

**REQUEST FOR COMMITTEE ACTION**

**HENDERSON COUNTY**

**TECHNICAL REVIEW COMMITTEE**

**MEETING: June 17, 2014**

**SUBJECT: Major Site Plan Review Kiln Drying Systems**

**PRESENTER: Toby Linville**

**ATTACHMENTS: Staff Report**

**SUMMARY OF REQUEST: Major site plan review**

**SUGGESTED MOTION: I move that the TRC approve the major site plan for Kiln Drying Systems**



## Henderson County, North Carolina Code Enforcement Services

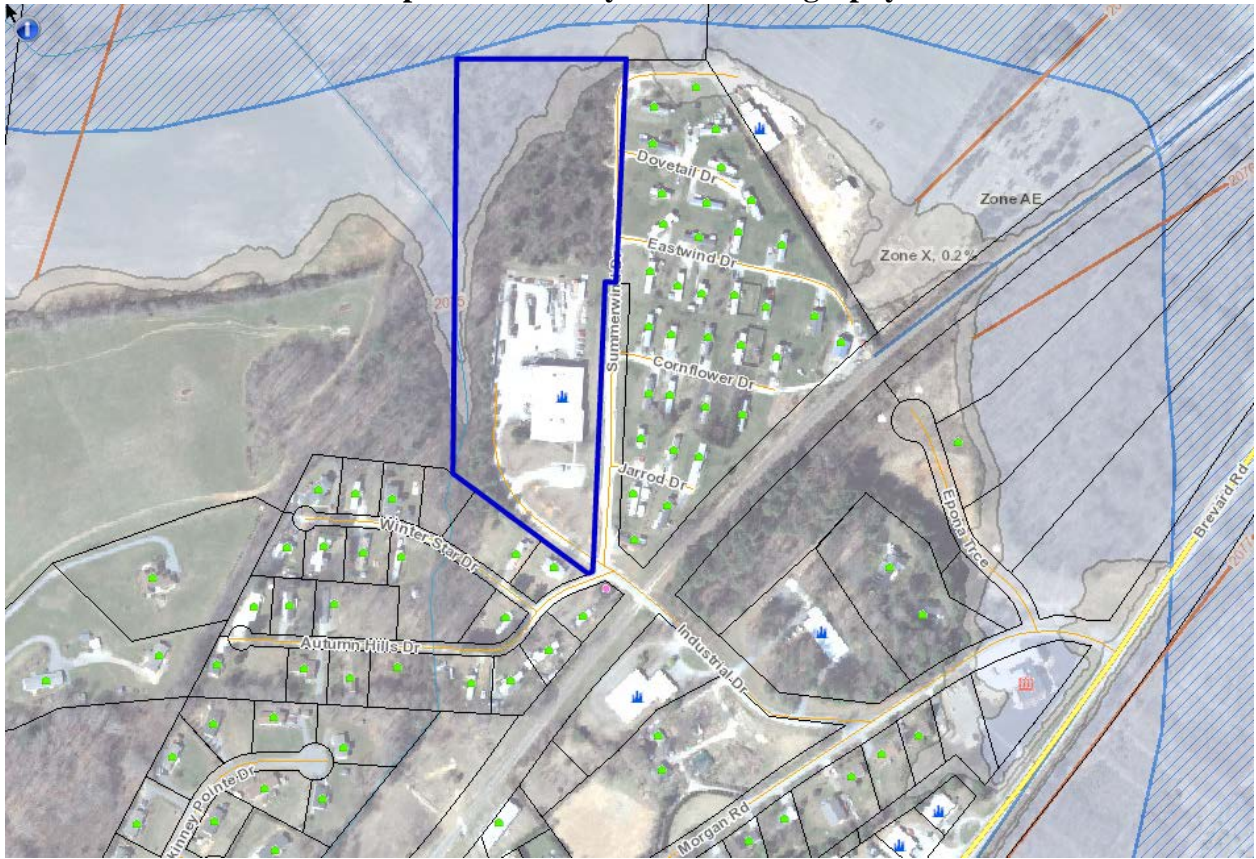
### 1. Committee Request

- 1.1. **Applicant:** Kiln Drying Systems/Rick Buchanan
- 1.2. **Request:** Major Site Plan Approval
- 1.3. **PIN:** 9539136346
- 1.4. **Size:** 9.51 acres +/-
- 1.5. **Location:** The subject area is located at 234 Industrial Drive, at the end of Industrial Drive in Etowah.
- 1.6. **Supplemental Requirements:**

#### **SR 10.8. *Manufacturing and Production Operations***

- (1) Site Plan. Major *Site Plan* required in accordance with §200A-331 (Major Site Plan Review).
- (2) Lighting. *Adequate lighting* shall be placed in areas used for vehicular/pedestrian access including, but not limited to: stairs, sidewalks, crosswalks, intersections, or changes in grade. *Lighting mitigation* required.
- (3) Dust Reduction. Unpaved *roads, travelways* and/or parking areas shall be treated to prevent dust from adverse effects to adjacent properties.

