ammunition to be used on the range.

- (4) Boundaries of SDZs must be posted with permanent signs warning persons of the danger of the live-fire range and prohibiting trespassing. The signs must be posted in a way that will ensure a person cannot enter the SDZ without seeing at least one legible sign (i.e., usually 200 yards distant or less).
 - (5) Limit of fire markers, both external and internal, must be placed to denote right and left limits of fire. Where cross firing is to be conducted, internal limit markers must be emplaced to denote internal right or left limits of fire from specific firing positions.
 - (6) Ranges may be located parallel to one another if in compliance with Figure 19 for separation.
 - (7) When there is insufficient distance to lay out a new range with the required SDZ or utilize other ammunition with a maximum range that does not exceed the SDZ, engineered or administrative controls can be used to control firing on that range. Permission to deviate from established SDZ requirements must be granted by the DOE cognizant security authority and supported by a safety risk analysis.
 - (8) Administrative controls such as use of the low-ready position or engineered controls such as muzzle traverse/elevation limiters can be used to control the firearm. Natural terrain such as a mountain or a hill provides an excellent backstop for firing. The terrain should be high enough to capture rounds fired at up to a maximum 15° muzzle elevation.
 - (9) To change the size and shape of an SDZ, baffles may be installed. Partial and full baffle systems consist of the following components: overhead baffles, a canopy shield over firing points, bullet impact berm, and side berms, sidewalls, or side baffles. A fully baffled range must be constructed so all direct fire can be contained within the range (see Figures 7 and 8).
- d. Support Facilities. Range planners should consider the site-specific need for the following range support facilities.
- (1) Targets.
 - (2) Target storage.
 - (3) Bunkers, trenches, and protective barriers for personnel protection.
 - (4) Range control towers.
 - (5) Toilets.
 - (6) Range poles, banners, markers, and signs.

- (7) Communication systems.
- (8) Access and range roads.
- (9) Parking areas.
- (10) Potable water.
- (11) Target maintenance.
- (12) Ammunition storage.
- (13) Power.
- (14) Sewer.
- (15) All other necessary utilities.

Table 1. Maximum Range of Small Arms Ammunition

Caliber	Maximum range of small arms ammunition (distance in meters/yards)
.22 long rifle	1400/1531
.38 revolver	
Ball, M41	1600/1749
Ball PGU-12/8	1900/2077
.40 pistol	
Ball	1783/1950
JHP	1908/2086
Frangible	1000/1093
.45 pistol	1500/1640
.45 submachine gun	1600/1749
.357 magnum	2160/2362
9mm pistol	1740/1902
9mm submachine gun	1920/2099
.44 magnum	2290/2504
.50 machine gun	
Ball, M33	6500/7108
AP, M26	6100/6671
12 gauge shotgun, riot 00 buckshot	600/656
.30 rifle and machine gun	
Ball, M23	3100/3390
AP, M2	4400/4811
.30 carbine	2300/2515
5.56mm rifle	
Ball, M193	3100/3390
7.62mm rifle and machine gun	
Ball, M80	4100/4483
Match, M118	4800/5249
40mm	
M79	400/437
Mk-19 40mm	2200/2406

e. Design Criteria.(1) Firing Line Items. Provide the following components:

- (a) Floor Surface. The surface should be smooth, firm, and graded to drain away from the targets. A slight side-to-side grade of 1 percent to 2 percent should be provided for storm water runoff. Transverse firing line grading should match target line transverse grading. The distance between the firing line(s) must be sufficient to support the type of training conducted. Firing lanes must be clearly marked on the surface to match the targets. Depending on the number of personnel to be supported and the funds available, the following surfaces should be considered:

- 1 ground firmly compacted with mown grass;
- 2 sand or fine gravel;
- 3 wood decking of sufficient thickness and support to prevent movement; and
- 4 concrete topped with appropriate cushioning material.

- (b) Overhead Containment. On partially and fully baffled ranges, a ballistic canopy (see Figure 9) should be provided over all locations where a weapon may be expected to be discharged (firing line, by definition). Figure 9 represents one construction approach, but the canopy must contain the direct fire effects of the most energetic round fired on the range. This canopy should begin at least 3 feet behind the firing line. General structural requirements may dictate more distance. The canopy should extend forward a minimum distance of 13 feet minimum, which will work geometrically with the first overhead baffle to prevent a weapon from firing directly out of the range (see Figures 16 and 17). The canopy should be constructed of ballistic material with sacrificial cladding as described below. Sound reduction ceiling waffles should be considered. Weather roofing is required above the ballistic material and it must slope sufficiently to drain.

(2) Firing Point. The depth of the firing point is determined by the shooting activity; e.g., rifle firing requires more depth than pistol firing.

- (a) The minimum depth of the firing point is the area required for the shooter, shooter's equipment, scorers, and range officers. For example, a pistol range might have a firing line approximately 6 to 10 feet deep, while a rifle range would have a firing line up to 20 feet deep. This variation is based on available space, type of

shooting, size of target frames and carriers, and the spacing of target frames or carriers.

- (b) For rifle ranges, each firing point should be 9 feet wide (see Figure 10). Firing lanes for pistols and shotguns should be 5 feet center to center (see Figure 11).
- (3) Ballistic Material. The purpose of this material is to absorb, deflect, or fragment projectiles. Material for baffles on partially and fully baffled ranges is shown in Figures 12 and 18. Wood that is used should be of middle grade exterior timber or plywood. Timber in contact with the ground must be pressure-treated for this purpose. Avoid exposed connectors if possible. Refer to Table 2, Thickness of Material for Positive Protection Against the Caliber of Ammunition Listed, for the thickness of various materials.
- (4) Sacrificial Cladding. Provide 3/4-inch thick plywood with a 3/4-inch air gap on any surfaces (baffles, wing walls, metal connectors, etc.) that are within 11 yards of the firing line to prevent back splatter.
- (5) Firing Line Cover Material. The firing line should be covered to protect the shooter and allow activities to be held regardless of the weather. On ranges with several firing lines, the cover is generally installed at the longest firing distance. The firing line covers described below are for shelter only and should not be confused with the ballistic firing line canopies required on baffled ranges. Material that can be used for firing line covers includes wood, concrete, steel, and plastic. Most covers are constructed from wood products and are a shed or gable roof design. In some cases, corrugated metal or fiberglass roofing material can actually increase sound levels at the firing line and in areas around the range. Therefore, to reduce noise, corrugated metal or fiberglass roofing material should not be used unless it is acoustically treated. The structure should be designed to include the following:
 - (a) The shed roof should have a 6-inch cavity filled with fiberglass insulation (or equivalent) and be enclosed on the bottom with 3/4-inch plywood or insulation board. Although this will not provide a completely effective sound barrier, sound waves will strike and penetrate the inside layer of plywood, and the sound will be reduced;
 - (b) A plywood shed roof should have a 6-inch hollow core enclosed with a small grid mesh screen and a six-mil polymer barrier to retain the insulation. The intervening space should be filled with blown-in insulation to trap sound waves and reduce the drum effect of an open roof; and

- (c) A gable roof has a large hollow area above the joists; however, additional sound damping materials should be installed to reduce the drum effect and the sound pressure level as they are reflected onto the firing line area. The underside of the roof surface will require a minimum of 4 inches of insulation to fill in between the rafters and a minimum of 3 inches of insulation above the ceiling and between the joists. This will reduce the drum effect caused when sound waves strike surface material (e.g., corrugated metal) and will absorb a portion of the reflected sound waves.
- (6) Surface Material. Positions should be hard-surfaced (e.g., concrete, gravel, wood, asphalt, or sod).
- (a) For ranges where prone shooting is conducted, gravel or similar materials may cause difficulty for the shooter. When the surface material is concrete or asphalt, shooting mats or padding will be required when the kneeling or prone positions are used.
 - (b) For ranges with multiple firing lines, hard-surfaced firing lines located downrange of another firing line should be recessed or shielded from bullet impact to avoid ricochets off exposed edges.
- (7) Landscaping. The site should be landscaped to provide for erosion control, noise abatement, maintenance, appearance, fire protection, and safety.

NOTE: Any landscaping will complicate the removal of lead in the berms, especially on impact surfaces, and will create higher maintenance costs.

- (a) Berms should be planted with grass to prevent erosion. Ground cover is acceptable on existing berms that have been maintained and where erosion is not a problem.
- (b) When grass is selected as a ground cover, it should be appropriate for the geographic area and should readily grow and provide good coverage. The degree of shading caused by overhead baffles will determine the type of grass for the range floor. Use grasses and cover for earth berms that will not be accessed by moving equipment so that natural growth heights will be acceptable. In areas where the soil is poor or extremely sandy, plants such as Bermuda grass, ice plant, or vine root can be used to control soil erosion.
- (c) Heavy landscaping may be used to cut down on noise transmission. Plants and trees may be planted behind the firing position shelters to alleviate noise transmission problems.

Soundproofing the firing line structures should be considered in problem areas. Trees should be kept away from firing lines to allow range control officers to see all shooters.

- (d) For windbreaks, trees may be planted along the length of the range with partial side berms or wing walls where strong prevailing crosswinds are problems to shooting accuracy.
- (e) Densely planted rows of fast-growing, compact, and thorny shrubs may be planted below the trees at ranges with partial berms or wing walls to abate noise, prevent encroachment, and alleviate crosswind problems.

(8) Target Line and Mechanisms. Components must be as follows:

- (a) The target line should be a minimum of 30 feet from the toe of the impact berm. The distance between targets must be the same as the distance between firing positions.
- (b) Target line bases must match grading with the firing line. Mechanical target support bases must be protected from the direct line of fire. They may be buried flush with the ground or placed behind a protective wall. Note that a small raised earth berm at this location generates significant ricochet. The complexity of the mechanism will dictate the protection requirement. See Figure 13 for wall or trench protection of high cost target line mechanisms.
- (c) Target supports can be made of steel angles and channels, PVC pipe or wood. Do not use metal parts within 33 feet of the firing line where direct fire strikes are anticipated. Discharging weapons close to metal surfaces is extremely dangerous. Present the smallest surface area that is structurally sound to the line of fire to minimize ricochet. Design the target holders for easy and inexpensive replacement. Portable, self-supporting 2- by 4-inch wood frames or 2-inch by 2-inch wood plank placed into buried PVC pipe work well on simple ranges. The full face of the target must be visible to the shooter.
- (d) Turning targets and the display time are at the discretion of the user. Commercially available, electrically motorized target carrier and electronic scoring systems should be considered where economically feasible.
- (e) On open ranges, a single target line with multiple firing lines is preferred. On partially or fully baffled ranges, in most instances, a single firing line with multiple target lines will produce the most cost-effective range because of the firing line canopy. An

extremely advanced target mechanism may be significantly more expensive than multiple canopies.

- (9) Impact Structures. The structure varies depending on the type of range. Natural terrain such as a mountain, cliff, or steep hill may be incorporated into impact structures provided the completed structure complies with the minimum design requirements. Acceptable structures by range type are listed below.
- (a) For open ranges, the top elevation of the earth impact berm should be 26 feet above the range surface for ranges 100 yards long or longer and 16 feet above the range surface for ranges 50 yards long or less. The impact berm should extend 50 yards beyond where the target line ends for 100-yard-long ranges or until joining with the side containment, if provided for ranges 50 yards long or less.
 - (b) The suggested elevation may be met by designing a combination of earth berm and vertical baffle (see Figure 14). The earth berm portion should have a top elevation of 16 feet above the surface of the range. The vertical baffle should be constructed of ballistic material and designed to withstand local seismic and wind loads. This combination arrangement would reduce the footprint and the amount of material in the earth berm.
 - (c) The preferred slope of the impact berm face is 1 to 1 or steeper. The steeper the slope, the more likely the berm is to absorb projectiles. The top should be 10 feet wide. The impact slope should be constructed with a 3-foot layer of easily filtered soil (to reclaim the lead projectiles) free of boulders, trees, rocks, stones, or other material that will cause ricochet. The rear slope should be appropriate to the native soil and maintenance requirements.
 - (d) For partially and fully baffled ranges, the top elevation of the impact structure will vary depending on the overhead baffle and impact structure arrangement. The impact structure for a partially baffled range can be: standard impact berm, bullet trap, or hybrid. For fully baffled ranges, the impact structure must be a bullet trap. In all instances, the impact structure must connect to the side containment. The top of the berm should be at an elevation 5 feet above the point where the highest line of direct fire can strike the berm.
 - (e) Outdoor baffled bullet stops can be constructed by placing the last vertical overhead baffle over the last target line and placing a sloped baffle to connect from the top of the earth berm to the back of the last vertical baffle. The bottom of this lower-sloped overhead baffle should be 2 feet above the highest point on the

berm where direct fire might strike. See Figure 15 for material and construction details. Rainfall runoff from the sloped baffle onto the berm must be considered. (See “Use of Bullet Traps and Steel Targets” for Shoot House bullet trap information.)

- (10) Side Containment. For partially and fully baffled ranges (Figures 7 and 8), the top elevation of the side containment must geometrically mate with the overhead baffles to be high enough to prevent any direct fire from exiting the range. Full-side height containment should extend 3 feet to the rear of the firing line. Locate the side containment at least 10 feet outside of the centerline of the outermost firing lane. Construction may be in the following forms.
- (a) Earth Berm. Construct earth berms to an inside slope of 1 to 1.5. If native soil characteristics will not produce a stable slope at this angle, provide geotechnical fabric reinforcement in the fill. The top width of the berm should be at least 10 feet. No rocks are permitted in the top 3 feet of the inside surface. Generally, earth berms cannot be used on partially or fully baffled ranges; however, earth berms are permissible if the firing range is small and the overhead baffle and berm geometry intercept ricochets.
- (b) Continuous Walls. Construct continuous walls of ballistic material to withstand local wind and seismic loads. Provide sacrificial cladding to 13 feet forward of the firing line and 3 feet behind the firing line. Continuous walls are preferred for fully baffled ranges.

**Table 2. Thickness of Material for Positive Protection
Against the Caliber of Ammunition Listed**

Cover material	Caliber and thickness required to stop penetration		
	5.56 mm	7.62 mm and Cal. 30	Cal. 50
Concrete (5,000 lbf/in ²)	5 inches	7 inches	12 inches
Gravel-filled concrete masonry units	8 inches	12 inches	24 inches
Broken stone	14 inches	20 inches	30 inches
Dry sand	16 inches	24 inches	32 inches
Wet sand	25 inches	36 inches	48 inches
Oak logs (wired)	28 inches	40 inches	56 inches
Earth			
Packed or tamped	32 inches	48 inches	60 inches
Undisturbed compact	35 inches	52 inches	66 inches
Freshly turned	38 inches	56 inches	72 inches
Plastic clay	44 inches	65 inches	100 inches

NOTE: Figures are based on new material. Degradation may occur over time.

- (c) Wing Walls. Wing walls (side baffles) are discontinuous side protection set at 45° to the line of fire. Locate the wing walls so that they are overlapped by 6 inches based on any line of fire that may strike them. Construct the wing walls of ballistic material to

withstand wind and seismic loads. Additionally, provide sacrificial cladding on wing walls closer than 30 feet to the firing line.