Map A: Pictometry/Aerial Photography





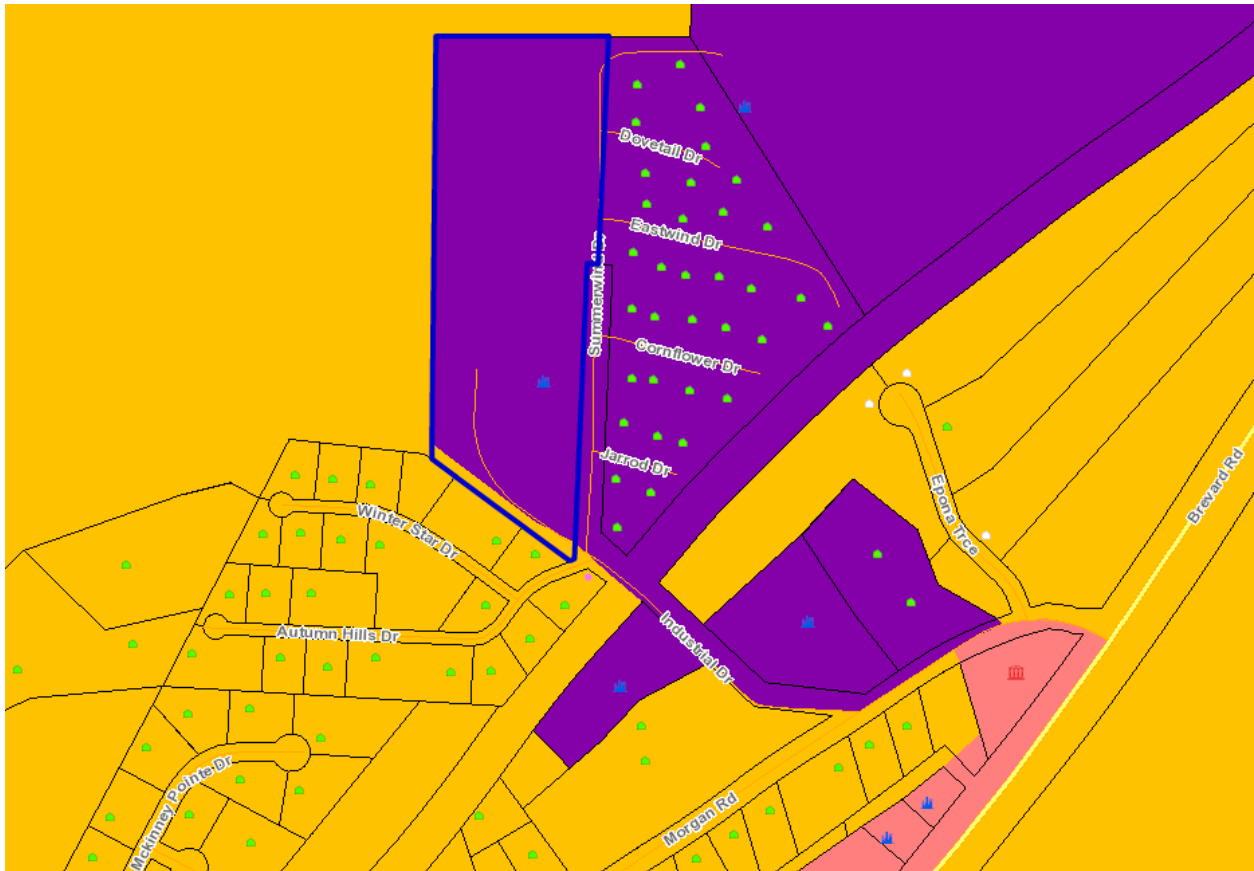
2. **Current Conditions**

**Current Use:** This parcel is currently in manufacturing use.

**Adjacent Area Uses:** The surrounding properties consist of mixed residential, agricultural, commercial and institutional uses.

**Zoning:** The surrounding property to the east is zoned Industrial (I) and to the north, south and west is zoned Residential One (R1).

**Map B: Current Zoning**



3. **Floodplain /Watershed Protection** The northwest portion property is located in a Special Flood Hazard Area. The property is located in the Upper French Broad River WS-IV Protected Area-Water Supply Watershed district.

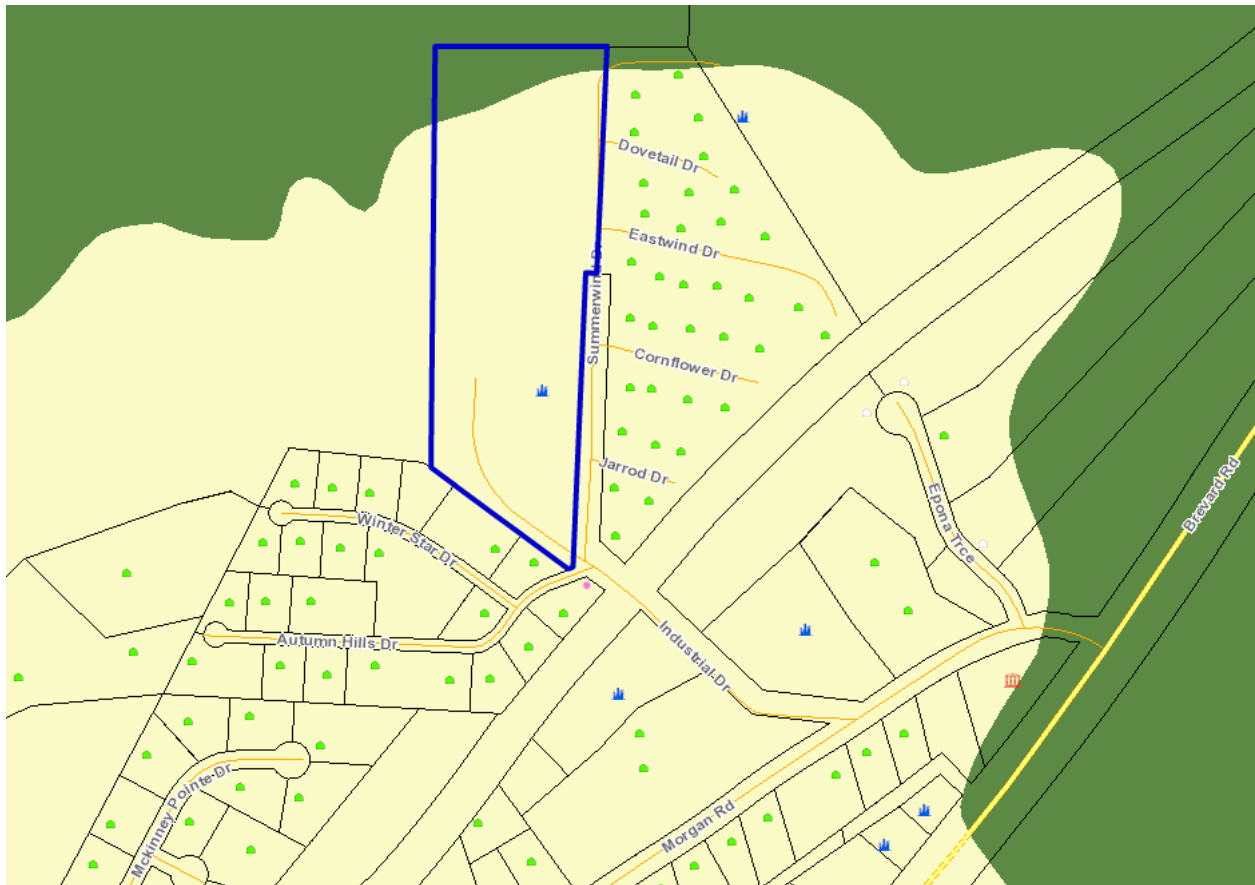
4. **Water and Sewer** This property will be served by public water and private septic system.

**Public Water:** City of Hendersonville

**Public Sewer:** not available



**Map C: CCP Future Land Use Map**



**5. Comprehensive Plan**

**The 2020 CCP:** The CCP Future Land Use Map places the majority of the Subject Area in the Rural / Urban Transition Area (RTA) and a small portion in the Conservation Community Service Center Area. The text and map of the 2020 CCP suggest that the Subject Area would be more suitable for the following:

**Rural/Agricultural Category** covers those portions of the county that are predominantly rural and are characterized by low-density residential development with substantial land areas devoted to agriculture and undeveloped lands. Land use policies will seek to retain that character.

1. Slopes are typically steep, often exceeding 10%, with significant areas greater than 20%.
2. Most sections of the RAA are so far from sewer services as to make their extension largely impossible. Land development regulations should recognize this by not permitting densities that would require sewer services or introduce traffic capacity problems and by encouraging densities that are consistent with steep slopes, poor septic capacities, and sensitive topography.

**Conservation** category includes land areas that are intended to remain largely in their natural state, with only limited development. Such areas should be targeted for protection through regulations and incentives. Conservation areas are lands that generally exhibit any of the following characteristics:

1. Sensitive natural areas such as steep slopes, floodplains, major wetlands, forest reserves and wildlife conservation areas, and key watersheds
2. Areas of historic and archeological significance
3. Local, state or federally-managed natural areas
4. Areas managed for agricultural or forestry land uses
5. Other areas yet to be defined

**6. Staff Recommendations**

Staff's Position at this time, under the guidelines of current plans, policies and studies, is to approve the Major Site Plan and recommend approval to the Zoning Board of Adjustment because it is consistent with the current surrounding land uses and future land use recommendations.