- (d) End Walls. End walls may be constructed at the firing lane edge on the firing line in lieu of extending side containment 3 feet behind the firing line. Walls should be long enough to close off any line of sight between the end of the side containment and the rear 3 feet mark. The end walls should be constructed of ballistic material with sacrificial cladding extending from the canopy to the firing line surface.
- (11) Overhead Baffles. Overhead baffles must be located so that no direct fire can exit the range from any firing position. The first overhead baffle must be geometrically coordinated with the firing line ballistic canopy (see Figure 9). The elevation of the top of each succeeding baffle should be 6 inches higher than a line of fire that just clears beneath each preceding baffle (see Figure 16). Overhead baffles should be the same height and spaced apart down range to achieve the required geometry (see Figure 17). The last baffle should be placed so the line of fire will strike the impact structure no higher than 5 feet below the top elevation of the structure. On a fully baffled range, the last overhead baffle must be over the last target line.
- (a) On partially baffled ranges, overhead baffles must extend laterally to within 1 foot of the side containment. On fully baffled ranges, the overhead baffle must tie into the side containment.
 - (b) The vertical dimension of an overhead baffle when it is vertical varies with the number and spacing of the baffles. Normally, the height is between 5 and 8 feet when considering structural support size and costs.
 - (c) The baffles must be constructed of ballistic material. Baffles within 11 yards of the firing line should be covered with sacrificial cladding. See Figures 12 and 18 for possible configurations.
 - (d) Space the structural columns as far apart laterally as possible to open firing lanes. If possible, do not construct columns within the range. Design columns or beams to withstand local wind and seismic loads, and provide protective steel plate on the faces of the columns exposed to the firing line in accordance with Figures 12 and 18. Provide sacrificial cladding if the column is within 10 yards of the firing line. Overhead baffles may be placed on a flatter slope and overlapped to function as firing line canopies if multiple firing lines are to be used (see Figure 17). This arrangement is cost-effective for baffled combat lanes.

5. INDOOR RANGE DESIGN.

a. Use of Indoor Ranges.

- (1) Indoor ranges must be designed so projectiles cannot penetrate the walls, floor or ceiling, and ricochets or back splatter cannot harm range users. Considerations should be made for cleaning of all surfaces and handling of hazardous wastes.
- (2) Lead exposure requirements must be reviewed for applicability.

b. Site Selection.

(1) Walls and Partitions. Indoor ranges must incorporate walls and partitions capable of stopping all projectiles fired on the range by containing or redirecting bullets to the backstop.

(2) Existing Buildings. If there are existing drawings of the facility, copies should be obtained from the original owner, architect, engineer, builder, or building permit. If original drawings of the building are not available, a sketch can be made of each floor of the building with a special emphasis on the load-bearing walls. The following considerations should be used when making the initial evaluation of an existing building.

(a) General Construction. Buildings constructed of wood products should be avoided. Modifications to reinforce the structure to support metal backstops or to reduce fire hazards may not be cost-effective.

(b) Exterior Walls. The type of exterior wall construction (e.g., masonry, wood, concrete, metal, combination, other) should be identified. Masonry buildings should be given primary consideration, especially those constructed on concrete slabs.

(c) Floors, Walls, and Ceilings. Floors, walls, and ceilings must be able to contain the sound in addition to the bullet fired.

1 The ideal wall is made of poured concrete a minimum of 6 inches thick.

2 To aid in range cleaning, concrete floors should be finished so they have a nonporous surface.

3 Ceilings should be 8 feet high and enclosed to reduce air turbulence created by ventilation systems.

4 Evaluate the structural support designs of older buildings for their ability to withstand new loading. Original design

considerations usually do not allow for installing heavy backstops and other range equipment.

- 5 To decide if modifications are necessary, slab buildings must be analyzed carefully to determine the capacity for floor loading. If there are no floor drains and it is economically feasible, modifications should also include adding one or more floor drains.
 - 6 Ceiling joists may require strengthening to support baffles and shielding material.
- (d) Electrical. Electrical needs may require the installation of heavy-duty wiring both internally and externally to accommodate the added power needs of range ventilation, heating, lighting, and target-carrier mechanisms.
 - (e) Plumbing. Plumbing does not usually require major modifications; however, heavy metals may be prohibited from area wastewater treatment collection systems. Therefore, an approved filtration system may be necessary for disposal of hazardous waste material; e.g., lead.
- (3) Precast Buildings.
- (a) Precast concrete companies can provide complete precast buildings (job site-delivered) if engineering specifications for steel placement are provided on a set of plans (drawings) for the proposed building.
 - (b) Precast assembly allows for installation of a roof design more suitable for an indoor range. Gabled or hip roof designs should not be used.
 - (c) Hollow, precast concrete panels provide an option to bar joists, eliminating bullet ricochet or splatter. A flat bar joist design is the recommended alternative to hollow, precast concrete panels.
 - (d) The flat roof design also provides support for heating, ventilating, and air conditioning (HVAC) equipment outside of the range, which saves space and reduces cost.
- (4) New Construction. New indoor construction projects require the same guidelines as existing buildings; however, they offer the advantage of building a structure specifically for use as an indoor shooting range.

- c. Range Planning. Design work for ventilation, wall structures, floors, ceiling, acoustics, backstops, and lighting will depend on how the range will be used.
 - (1) A determination for the type of building required includes the following considerations.
 - (a) Can the range be built in an existing building or is a new one required?
 - (b) How large should it be?
 - (c) How many shooters will it be expected to serve?
 - (d) Will it be used for competition?
 - (e) Should space be allowed for classrooms?
 - (f) How much will the facility cost?
 - (2) The planning process should include:
 - (a) obtaining ordinances, zoning regulations, building codes, soil conservation regulations and other information pertaining to legal requirements;
 - (b) for evaluation, identifying a site for a new building or several existing buildings that may have the suitable design characteristics; and
 - (c) gathering other technical information relevant to the project. This information includes zoning requirements, onsite information, and range design criteria. Local zoning codes or health department regulations normally will provide answers or solutions on how the project is to be handled.

- d. Design Criteria. Based on the site selected, type of shooting, number of users, and site layout, the next step is to design the facility by preparing detailed drawings showing specifications and necessary dimensions. The four main considerations for indoor ranges are shooter needs, type of shooting activity, number of firing points, and number of users. Special consideration should be given to ventilation, lighting, safety baffles, and backstop design. The following standard and optional features for indoor ranges should be considered.
 - (1) Backstops and Outdoor Baffled Bullet Stops. See “Use of Bullet Traps and Steel Targets” for Shoot House bullet trap information.

- (a) The design of a backstop or baffled bullet stop is a contributing factor to the service life of the unit. Steel should be installed according to the type of ammunition to be used and to proven angle configurations.
- (b) The design criteria should be based on the planned use of the facility. Metal plates selected for use in a backstop or baffled bullet stops must resist repeated stress according to the degree of stress applied. Necessary characteristics are resistance to abrasion, resistance to penetration, surface hardness, thickness, and alloyed strength to resist metal fatigue.
- (c) The main backstop is generally a fabricated steel plate or series of plates used to stop bullets fired on a range. Backstop configurations and plate thickness will change according to type of shooting activity.
- (d) Steel backstops with sand or water pits are common; however, a few indoor ranges use earthen or sand backstops.

CAUTION: Earthen or sand-filled backstops are not recommended because they can create health hazards for maintenance workers from silica and lead dust. They also cause excessive wear on ventilation fans.

- (e) Backstops must extend from side to side and from ceiling to floor to protect the end of the range completely from penetration by direct bullet strike and prevent ricochets, back splatter, and splatter erosion of side walls.
- (f) Four basic backstop designs are used for indoor ranges: Venetian blind, escalator, Lead-a-lator[®], and the angled backstop (45°) back plate. Other backstop designs exist and should be researched for applicable use.

1 Venetian Blind Backstop. Requires less space, but without proper installation and regular maintenance it can cause back splatter problems from exposed edges of each main segment of the backstop. Keeping the exposed edges ground to original specifications is time-consuming, difficult, and requires skilled personnel.

- a To control back splatter, a curtain should be hung in front of the backstop. Tests have been conducted on materials including canvas, burlap, cardboard, insulation board, and synthetic rubber. Properly installed, these materials effectively stop back

splatter. Walls using insulation board or a synthetic rubber curtain are best.

- b The main advantage of the venetian blind backstop is minimal space requirements. While an angled plate or an escalator will use 14 feet of space, the venetian blind uses only 5 feet.

2 Escalator Backstop. Sets up with flat steel plates laid out on a framework sloping away from the shooter. Between each series of plates, an offset allows a bullet sliding down the facing surface to drop into a hidden tray for easy cleanup. At the top or back of the backstop, a swirl chamber is provided to trap the bullets or bullet fragments as they exit the backstop surface. Once the bullet's flight ends in a spin-out chamber, the bullet or pieces fall into a cleanup tray.

3 Lead-a-lator[®]. A variation of the escalator-type backstop that uses a curved instead of flat piece of steel. The surface is concave and operates so that a bullet will follow the contour of the surface into a dry lead spinout chamber where it is trapped.

4 Angled Backstop (or 45° Inclined Plates). Uses a sand or water trap and has been the traditional alternative for indoor ranges.

- a The angle of the plate should never exceed 45° from the ground. The 45° plate and pit backstop is relatively inexpensive, but there are several disadvantages. Sand traps require frequent cleaning to remove bullet fragments. Cleaning operations require workers to wear high-efficiency particulate air (HEPA) filter masks if material is removed dry. It is best to dampen the sand trap material before and during cleaning operations to eliminate dust. To maintain a healthier internal environment, frequent removal, disposal, and replacement of lead-laden sand is required. The surface should be continually raked to keep the sand level and to guard against splatter as lead buildup occurs.

- b The cleaning operations are easier when a water trap is used. However, a water trap requires chlorine and other chemicals to retard algae growth and antifreeze in colder months to prevent freezing.

Installing a water pit requires a different approach to foundations and footings, especially in areas affected by earthquakes or freezing.

- (2) General Range Cleaning. Both dry and wet methods can be used to clean the range. The method selected depends on the frequency of use. The wet method is preferred when floor drains are available, and keeping materials wet during cleaning operations reduces or eliminates release of microscopic dust particles. When dry methods must be used, workers must use the appropriate personal protective equipment (PPE) that has been established by local industrial hygiene personnel. After cleaning operations are complete, workers must shower and have work clothing laundered.
- (3) Backstop Steel Plate Specifications.
 - (a) Steel plates supported by concrete or masonry should be anchored by expansion bolts or toggle bolts, as suitable for construction, with flush countersunk heads not more than 12 inches on center of all edges of each plate. Joints and edge lines should be backed with continuous ½-inch thick plate no less than 4 inches wide. Bolts should pierce both the facing and back plates. Expansion bolts should penetrate concrete not less than 2 inches. Steel plates must have milled edges at all joints.
 - (b) Joints must be butted flush and smooth. After the plates are erected, they must not have any buckles or waves. Exposed edges must be beveled at 42° to a fillet approximately ½-inch thick. There must be no horizontal joints in any steel plate work.
 - (c) Welding must meet the American Welding Society code for welding in building construction. Steel plates joined at, and supported on, structural steel supports must be spot-welded to steel supports not more than 6 inches on center.
- (4) Baffles, Deflectors, and Shields. Baffles on indoor ranges protect lighting fixtures, HVAC ducts, ceilings, and target carrier apparatus. Baffles are designed to protect against the occasional errant bullet but not for repeated bullet strikes.
 - (a) To cover or protect vulnerable ceiling areas or range fixtures, baffles must extend the entire width of the range and downward. Spacing of baffles on a 50 to 75 feet range depends on the ceiling design. Range distance (firing line to target line) and height are factors. Ceilings must be impenetrable.

- (b) Baffles or deflector plates must be used when modifying an existing building, especially in a building constructed of wood. This will prevent bullets from escaping or penetrating. Baffles should be a minimum of 10-gauge steel covered with a minimum of 1 inch of soft wood to prevent back splatter. The wood traps the projectile, whereas bare steel redirects it downward into the range area. A wood surface must be applied to overhead baffles, because ranges with untreated baffles usually show significant damage to concrete floors and often complete penetration through wood floors.
- (c) Baffles should be installed at a 25° angle as measured from the horizontal plane of the ceiling. The baffle size and placement depends on what surface areas require protection. For example, ceiling baffles are wider than side baffles.
- (d) Unlike baffles, deflectors are installed vertically and horizontally to redirect wide-angle shots into the backstop area. Deflector shields protect pilasters, leading edges of sand traps, bottom edges of backstops, doorways, windows, ventilation registers along the wall, etc. Deflectors are not covered with wood generally, but may be. These devices are also installed at a 25° angle either to the wall surface or floor.
- (e) To protect ceiling areas, special impenetrable shields are installed above the firing line, especially in wood frame buildings.
 - 1 Shields should extend the entire width of the range and 12 feet forward of the firing line. Floor shields may be required on wood floors.
 - 2 Shields must be constructed from metal sheets according to planned use. For example, 10-gauge steel covered with a minimum of 1 inch of soft wood is effective in stopping most pistol calibers.
- (5) Floors, Walls, and Ceilings. Indoor range facility floors, walls, and ceilings must be impenetrable; therefore, an existing building must have a structural analysis to determine loading factors that may exceed original design specifications. Wooden buildings may require modifications to support the increased weight. Specifications for new construction call for either poured-in-place concrete, pre-cast concrete, or dense masonry block. Solid cinder block should be used in place of hollow-core block. Specifications for modifying existing buildings call for adding additional materials to prevent bullet escape, which can be done with wood and steel laminated shields. Laminated shields can be constructed onsite by placing sheet-steel or steel plates between two sheets of ¾-inch plywood. While

this method is more expensive than the extended booth design, it allows for an open firing line and better visibility for the range officer. Walls should be treated beginning 3 feet to the rear of, and extending forward of, the firing line until all vulnerable surfaces are protected. Acoustical material should be applied to the surfaces to aid in sound control.

- (a) Floors. The range floor should be constructed by using a single pour and a fine, uniform-aggregate mix of concrete. Reinforcement should be No. 4 steel rods placed 12 inches on center along with 6- by 6-inch 8/8-gauge welded wire fabric. This may vary according to soil conditions. Very large floor areas may require two or more pours with expansion joints between each slab.
- 1 The floor should be designed to slope down toward the target line, beginning at the firing line, ¼-inch per foot.
 - 2 The floor should be no less than 4 inches thick.
 - 3 Floor size is governed by design. Larger size will result in higher costs for ventilation, lighting, heating, and overall building design. The decisions should be based on expected number of users versus overall cost.
- (b) Floor Guards. Floor guards are provided to protect leading edges or protrusions; e.g., drains, traps or other protrusions from the floor area. Floor guards are designed to redirect errant bullets into the backstop area, which minimizes range damage.
- 1 Floor guards are constructed from 10-gauge steel and may be covered with wood.
 - 2 Floor guards are installed horizontally along the floor surface parallel to the firing line.
 - 3 Floor guards typically slope away from the firing line at a 25° angle to the horizontal.
 - 4 Floor guards should extend only as high as necessary to protect exposed surfaces.
- (c) Floor Drains. Floor drains should be constructed of cast iron soil pipe. The drain pipe should be attached to a lateral drain located 1 foot forward of the backstop floor guard. The drain pipe must lead to a filtration system approved by the cognizant environmental, safety, and health organization on the site.

- (d) Walls. Poured concrete or masonry is preferred for wall construction, but wood may be used. Wall thickness must conform to acceptable engineering standards and comply with Federal, State, county and local zoning codes. Usually, no less than 3-inch thick, reinforced walls should be constructed to prevent the exit of any projectiles.

NOTE: This specification usually requires the use of steel or similar material where wooden walls are used. The size depends on building design, geological conditions, and climate. Size includes the height, thickness, and length of the running wall.

- (e) Ceiling. Ceiling material should reduce sound, protect lighting devices, reflect light and be impenetrable. Typically, ceilings include 10-gauge steel baffles, 2- by 4-foot white acoustic panels, and clear-light panels.

1 The ceiling should be a minimum of 8 feet above the floor level and have an acoustically treated, smooth surface to allow for positive air movement downrange.

2 Baffles to protect adjoining areas should be above a false ceiling or designed into the roof/ceiling structure.

- (6) Shooting Booths. Commercial or locally built shooting booths may be desirable on pistol ranges; however, they are not recommended for rifle ranges. Shooting booth panels can provide an impenetrable barrier between shooters, reduce sound levels, restrict the travel of brass, and act as a spray shield when revolvers are used.

- (a) Shooting booths should be omitted for ranges that use only rifles.
- (b) A shooting booth should never extend more than 18 inches behind the firing line because greater extension may obstruct the range control officer's visibility.
- (c) Bullets fired from any firearm used on the range must not be able to penetrate booth panels. The booth panel must be able to withstand the impact of a bullet fired at any angle to the surface and at point-blank range.
- (d) Design criteria for the construction of booth panels are as follows:
- 1 Cover the 10-gauge steel plate with a nominal 2 inches of soft wood. In a series of tests using 10-gauge steel plate, firing all lead bullets at right angles, the plate covered with a nominal 2 inches of soft wood withstood direct hits from

- all standard pistol calibers up to, and including, .44 caliber magnum;
- 2 Use special acoustical materials to ensure that panels reduce muzzle blast effects on all shooters and range personnel;
 - 3 Ensure that panels do not restrict airflow;
 - 4 Ensure that panels do not restrict the range officer's visibility of the firing line; and
 - 5 Construct panels so they extend from the floor to a minimum height of 6 feet. Panels should be ceiling height.
- (7) Target Carriers and Turning Mechanisms. An indoor range can be operated more efficiently and safely by installing a target transport system. This system may be a simple, hand-made device or a completely automatic, electrically powered system. Either one will enhance safety by eliminating the need to walk downrange to replace targets. Target carrier systems speed up range operations. A turning target mechanism is available that faces the target parallel to the line of sight and then turns the target 90° to the line of sight to begin the stated time period. The target carriers should position the targets in the approximate center of the backstop.
- (8) Control Booth. Range control booths must allow for maximum visibility and provide for easy access into and out of the range and ready area. The control booth should provide seclusion from and immediate access to the range environment. This design protects the range officer from frequent exposure to high sound levels and lead emissions.
- (9) Communications. A communications system capable of relaying range commands distinct and separate from the sounds generated by shooting activities is required. Communications systems must account for shooters who wear two pairs of hearing protectors and persons who have substantial hearing loss.
- (10) Ventilation and Filtering Systems. This section deals with the design or redesign of ventilation systems for indoor firing ranges. Administrative or engineering controls must be instituted to prevent shooters from being exposed to airborne lead levels exceeding acceptable limits. Administrative controls are used either when engineering controls fail to reduce exposure or when range use exceeds HVAC system specifications. Administrative controls are especially applicable to reducing risks on existing ranges.

- (a) Administrative controls used to reduce exposure levels on an indoor range must be rigidly followed and enforced, and compliance must be recorded in a log book for purposes of analysis and reference.
- (b) The following administrative controls are provided and must be used where individuals are frequently exposed to airborne lead.
 - 1 Provide range maintenance personnel with appropriate PPE; e.g., safety glasses and respirators.
 - 2 Provide proper HEPA filter cleaning equipment. The equipment must be able to remove accumulated lead dust from floors, walls, and ledges and must include attachments capable of removing lead-laden sand from the backstop area.
- (c) A ventilation system must be installed that will provide clean air in the user's breathing zone to reduce exposure to potentially dangerous materials to safe levels.
- (d) Adopt administrative controls that monitor and control exposure time for a given user and/or assigned range personnel.

(11) Lighting.

- (a) A visually safe facility should be free of excessive glare and major differences in light levels. Therefore, floors and ceilings should be designed to provide light reflection. In the event of a power outage, battery-powered emergency lighting must be provided for emergency exits.
- (b) Rheostat-controlled lighting fixtures, which can reproduce near-daylight and low-light conditions, are best suited for indoor ranges. Range lighting involves three systems: general lighting, local lighting, and semi-direct lighting.
 - 1 General lighting provides uniform light levels over the entire range area and adjoining areas and is usually installed in a symmetrical arrangement to blend with the architecture.
 - 2 Local lighting supplements general lighting along the firing line to provide better visibility for those tasks associated with the loading and firing of firearms.
 - 3 Semi-direct lighting distribution directs 60 to 90 percent of the lighting on the target with a small upward component to

reflect from the ceiling and walls to soften shadows and generally improve range brightness. When ceilings are white, lighting fixtures mounted too close together create excessive glare.

- (c) Lamp specifications for general lighting must be adjustable to provide 0.2 to 50 foot-candles of luminance measured at a point 7 yards from the target line. Local lighting should produce 0.2 to 60 foot-candles of luminance on the firing line. Semi-direct lighting on the targets should achieve 0.2 to 100 foot-candles of luminance. Glare should be reduced or eliminated by incorporating pastel colors in the interior design.
 - (d) Lighting designs should also seek to balance the color of light emissions. For example, most fluorescent fixtures produce high levels of blue, which alone are not suitable for indoor ranges. If fluorescent fixtures are used, green tubes or other light sources should be installed to balance the colors.
- (12) Plumbing. Plumbing requirements specify that there must be a fresh water supply for personal hygiene and for range cleaning chores. There also must be a waste removal system for normal waste material and material removed from the range. An approved filtration system must be provided for range cleaning waste. Floor drains should be connected to this alternate waste system. Restrooms, showers, and sinks should be connected to a regular sewer system.
- (13) Sound Control. Sound control on indoor ranges includes two distinct components: airborne and structure-borne sound. For airborne sound, all leaks into outer areas should be sealed, which includes airtight insulation around doors, windows, HVAC ducts, walls, and ceilings. Structure-borne sound reduction is necessary to protect adjoining, occupied rooms. Acoustical material should be applied to walls, HVAC ducts, floor, and ceiling areas.
- (14) Range Control. Range control provides rules and supervision that encourage safe and proper use of a range. Safety devices control the physical use of an indoor range and may include warning lights, alarm bells, switch locations, etc. For example, an indoor range with a door in the downrange area should be equipped with an alarm. The door could also be secured by a mortise lock or barred from within but must remain a fire exit. Fire codes generally prohibit bars on doors that would delay escape from a building. Emergency personnel must be able to access the doors. Any door that can be accessed from the outside must be marked with warning devices to indicate when the range is in use. When installing doors on indoor ranges, refer to Life Safety Code National Fire Protection Association (NFPA) 101.

- (15) Target Carriers. Target carriers are used for the convenience of shooters to allow them to continue shooting without delay when target changes are necessary. For health considerations, target carriers keep shooters out of the high lead concentration areas and safely behind the firing line.
- (16) Heaters. Protected heating units should be installed behind and above the firing position to provide a comfort zone for shooters.
- (17) Gun Racks. Gun racks should be mounted behind the firing positions as an additional safety feature to reduce gun handling and to keep the range areas orderly. Appropriate material should be used to construct the gun racks, and the design must correspond to the weapons being used.

6. LIVE FIRE SHOOT HOUSE.

a. Introduction.

- (1) A live fire shoot house (LFSH) is intended for use in advanced tactical training for Security Police Officers. Use of this facility includes individual tactics or Special Response Team force option training. All LFSHs must have an elevated observation control platform (EOCP). The following sections illustrate recognized construction methods for LFSHs. However, they do not eliminate the requirement for sound professional engineering design and validation.
- (2) Administrative controls not directly related to design and construction must be in place during facility use. The administrative controls and engineering design allow for a reduction in physical barriers that prevent rounds from escaping the facility. Designed barriers must prevent a round fired with a vertical upward error of 15° from escaping the facility.

b. Site Selection.

- (1) Site selection for an LFSH is similar to that for any range facility. Terrain features, noise, and availability of utilities and access roads must be considered, as already discussed in previous sections for indoor and outdoor ranges. The LFSH should be placed adjacent to other range facilities whenever possible so that it may utilize the same support facilities, access roads, etc.
- (2) Facility design, target and shooter placement, and other administrative controls minimize the possibility of rounds being fired over the top of the walls and leaving the structure and mitigate the need for an SDZ outside the confines of the LFSH proper.

c. Design and Layout.

- (1) The interior layout of the facility is based on the mission and training requirements of the site. Facility design should incorporate a wide variety of room configurations. Some of the room configurations that should be considered are: multiple floors, an L-shaped room, stairwells, rooms within a room, hallways, and closets.
- (2) The floor plan design should accommodate the movement of target systems, bullet traps, and other equipment into and out of the LFSH.
- (3) Exposure to airborne contaminants for a fully enclosed LFSH must be controlled by adequate ventilation. The lighting requirements are similar to those for indoor ranges.

d. Wall Construction.

- (1) Wall Height. Exterior walls of the LFSH must be designed to absorb the most energetic projectile identified for use within the facility. Wall height must be a minimum of 8 feet. The wall height should allow a maximum error angle of 15° from horizontal standing shooting distance from the target and still enable a projectile to be contained by the wall, which can be described by the following equation: Wall Height is equal to the muzzle height plus 0.27 (tangent 15°) times the target distance. The following table assumes a muzzle height of 5 feet.

<u>Distance from Muzzle to Ballistic Wall (Feet)</u>	<u>Wall Height (Feet)</u>
11' 1"	8' 0"
13' 3"	8' 6"
14' 10"	9' 0"
17' 0"	9' 6"
18' 6"	10' 0"
20' 9"	10' 6"
22' 2"	11' 0"
24' 5"	11' 6"
25' 11"	12' 0"

If the distance from muzzle to ballistic wall exceeds the required wall height, other administrative, engineering or natural ballistic wall controls must be administered or considered such as shooter-to-instructor ratio, canopies, baffles, natural terrain, existing SDZ, standard operating procedures, and training.

- (2) Ballistic Walls. Ballistic interior walls are the preferred method of construction. Where non-ballistic interior walls are used, additional administrative controls must be applied to target placement and team

choreography. Ballistic walls are required in all cases where containment of the round and protection of personnel is paramount.

- (a) Footings. Footings must be designed using the engineering criteria that best ensures structural integrity and stability of wall construction.
- (b) Composite Walls.
 - 1 A combination of ¾-inch exterior grade plywood and steel is effective. Minimum thickness will be ¼-inch mild steel with an exterior-grade plywood separated by a minimum of ¾ inch with a maximum of 1½ inches from the steel surface.
 - 2 Other combinations are possible. The main criterion is that the wall must stop any round fired and contain bullet fragments.
- (3) Non-Ballistic Walls. These walls are constructed of materials that offer no protection to personnel or equipment in adjoining rooms. Material used for these walls must not contribute to or enhance ricochet or splatter. Additional administrative controls must be applied such as target placement and team choreography.
- e. Doors. All doors must be constructed of wood with no glass. Additionally, at least a portion of the rooms must have working doors, some opening inward, some opening outward, and doors opening left and right.

NOTE: All devices in the LFSH, such as brackets and hangers, used to secure walls to floors or secure doors must be covered or protected to mitigate any tripping or ricochet hazards.

- f. Ceiling or Roofs. Ceilings or roofs can be of value when the shoot house is required for year-round use in areas with severe weather conditions. Exposure to airborne contaminants must be controlled by adequate ventilation. The lighting requirements for fully enclosed shoot houses are similar to those for indoor ranges. When training exercises require target placement above the wall design, the ceiling or roof must be protected unless firing into an approved SDZ.
- g. Floors.
 - (1) Floor construction must be selected for its ability to absorb direct fire, minimize ricochets, and provide a walking surface free of slipping/tripping hazards. Floors should provide the same ricochet protection as walls. Options include:

- (a) exterior-grade plywood floor constructed in accordance with American Plywood Association guidelines over smooth finished concrete;
 - (b) concrete with brushed surface that minimizes slip and tripping hazards;
 - (c) asphalt;
 - (d) exterior-grade plywood;
 - (e) shredded bias-ply tires; and
 - (f) earth, free of rocks and debris that could cause ricochet.
 - (2) Construction joints between walls and floors must be designed to contain projectiles within the LFSH.
- h. Bullet Traps.
 - (1) General Information.
 - (a) Targets used in LFSHs must be placed so that fire is directed into a bullet trap designed to capture the rounds.
 - (b) Bullet traps must be constructed to contain the most energetic projectile to be fired into them without dimpling/pitting the steel and contain splatter and fragments in all directions. The size and shape of a bullet trap may be altered, but materials may not be substituted.
 - (2) Specifications for construction. See “Use of Bullet Traps and Steel Targets” for Shoot House bullet trap information.
- i. Elevated Observation Control Platform (EOCP).
 - (1) EOCPs enhance the ability to observe and control LFSH operations. Administrative controls must be considered when constructing the EOCP. Platform construction and location is based on the training to be conducted. EOCPs must be constructed in accordance with all applicable regulations for elevated work platforms.
 - (2) EOCPs must be constructed to:
 - (a) maximize instructors’ observation and control of the entry team fire and movement;

- (b) facilitate communication between instructors on the EOCP and the floor;
- (c) position the lowest point of the horizontal walking surface higher than the 15° vertical error for any target engaged;
- (d) provide ready access;
- (e) integrate instructors' movement with team flow;
- (f) maximize instructors' ability to see shooters clearly at all times;
and
- (g) have supporting structures placed so that they pose no additional hazards such as tripping, ricochet, splatter, etc.