**7. Photographs**

**LOOKING WEST FROM SUMMERWIND DR**





**LOOKING WEST FROM SUMMERWIND DR**



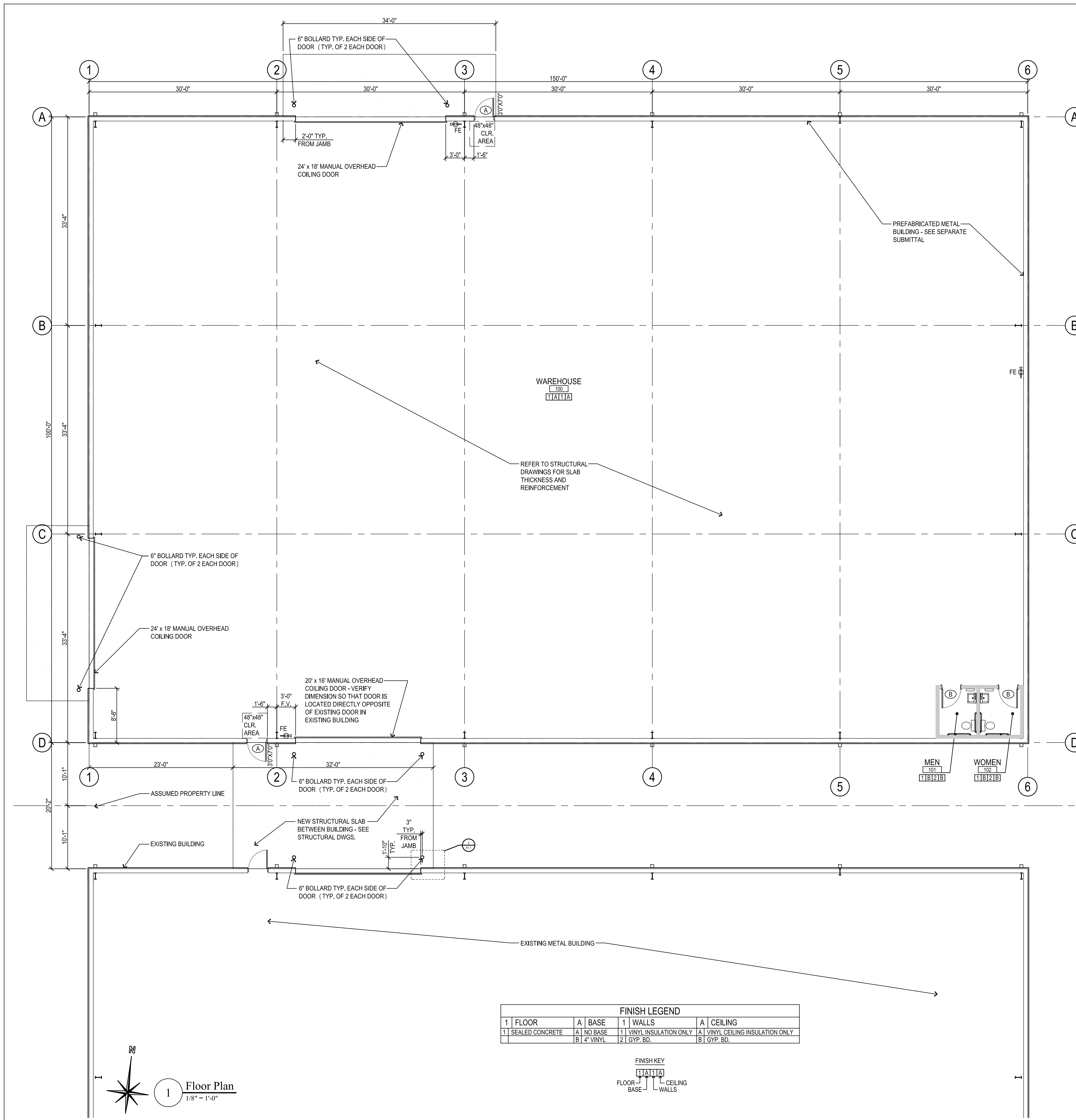
**LOOKING EAST INTO PARKING AREA**





**LOOKING NORTH INTO STORAGE AREA**





**CODE REVIEW NOTES:**

NOTE: SEE METAL BUILDING MANUF. SHOP DWGS. FOR ELEVATIONS OF BUILDING AND FURTHER INFORMATION. DOOR LOCATIONS AND INTERIOR WALL SHOWN ON THIS PLAN ARE CORRECT VERSION TO BE CONSTRUCTED. SEE SEPARATE SUBMITTAL FOR ALL CIVIL DRAWINGS AND PARKING LOT AND SIDEWALK LAYOUTS. ARCHITECT'S LIABILITY IS LIMITED TO WORK SHOWN ON PLANS.

**LEGEND**

8" METAL GIRTS WITH VINYL BATT INSULATION.