ATTACHMENT 1 -- RANGE DESIGN FIGURES

- Figure 1. Surface Danger Zone for Small Arms Firing at Fixed Ground Targets
- Figure 2. SDZ for Small Arms Weapons Firing at Moving Ground Targets
- Figure 3. SDZ for Small Arms Firing at Fixed Ground Targets with Rocky Soil or Targets Causing Ricochet
- Figure 4. SDZ for Firing M79, M203, and M19 40mm Grenade Launchers
- Figure 5. SDZ with Impact Berm for Small Arms Firing at Fixed Ground Targets
- Figure 6. Open Range with Impact Berm and Side Protection SDZ for Small Arms Firing at Fixed Ground Targets
- Figure 7. SDZ for Partially Baffled Range (Small Arms Firing at Fixed Ground Targets)
- Figure 8. SDZ for Fully Baffled Range (Small Arms Firing at Fixed Ground Targets)
- Figure 9. Ballistic Overhead Canopy
- Figure 10. Outdoor Rifle Range Layout
- Figure 11. Pistol Range Layout
- Figure 12. Ballistic Material
- Figure 13. Ballistic Protection of Target Mechanism
- Figure 14. Impact Berm for Open and Partially Baffled Ranges
- Figure 15. Outdoor Baffled Bullet Stop
- Figure 16. Baffled Range Profile
- Figure 17. Baffled System Geometry
- Figure 18. Overhead Baffle Ballistic Designs
- Figure 19. Parallel Ranges

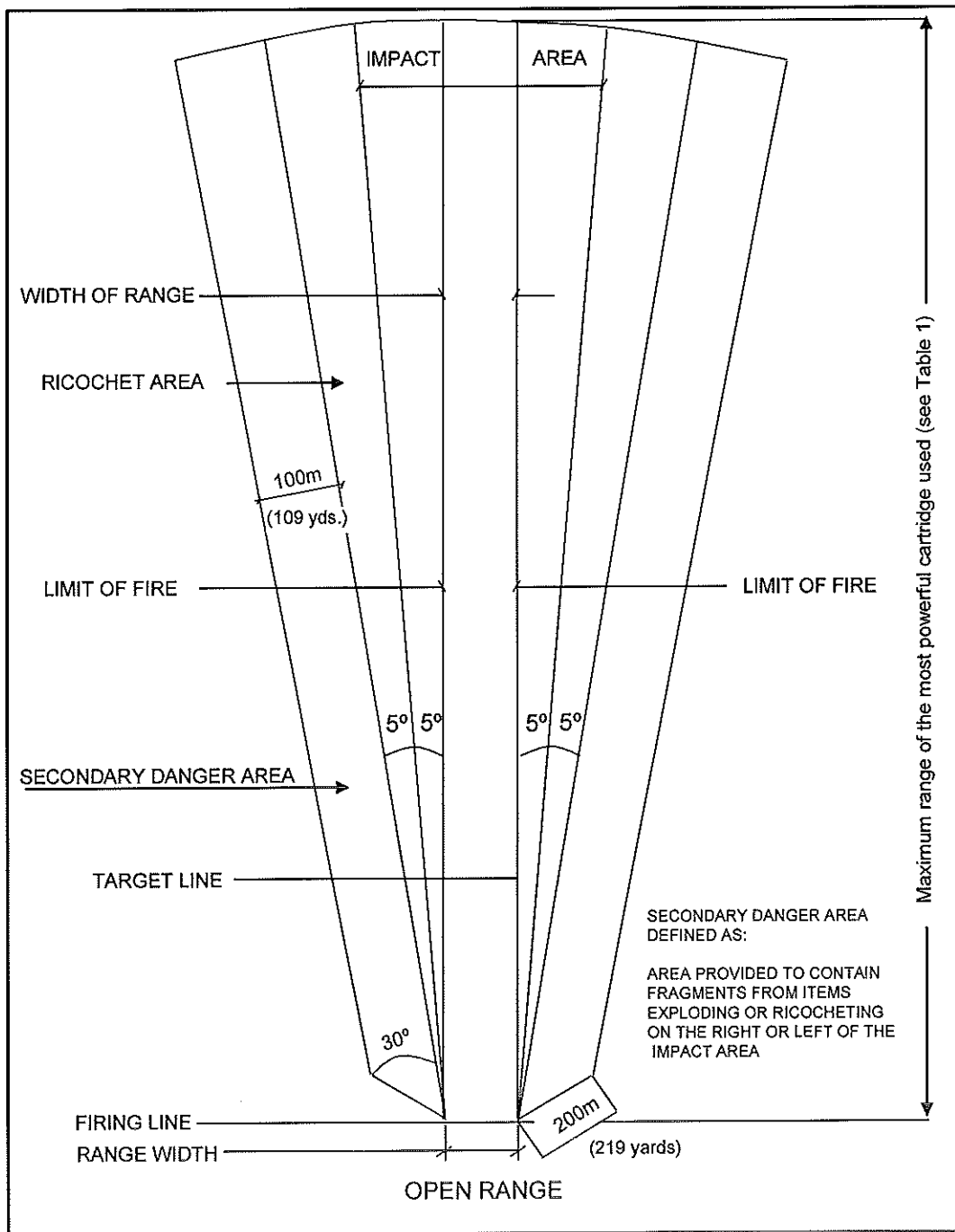


Figure 1
Surface Danger Zone for Small Arms
Firing at Fixed Ground Targets

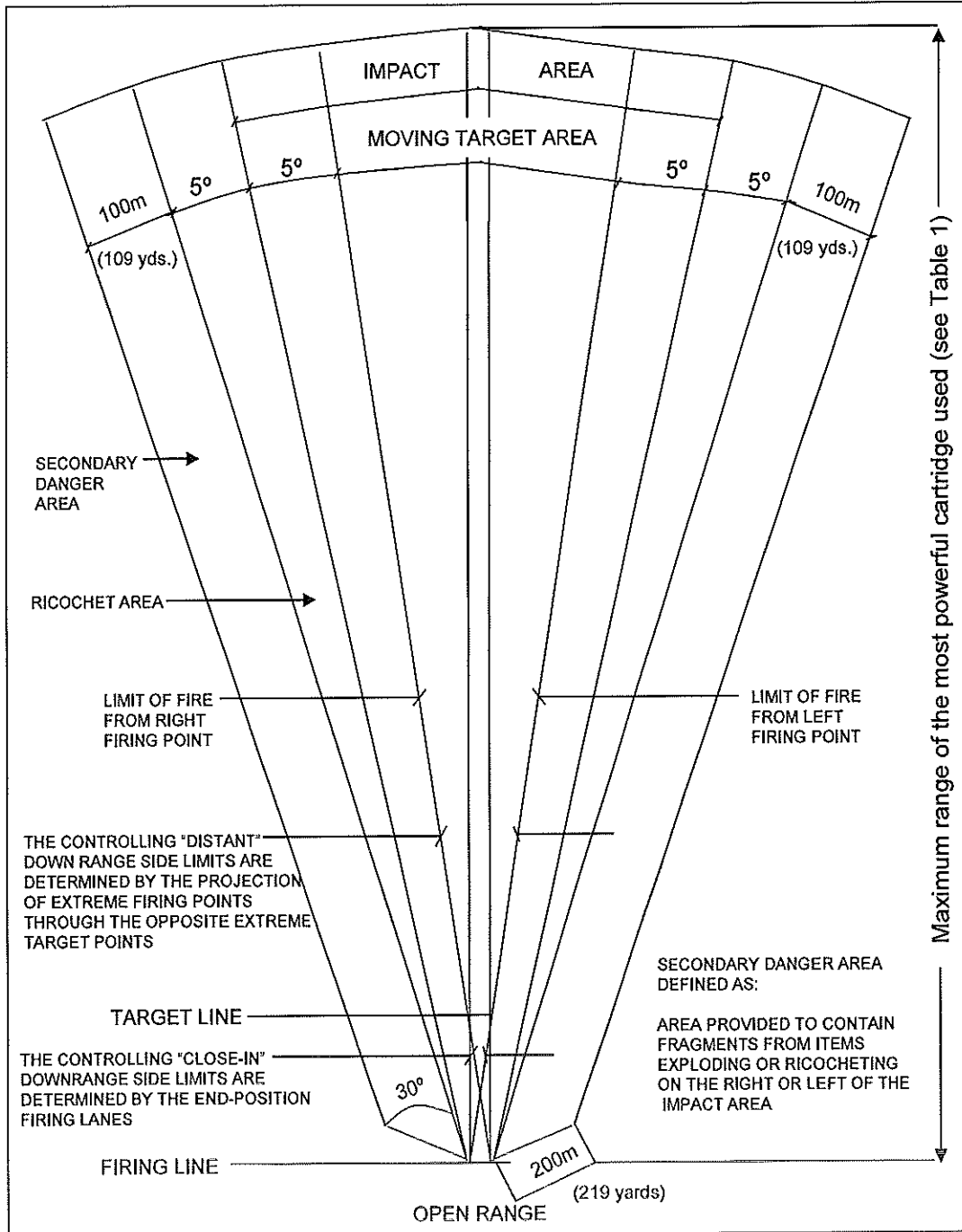


Figure 2
Surface Danger Zone for Small Arms Weapons
Firing at Moving Ground Targets

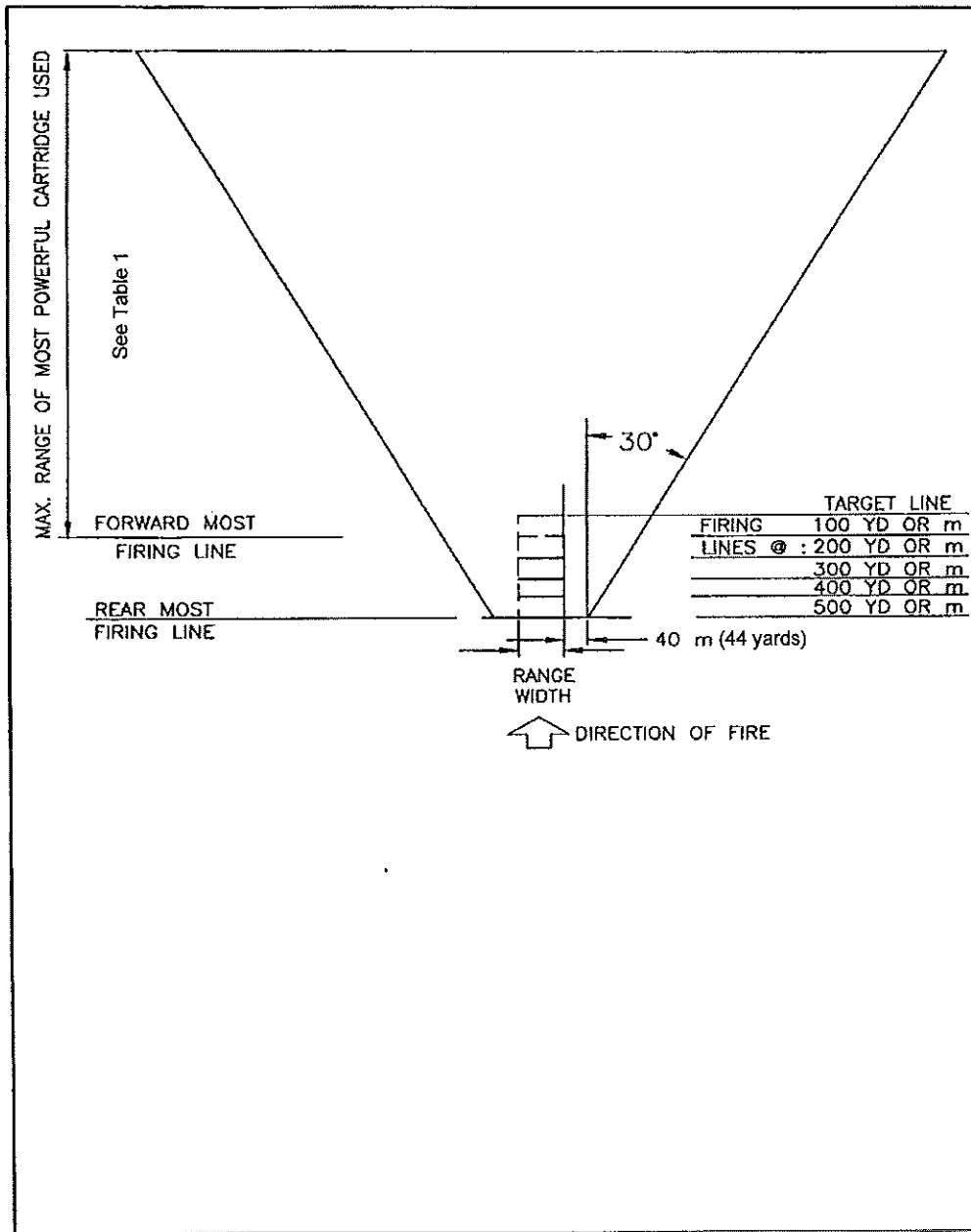


Figure 3
Surface Danger Zone for Small Arms Firing
At Fixed Ground Targets with Rocky Soil
Or Targets Causing Ricochet

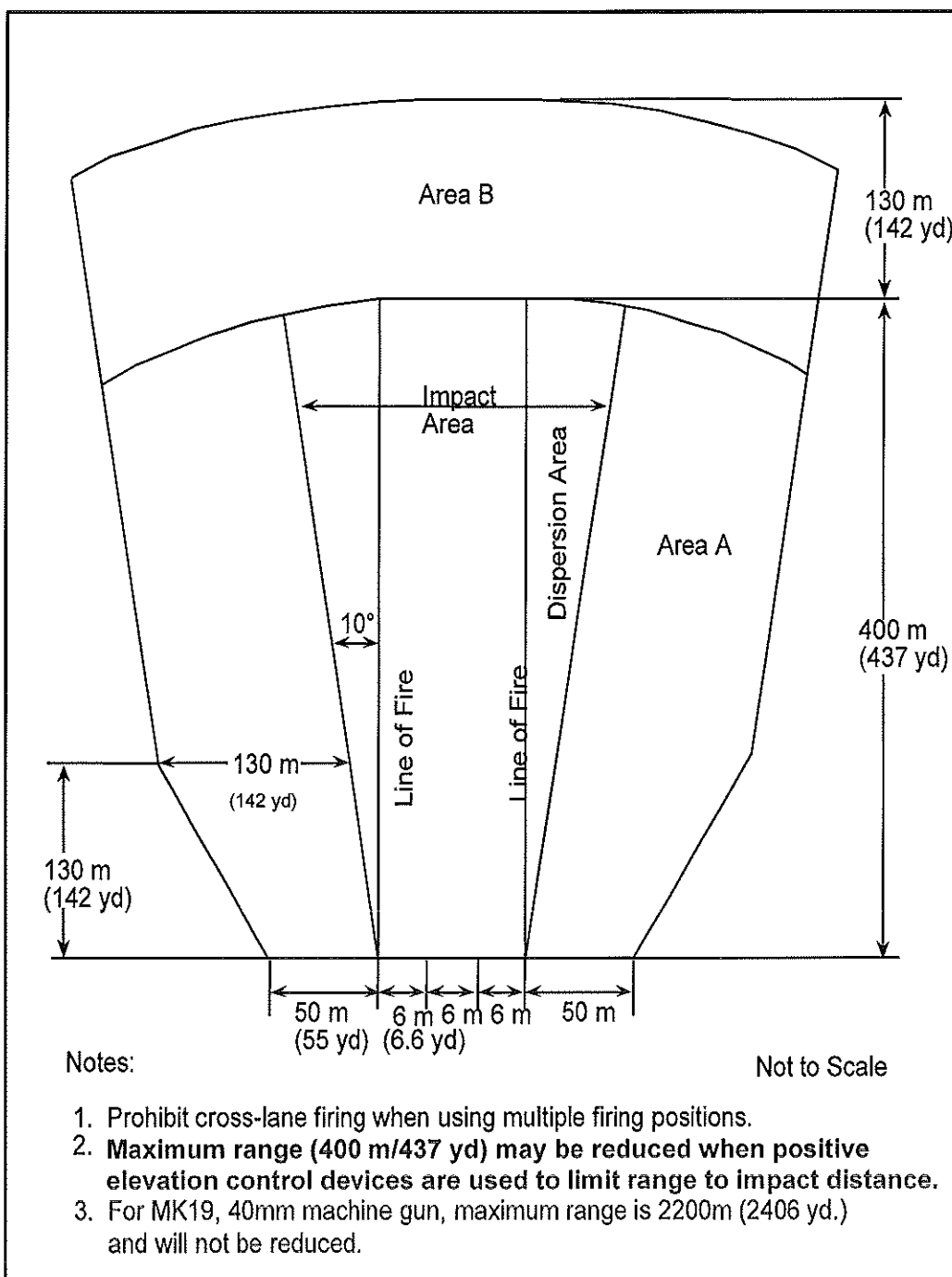


Figure 4
Surface Danger Zone for Firing
M79, M203, and M19 40mm Grenade Launchers