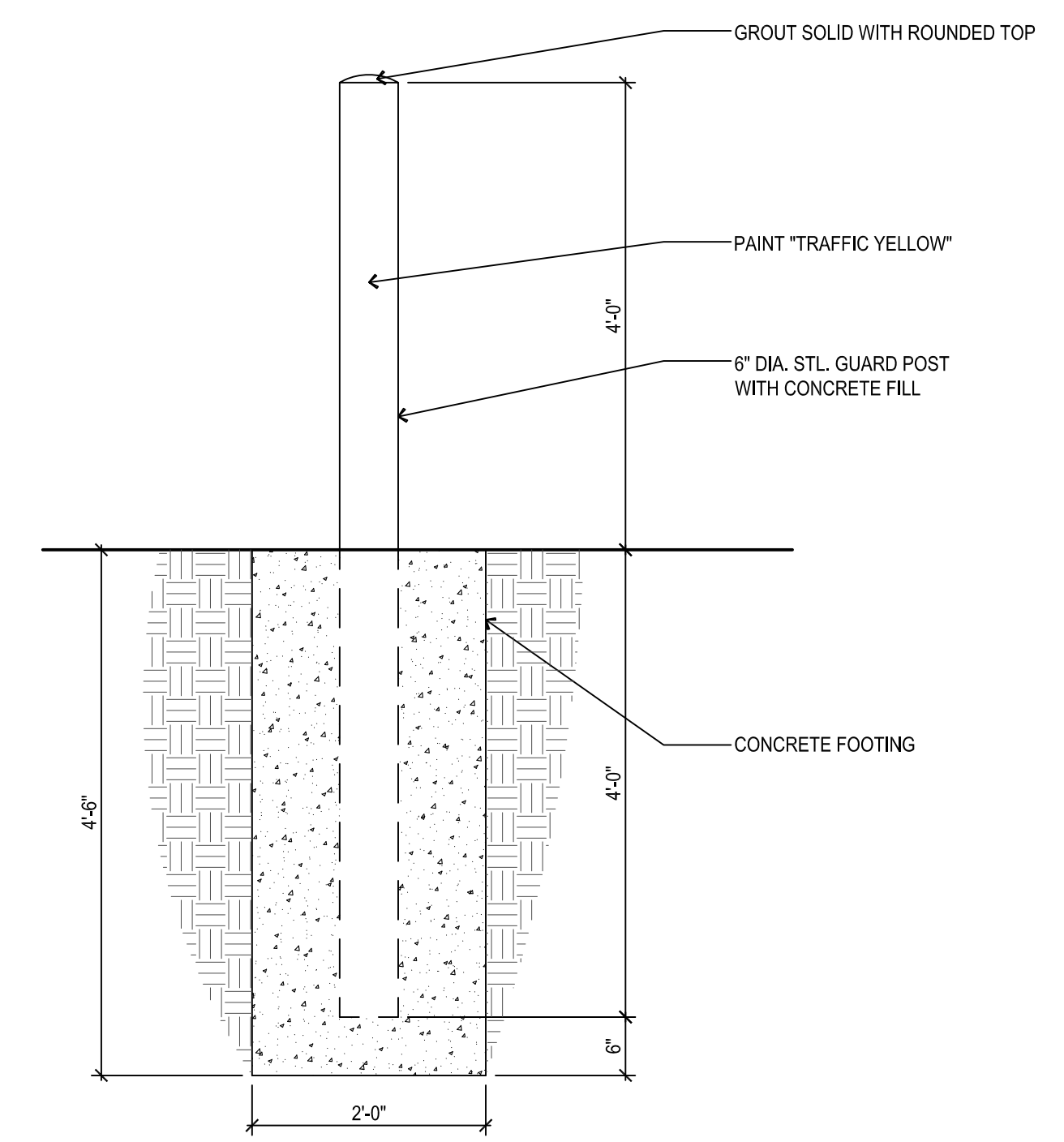
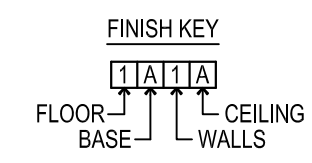
FE = WALL MOUNTED FIRE EXTINGUISHER AT 48" AFF. PROVIDE SIGNAGE AT EACH LOCATION WITH RAISED LETTERING, ABC TYP 5 LB. PER 3,000 SF OR 75' OF TRAVEL. VERIFY LOCATIONS WITH OWNER.

3'-0" X 7'-0" HOLLOW METAL DOOR AND FRAME BY METAL BUILDING MANUFACTURER. DOOR TO HAVE LEVER HARDWARE AND CLOSER.

3'-0" X 7'-0" HOLLOW METAL DOOR AND FRAME. FRAME TO BE FULLY WELDED CORNERS, 14 GAUGE AND PRIMED. DOOR TO BE 1 3/4" HOLLOW METAL, 16 GAUGE WITH LEVER HARDWARE AND CLOSER.

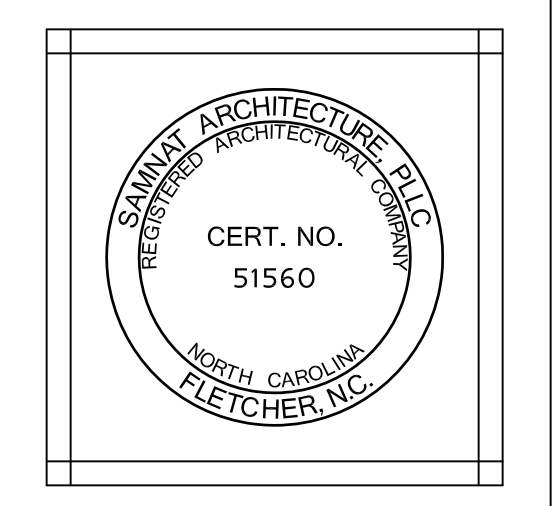
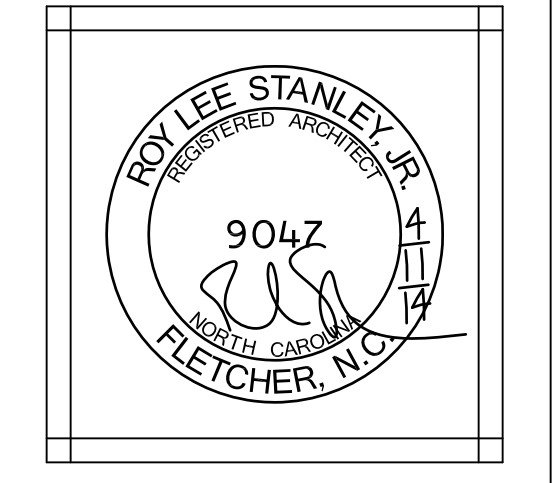
**FINISH LEGEND**

1 FLOOR	A BASE	1 WALLS	A CEILING
1 SEALED CONCRETE	A NO BASE	1 VINYL INSULATION ONLY	A VINYL CEILING INSULATION ONLY
	B 4" VINYL	2 GYP. BD.	B GYP. BD.