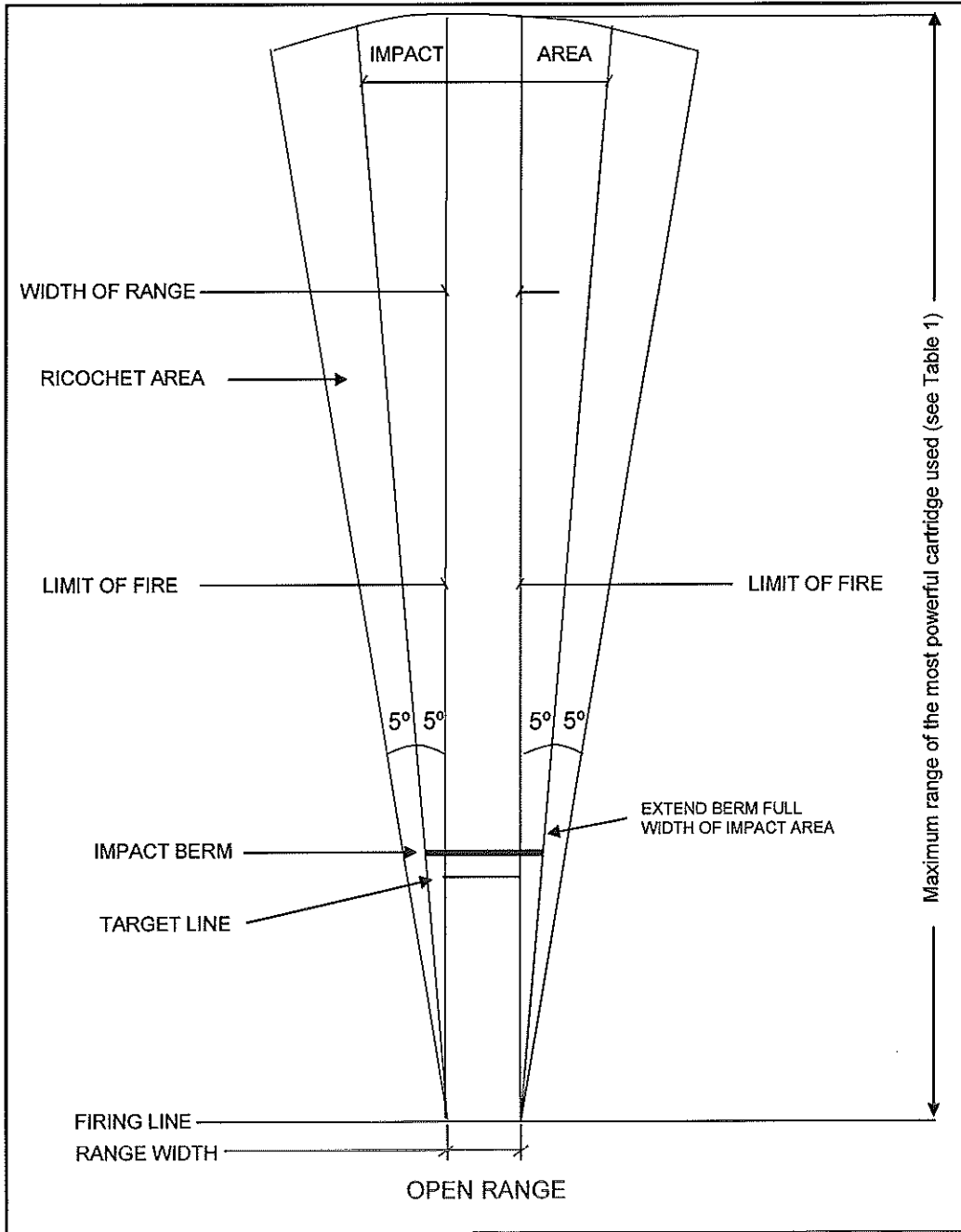


Figure 5
Surface Danger Zone with Impact Berm
for Small Arms Firing at Fixed Ground Targets

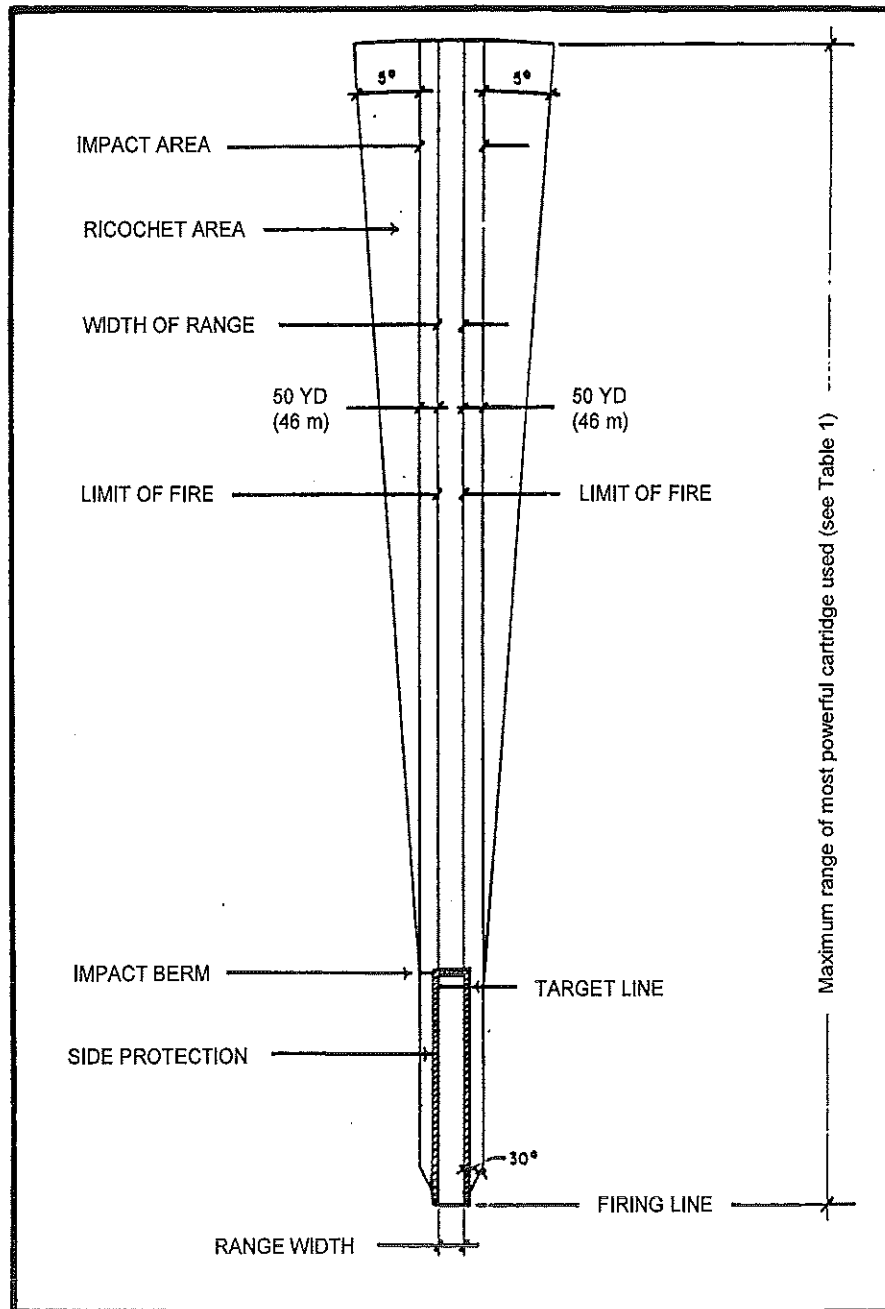


Figure 6

Open Range with Impact Berm and Side
Protection Surface Danger Zone for Small Arms
Firing at Fixed Ground Targets

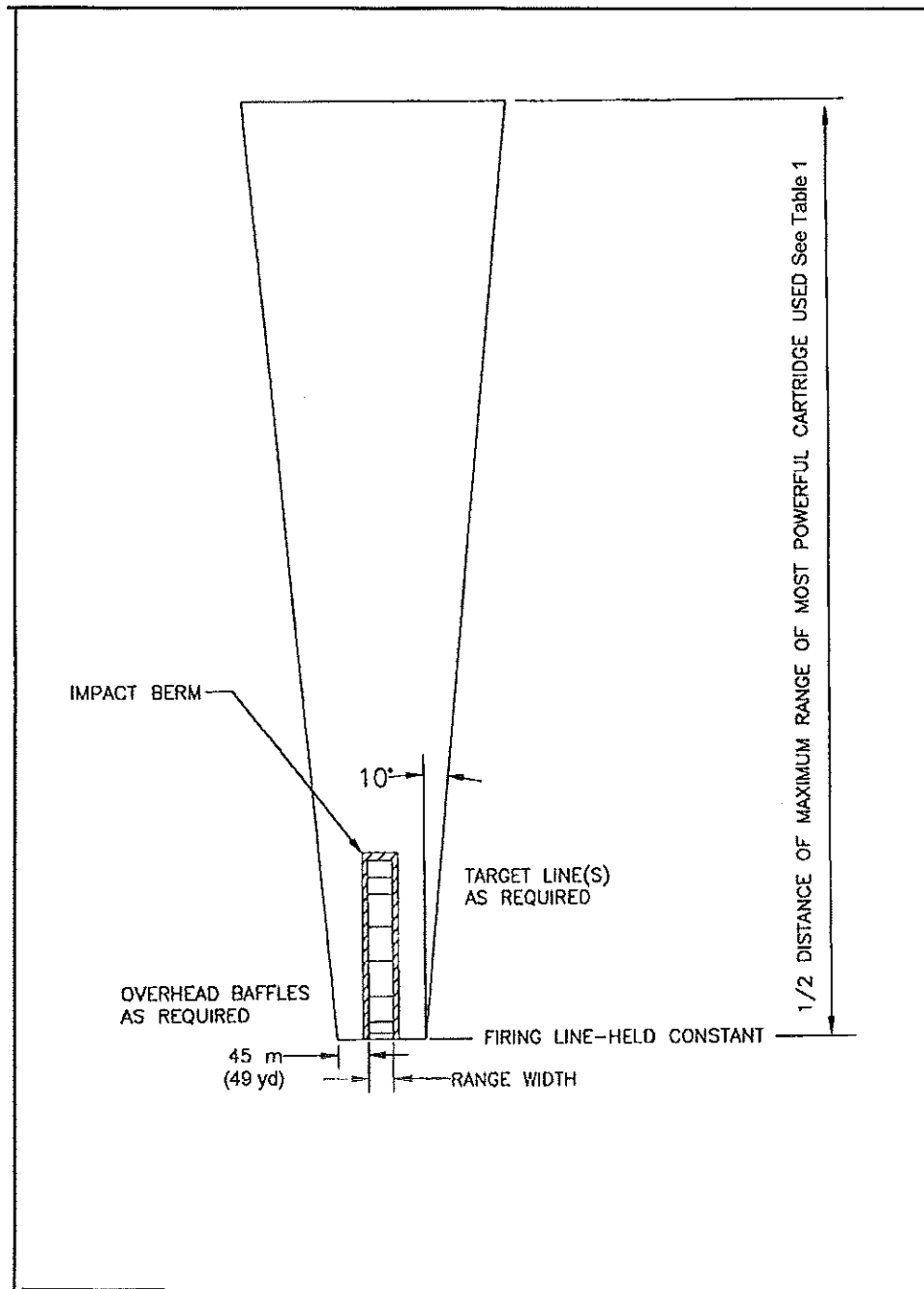


Figure 7
Surface Danger Zone for Partially Baffled Range
(Small Arms Firing at Fixed Ground Targets)

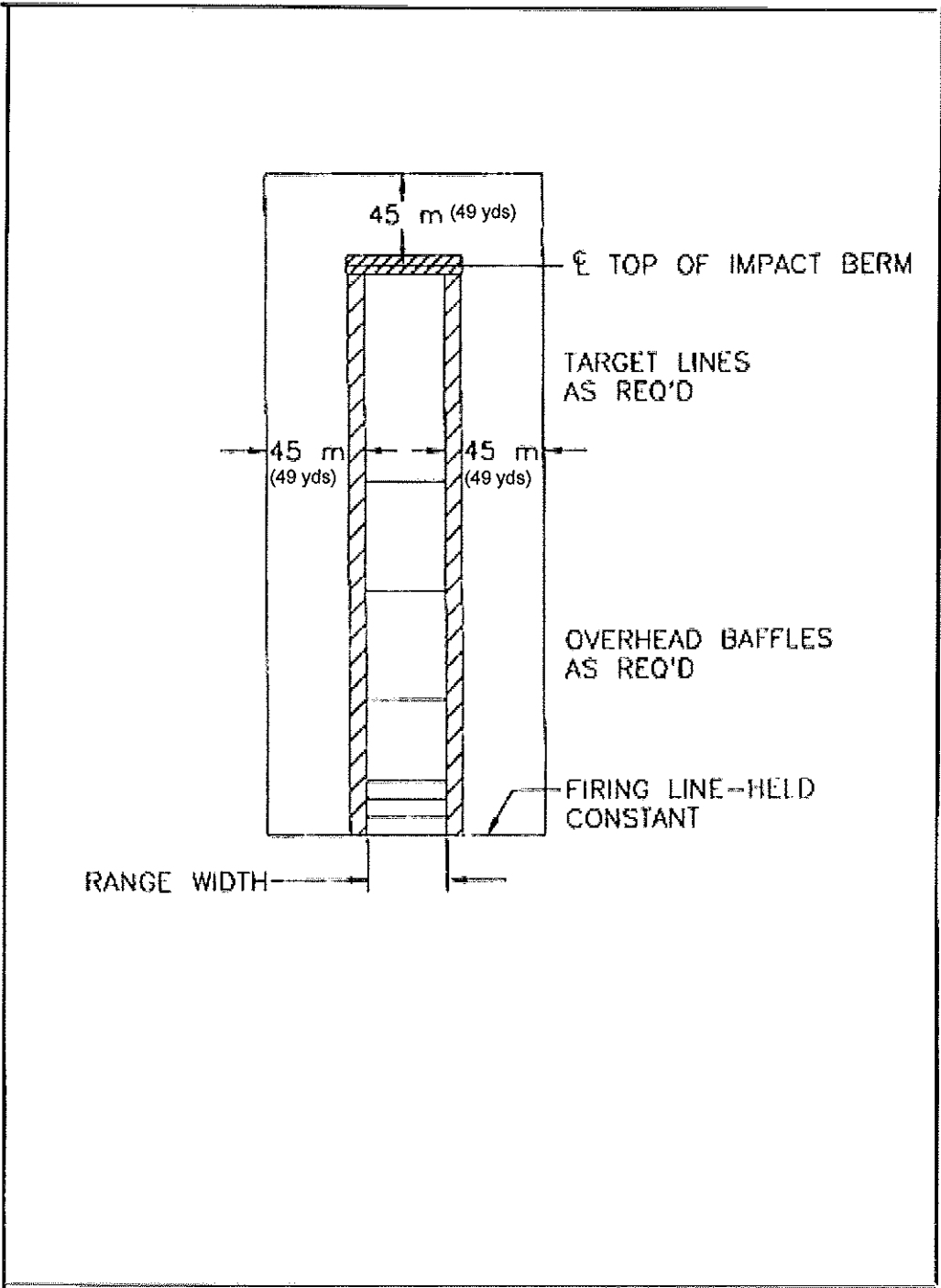


Figure 8
Surface Danger Zone for Fully Baffled Range
(Small Arms Firing at Fixed Ground Targets)

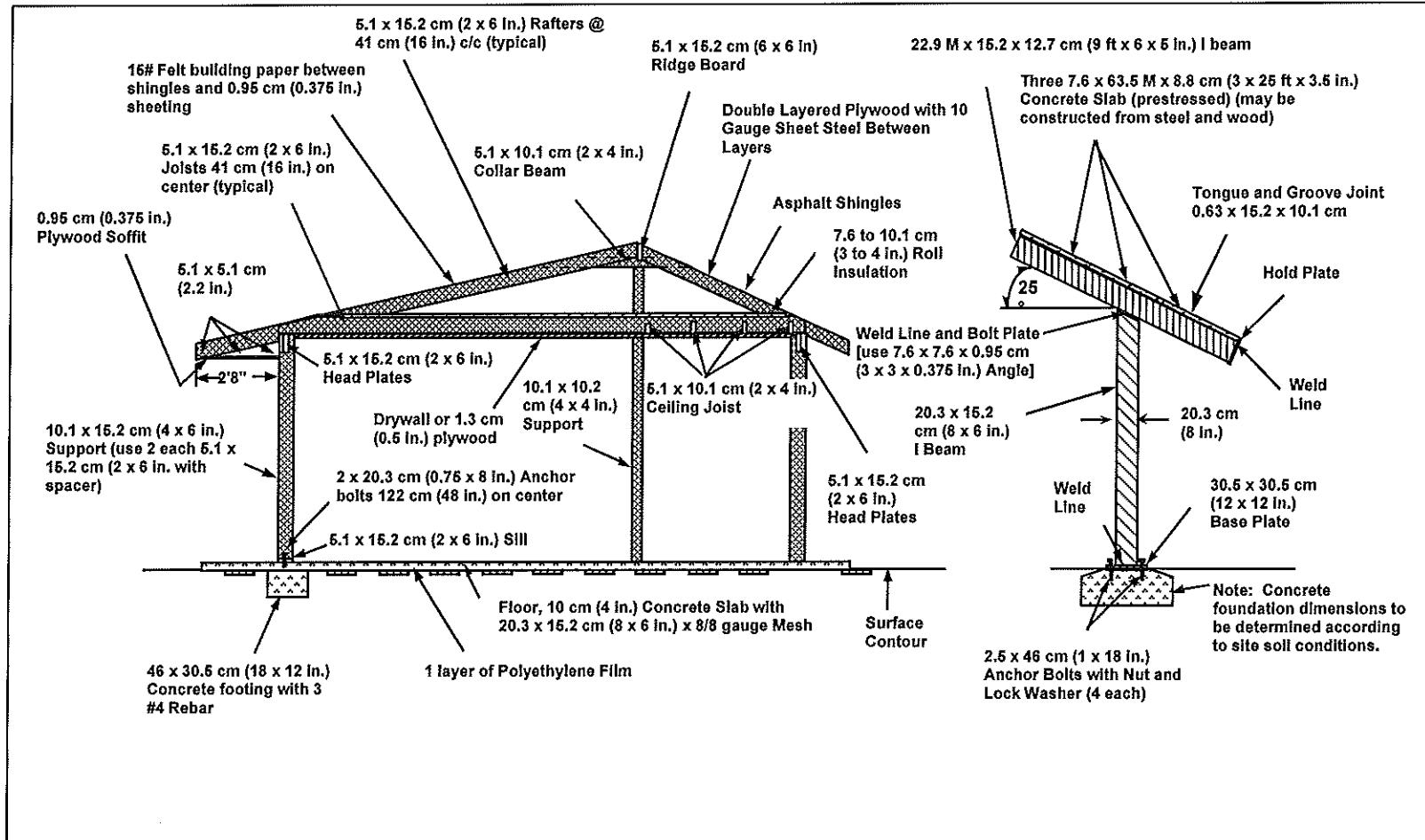


Figure 9
Ballistic Overhead Canopy

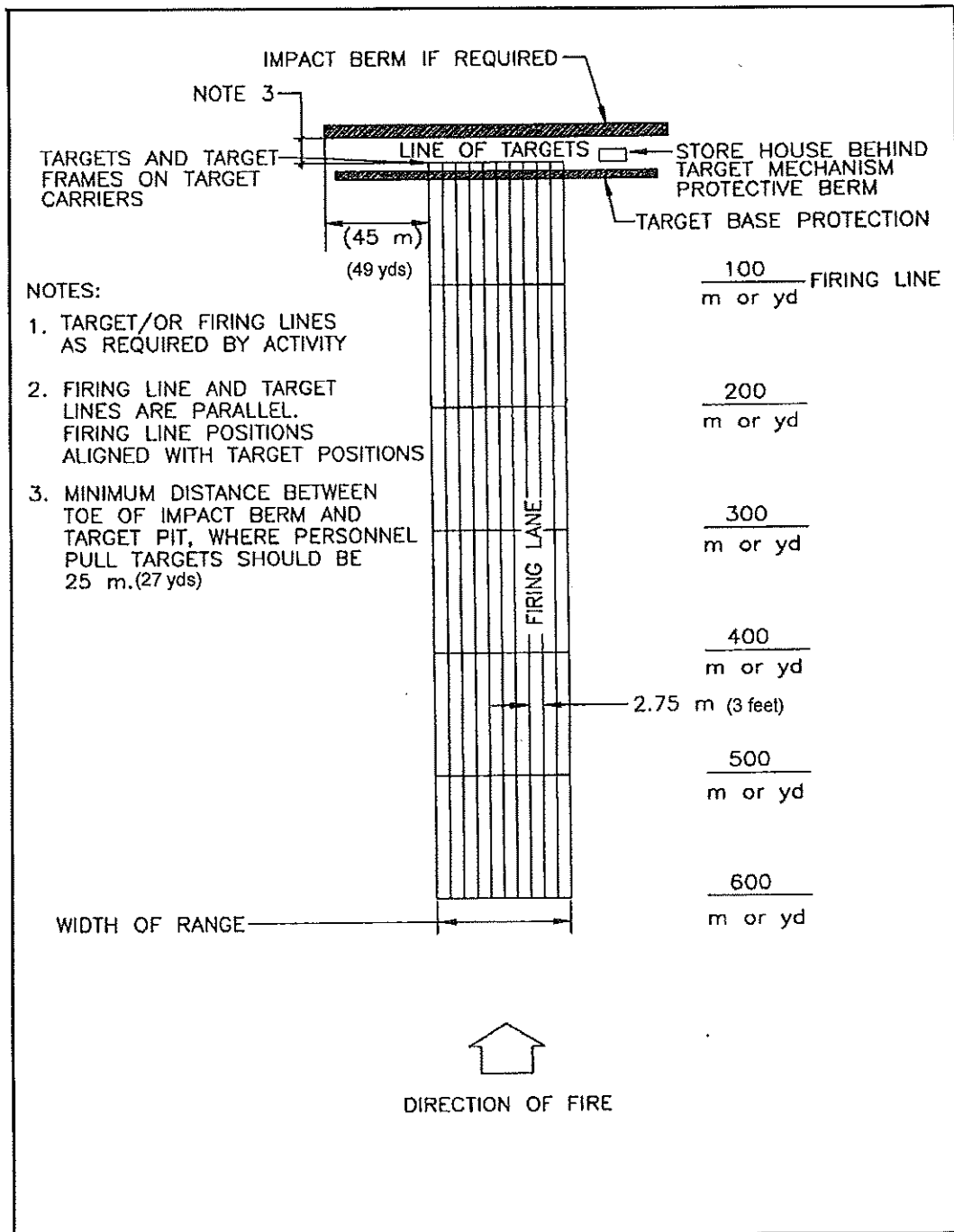


Figure 10
Outdoor Rifle Range Layout

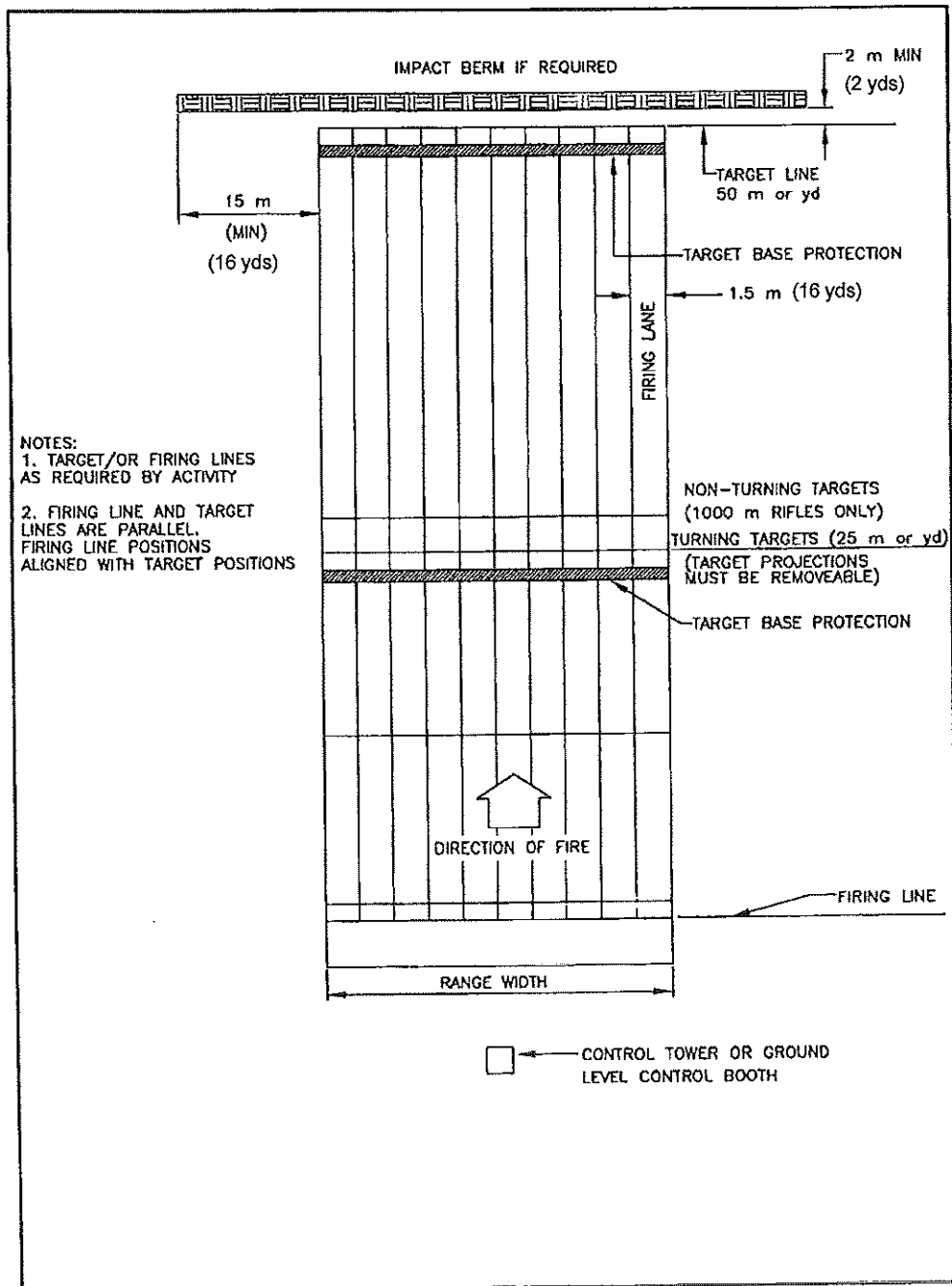


Figure 11
Pistol Range Layout

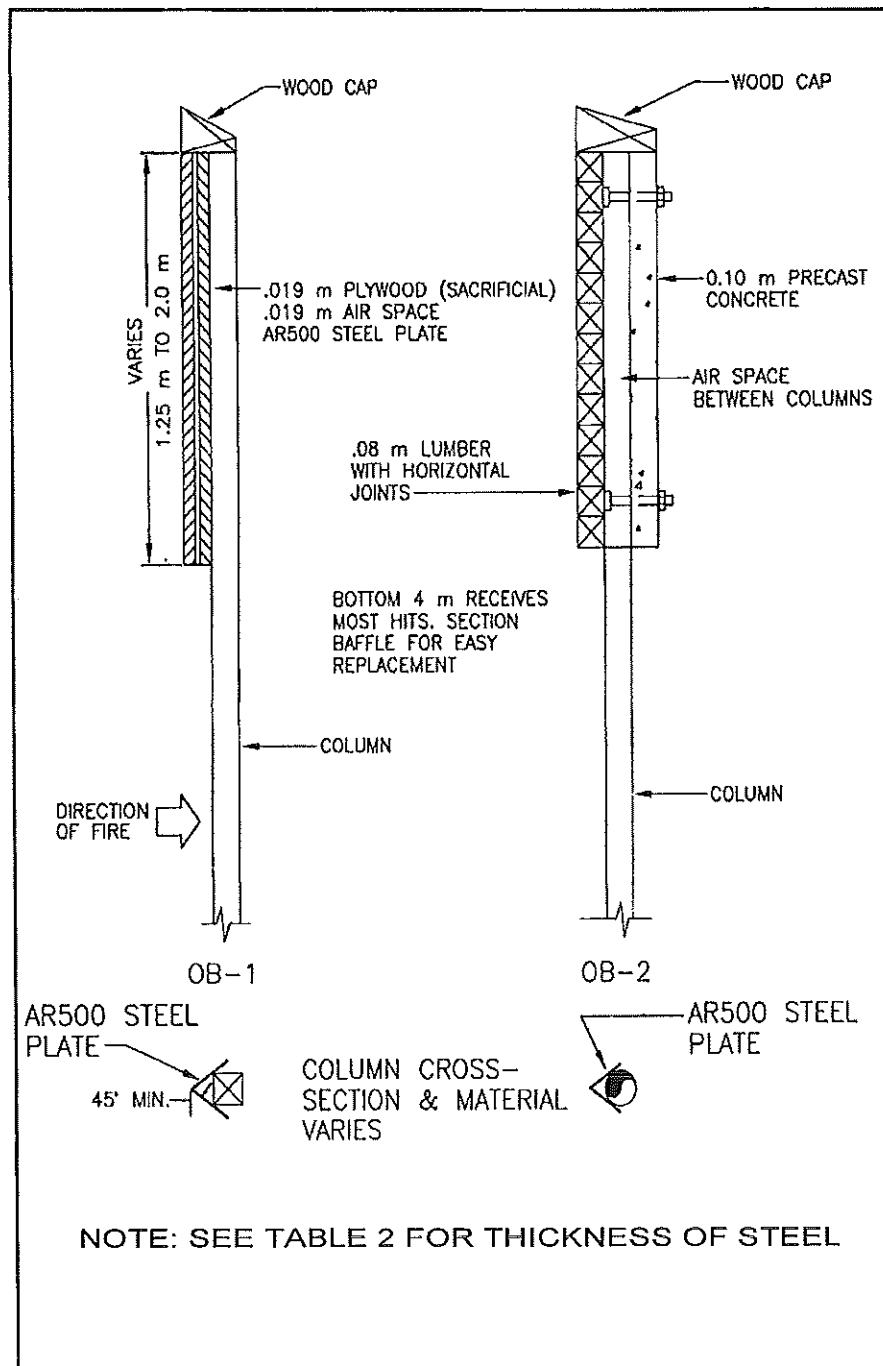


Figure 12
Ballistic Material

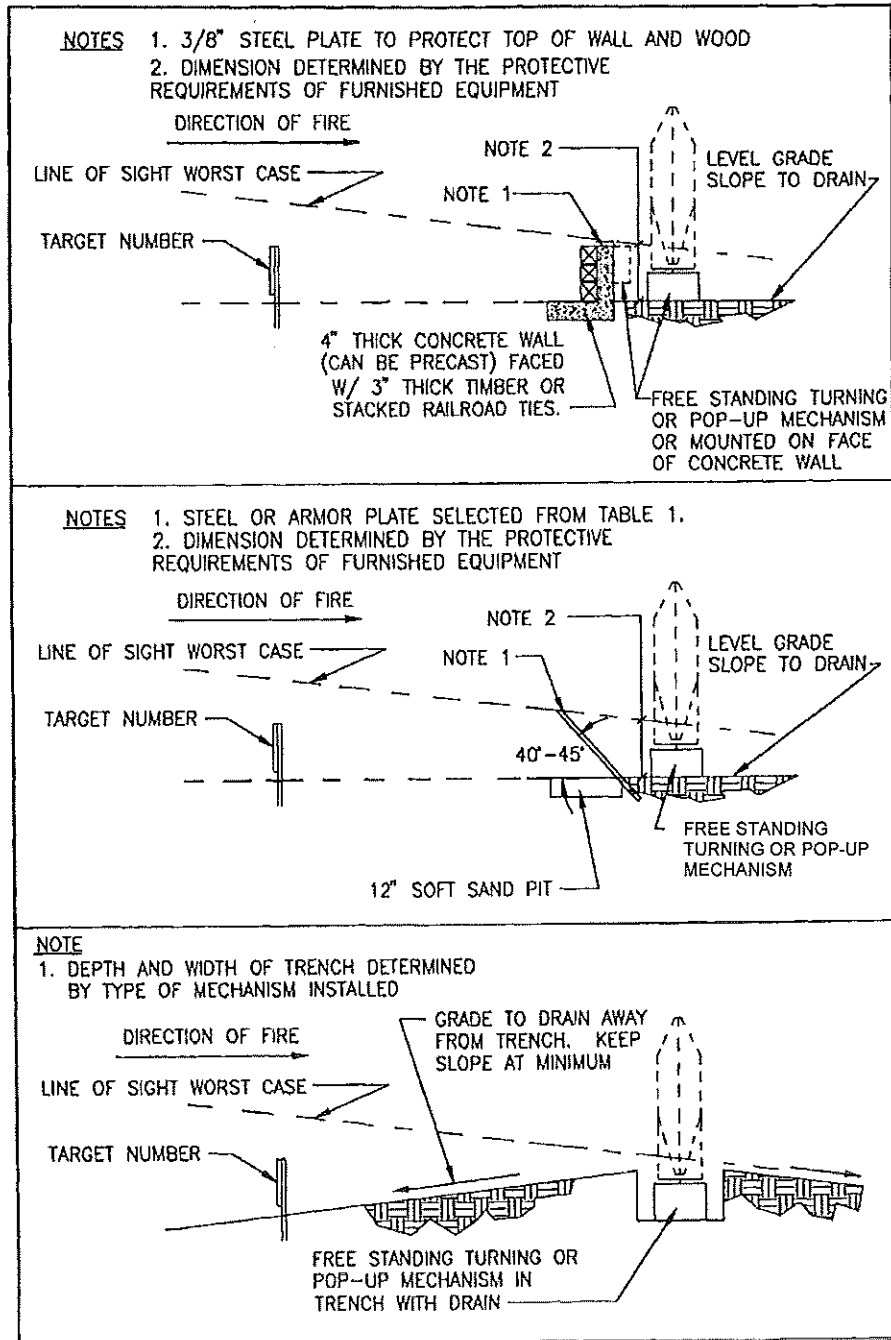


Figure 13
Ballistic Protection of Target Mechanism

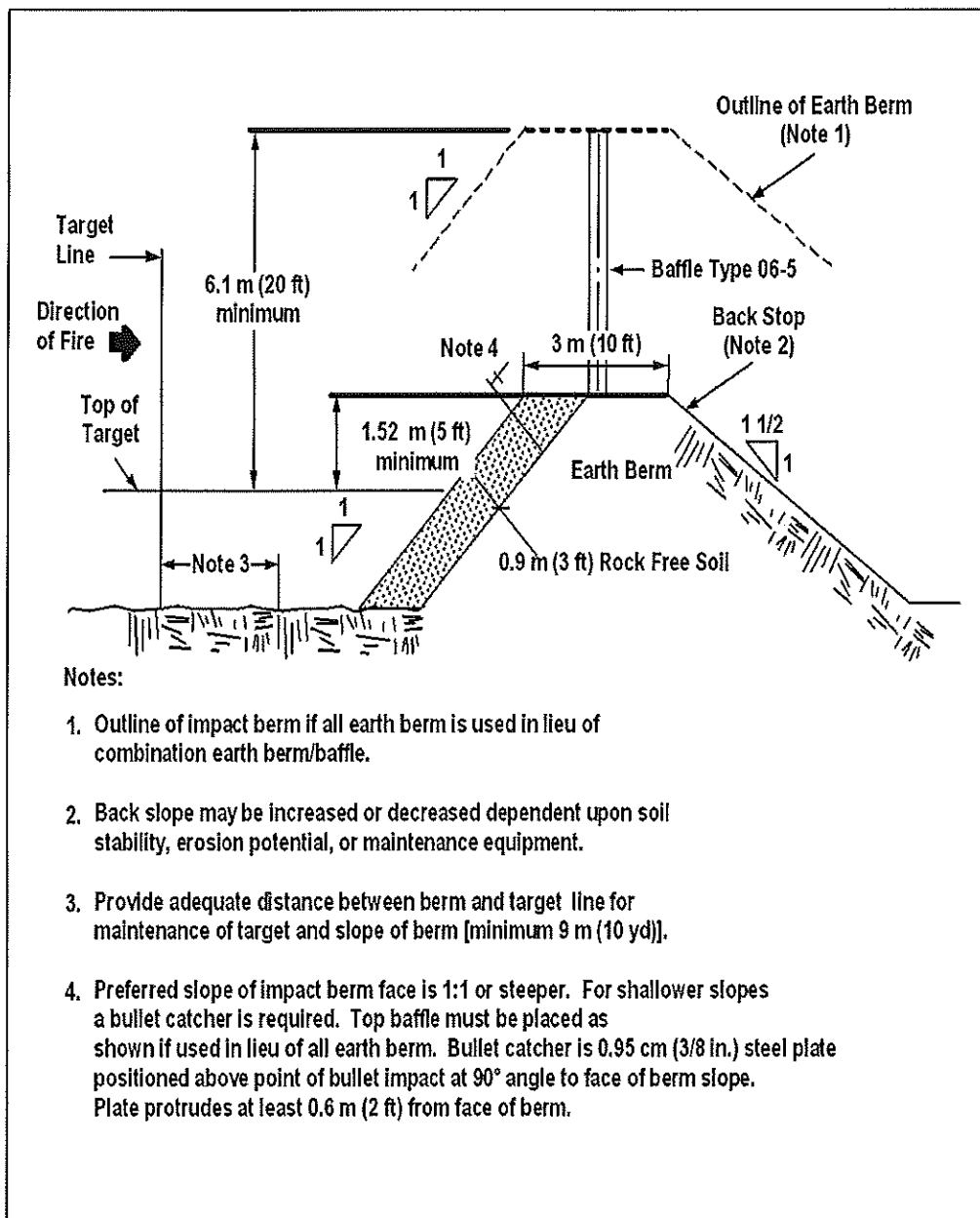


Figure 14