**2 Bollard Detail**  
1" = 1'-0"

**SAMNAT ARCHITECTURE**



Member American Institute of Architects

**SAMNAT ARCHITECTURE, PLLC**

44 Buck Shoals Rd.  
Suite B-6  
Arden, North Carolina 28704  
828.778.1164 Office

[www.samnatarchitecture.com](http://www.samnatarchitecture.com)

**PROJECT DESCRIPTION:**

**KDS Warehouse II**

Etowah, North Carolina

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REVISIONS:  
PROJECT NUMBER:

14014

DATE:

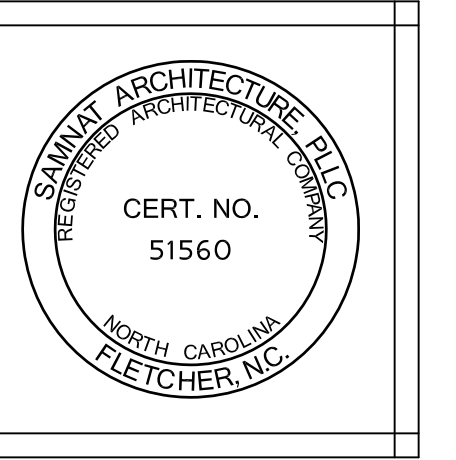
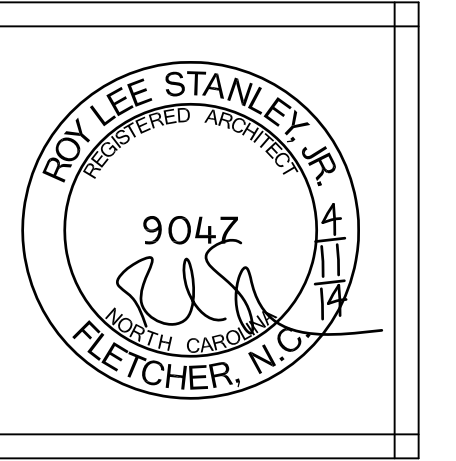
April 11, 2014

SHEET TITLE:  
Floor Plan / Detail

SHEET:

**A1.1**

**1 Floor Plan**  
1/8" = 1'-0"



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REVISIONS:

PROJECT NUMBER:

14014

DATE:

April 11, 2014

SHEET TITLE:

Enlarged Floor Plan /  
Elevations

SHEET:

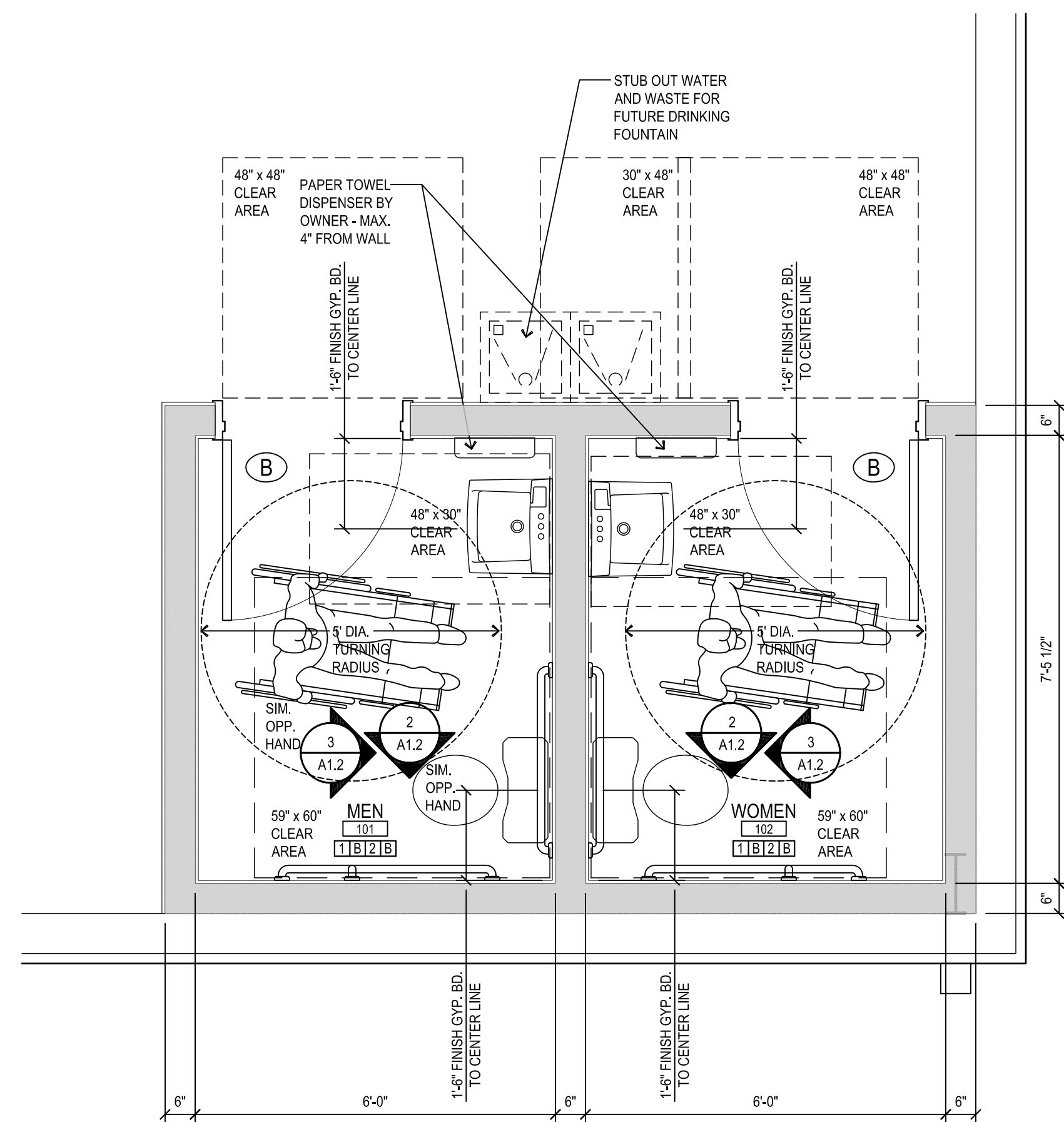
**A1.2**

**GENERAL CONSTRUCTION NOTES**

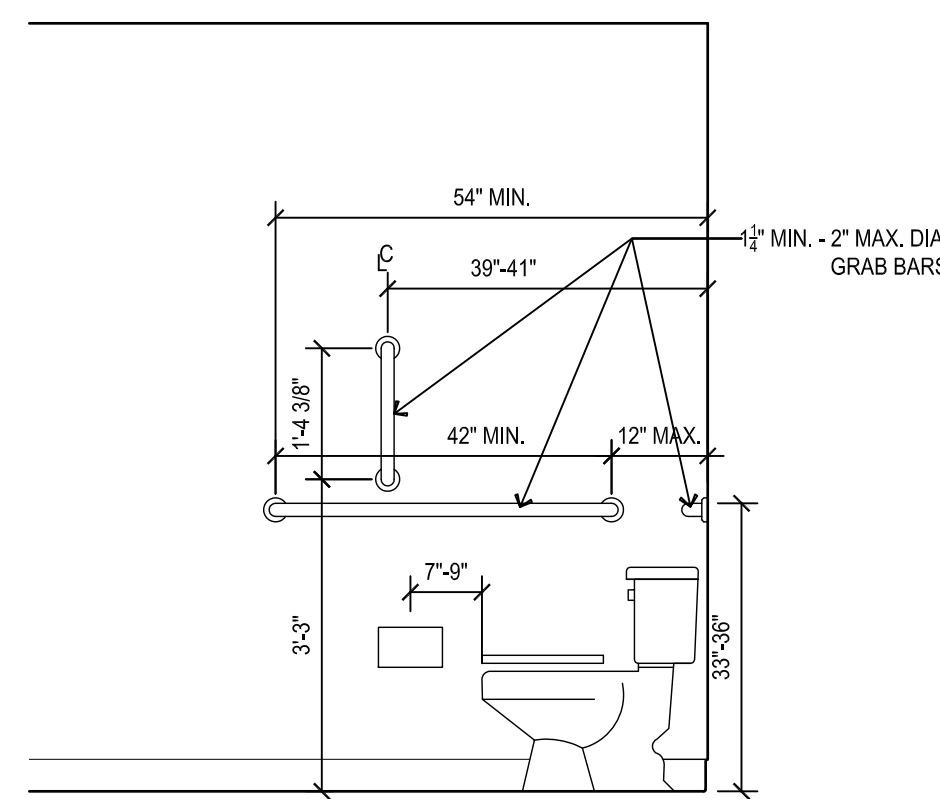
- G.C TO VERIFY ALL DIMENSIONS AND NOTIFY ARCHITECT PRIOR TO ANY CONSTRUCTION OF ANY DISCREPANCIES.
- ALL ELEVATION DIMENSIONS ARE TO FACE OF FINISH U.N.O. ALL PLAN DIMENSIONS ARE TO FACE OF STUD U.N.O.
- ALL WALLS TO RECEIVE ONE (TINTED) COAT PRIMER AND TWO FINISH COATS OF PAINT. COLORS TO BE SELECTED BY OWNER.
- CONTRACTOR TO PROVIDE SUPPORT BLOCKING AS REQUIRED FOR INSTALLATION OF ALL WALL MOUNTED EQUIPMENT, INCLUDING GRAB BARS, SINKS, MIRRORS, DISPENSERS, TYPICAL.