Impact Berm for Open and
Partially Baffled Ranges

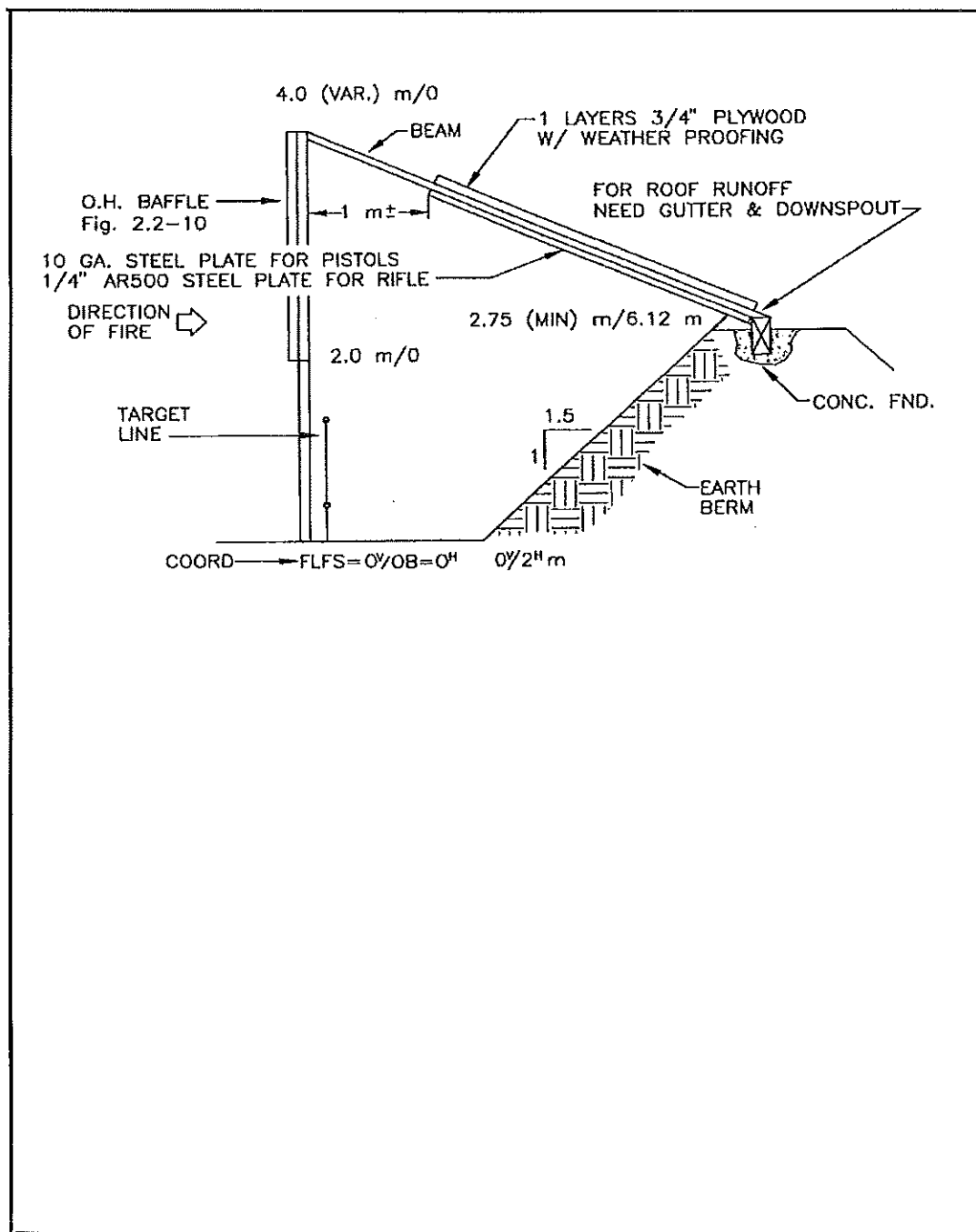
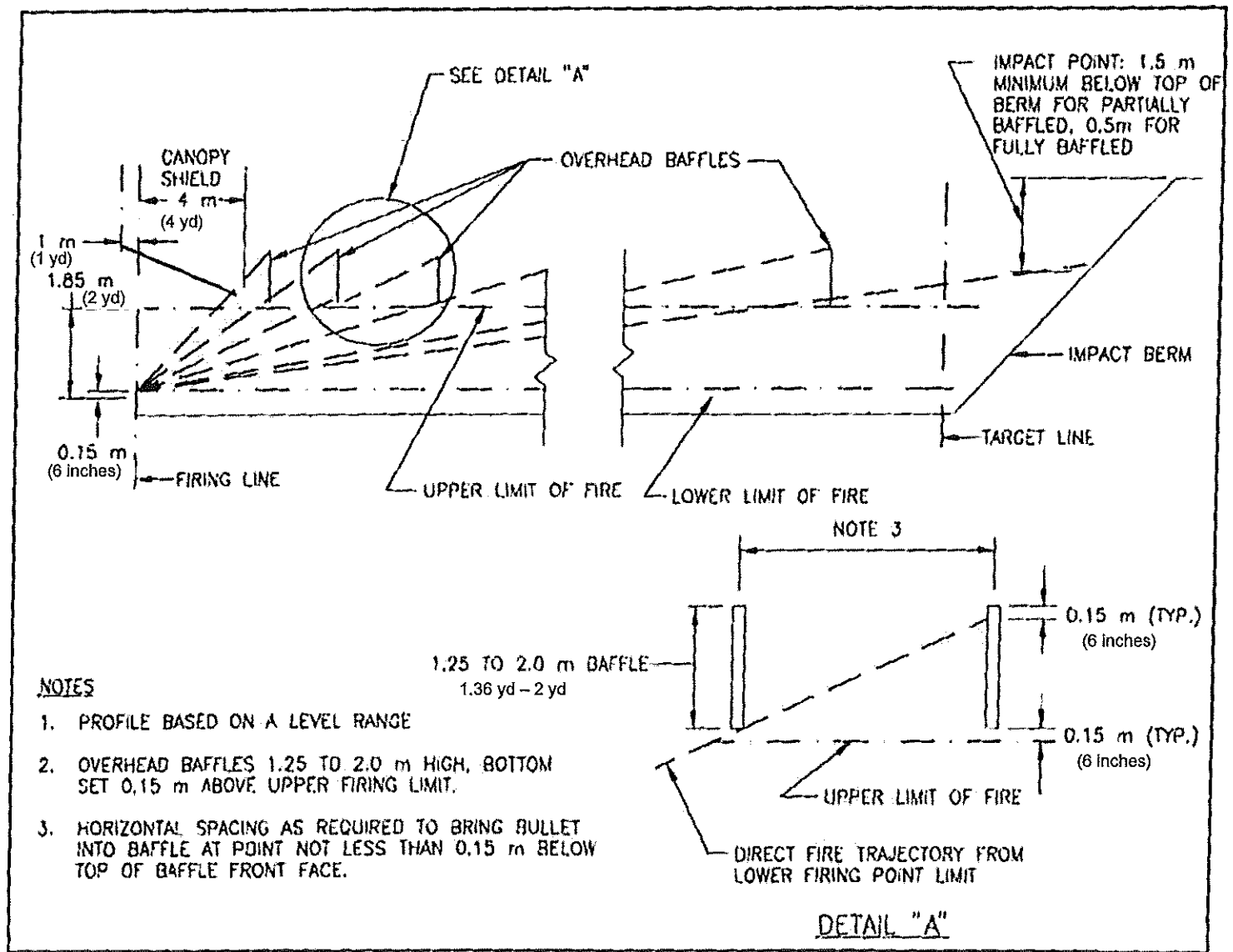


Figure 15
Outdoor Baffled Bullet Stop

Figure 16
Baffled Range Profile



NOTES

1. PROFILE BASED ON A LEVEL RANGE
2. OVERHEAD BAFFLES 1.25 TO 2.0 m HIGH, BOTTOM SET 0.15 m ABOVE UPPER FIRING LIMIT.
3. HORIZONTAL SPACING AS REQUIRED TO BRING BULLET INTO BAFFLE AT POINT NOT LESS THAN 0.15 m BELOW TOP OF BAFFLE FRONT FACE.

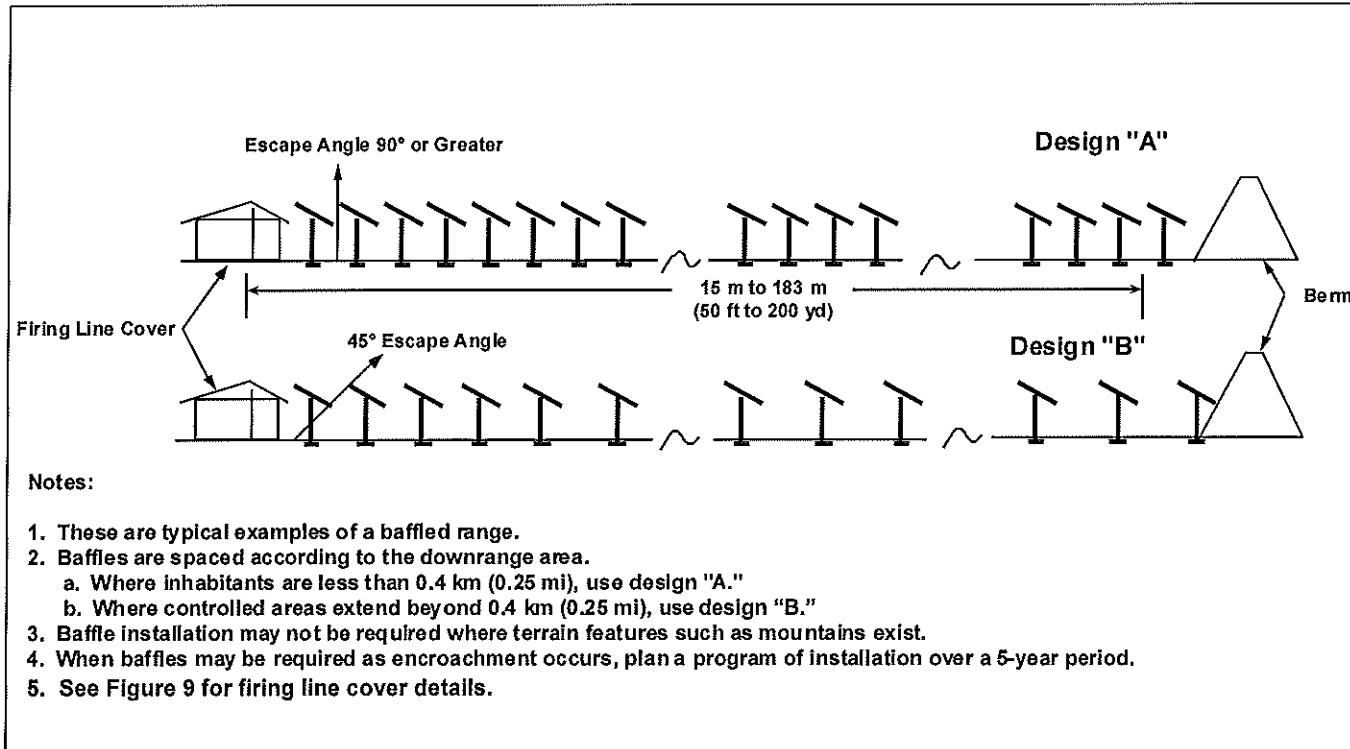


Figure 17
Baffle System Geometry

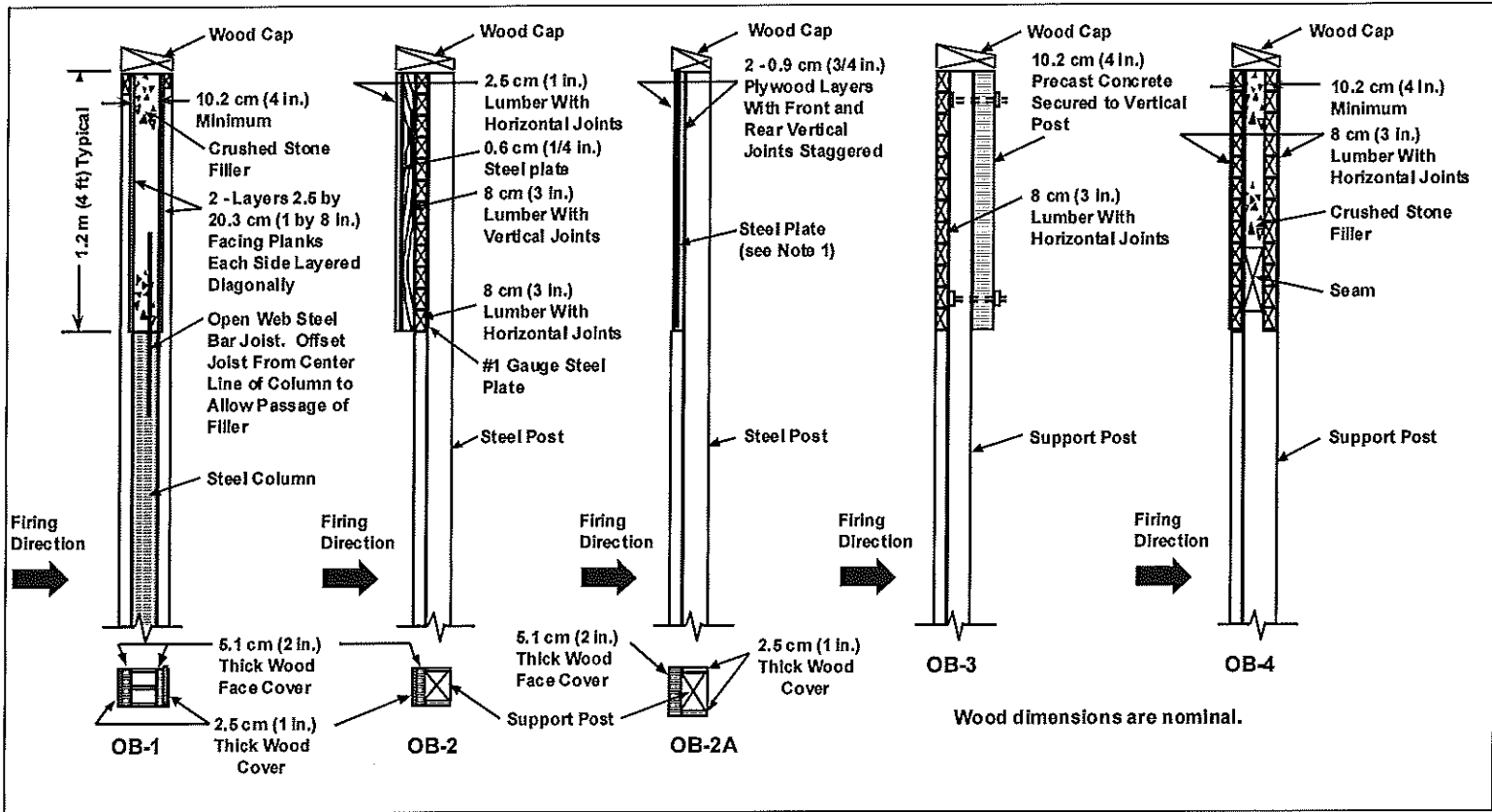


Figure 18
Overhead Baffle Ballistic Designs

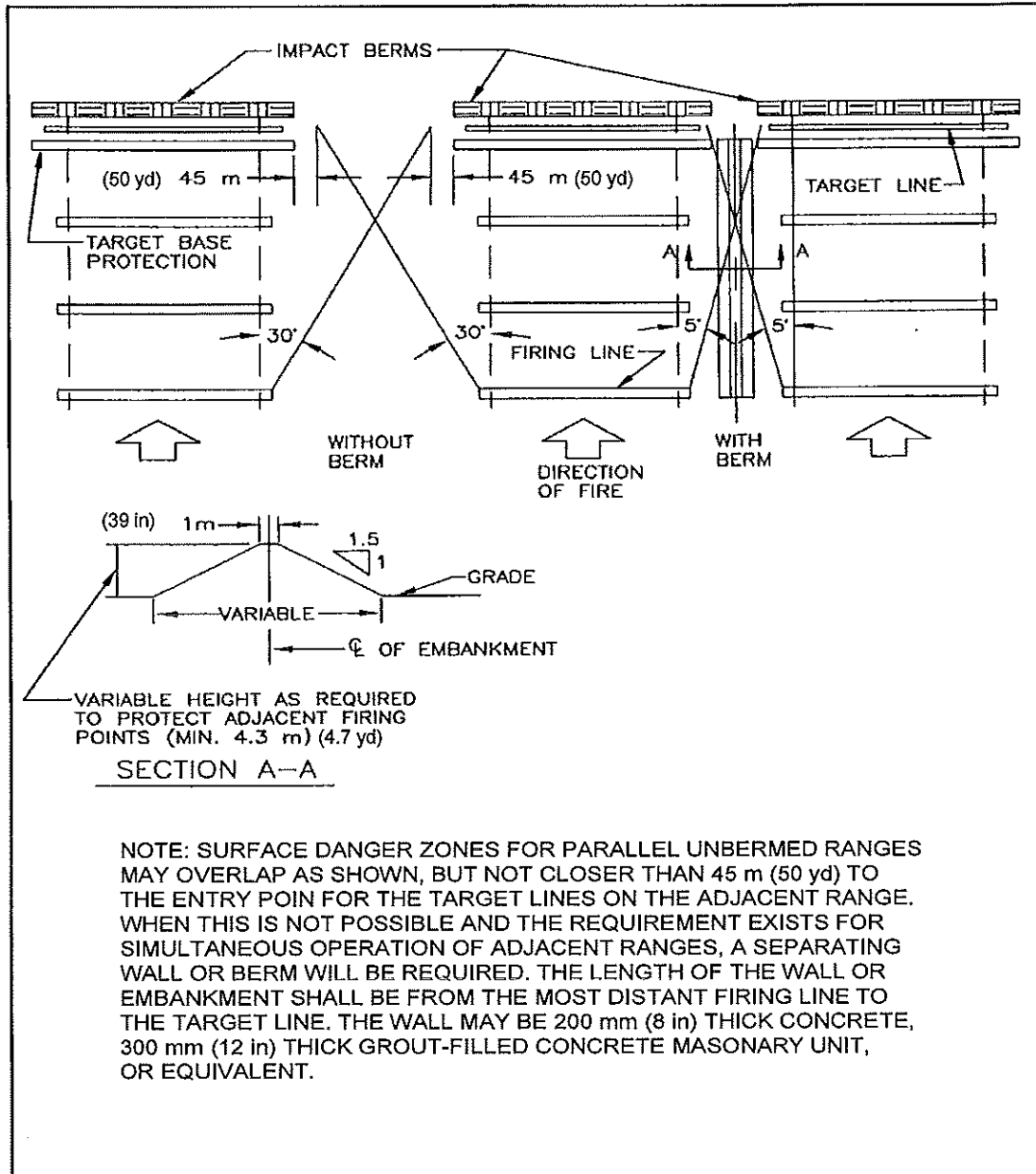


Figure 19
Parallel Ranges

Known Existing Outdoor Firing Ranges as of May 2, 2013

1. Cross Creek Rifle & Pistol Club, Inc. (Grays Creek)	3233 Blossom Rd	38.99 +/- acs	RR
2. Wagram Sportsmans' Association Inc	9540 Giles Rd	48 +/- acs	A1
3. TigerSwan	Tiger Swan Dr	997 +/- acs	A1
4. Godwin Range (Linden)	10594 Ramsey St	45.50 +/- acs	A1
5. Cumberland Co Wildlife Club	Mellwood Dr	7.23 +/- acs	R6A
6. Jimmy Pugh	off Turnbull Rd	(portion) 110 +/- acs	A1
7. Stanley Range	Johnson Rd	135.9 +/- acs	A1
8. Edward's Firearm Training	6678 Clinton Rd	10.57 +/- acs	C(P)
9. McCormick Farms (hunt club)	McCormick Bridge Rd	2,150 +/- acs	RR/CD
10. Sanders Range	1986 Dobbin Holmes Rd	17.91 +/- acs	A1
11. Jim's Outdoor Range	3549 Gabe Smith Rd	119.32 +/- acs	A1
12. Cainland Acres Property (pending approval)	8098 Saplin Dr	3.81 +/- acs	A1
13. Kirby Range	3802 Pleasant View Dr	34.68 +/- acs	RR
14. McCormick Farms	Slocomb Rd (near McBryde St)	1,775 +/- acs	RR (pt. A1, PND, CD)
15. Ricky Chavis	5525 & 5563 Matt Hair Rd	6.4 +/- acs	A1
16. Rockfish Bowhunters Archery Club	3001 George Owen Rd	(portion of) 25.82 +/- acs	RR

Outdoor Firing Range Regulations – Comparison by County

COUNTY	ZONING DISTRICT	ZONING MIN LOT SIZE	TYPE OF APPROVAL REQUIRED
Bladen**	RA Residential Agricultural	10,000 sq ft w/ w&s 25,000 sq ft w/ w 30,000 sq ft no utilities	SUP by Planning Board w/ Ord Conditions
Harnett**	RA-20M & RA-20R Residential/Agricultural	20,000 sq ft	CU by BOA w/Ord Conditions
	RA-30 Residential Agricultural	30,000	CU by BOA w/Ord Conditions
	RA-40 Residential Agricultural	40,000	CU by BOA w/Ord Conditions
	O&I Office & Institutional	n/a	CU by BOA w/Ord Conditions
	COMM Commercial/Business	10 ac	CU by BOA w/Ord Conditions
	LI Light Industrial	10 ac	CU by BOA w/Ord Conditions
	IND Industrial	10 ac	CU by BOA w/Ord Conditions
Iredell UDO**	AC Agricultural Conservation	87,120 sq ft (2 acres)	SUP by BOA w/ Ord Conditions
	R-A Residential Agricultural	20,000 sq ft	SUP by BOA w/ Ord Conditions
	RUR Rural Residential	30,000 sq ft	SUP by BOA w/ Ord Conditions
	M-1 Light Manufacturing	n/a	Staff Review w/ Ord Conditions
New Hanover	I2 Industrial	n/a	SUP by BOC w/ PB rec – Ord conditions apply
	AI Airport Industrial	43560 sq ft	SUP by BOC w/ PB rec – Ord conditions apply
Onslow	RA Residential Agricultural*	20,000 sq ft	SUP by BOA w/ compliance of separate chapter in County Code
	HB Highway Business	n/a	Same as above
	Conservation	n/a	Same as above
Sampson	RA Residential Agricultural*	10,000 sq ft w/ w&s 25,000 sq ft w/ w 30,000 sq ft no utilities	SUP to Planning Board w/ Ord Conditions
	C Commercial	40,000 sq ft	SUP to Planning Board w/ Ord Conditions
Wake**	R-80W, R40W, & R80-R5	80,000 to 5,000 sq ft	SUP by BOA
	HD	n/a	SUP by BOA
	RHC - Activity Center	n/a	SUP by BOA
	RHC - Res Support Area	n/a	SUP by BOA
	RHC - Outside RSA	n/a	SUP by BOA
	GB	n/a	SUP by BOA
	HC	n/a	Permitted use
Yadkin**	RA, MI-1, MI-2	No minimum size; 3,000' separation for protected uses; up to 8' high buffer; 20' high backstop	CUP by BOA

*Only agricultural zoning district in jurisdiction

** No solely agricultural zoning district in jurisdiction