**SIGNAGE**

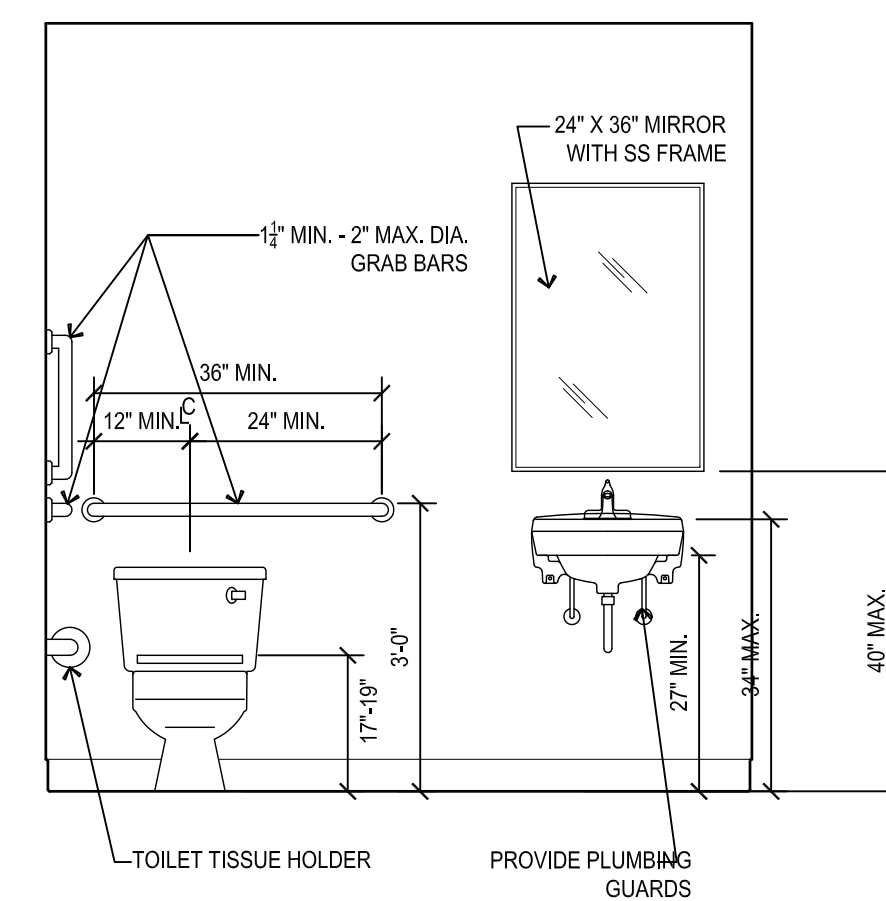
PROVIDE 1" LETTERING WITH TACTILE CHARACTER, BRAILLE, AND PICTOGRAMS AT TOILETS ALL TO MEET ANSI A117.1. PROVIDE ONE MEN, ONE WOMEN.



1 Enlarged Toilet Plan  
1/2" = 1'-0"

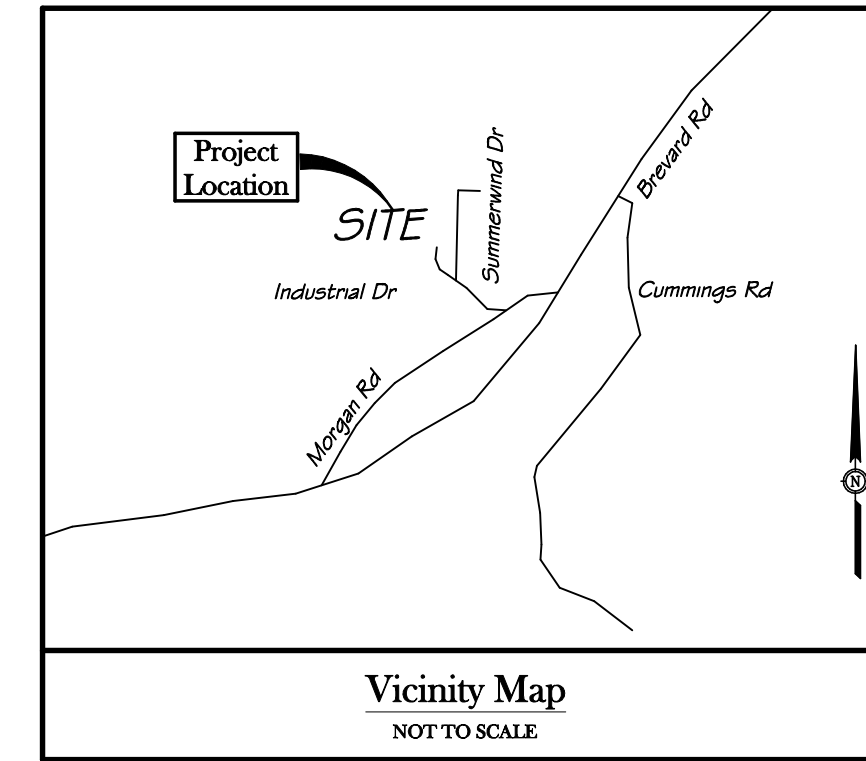
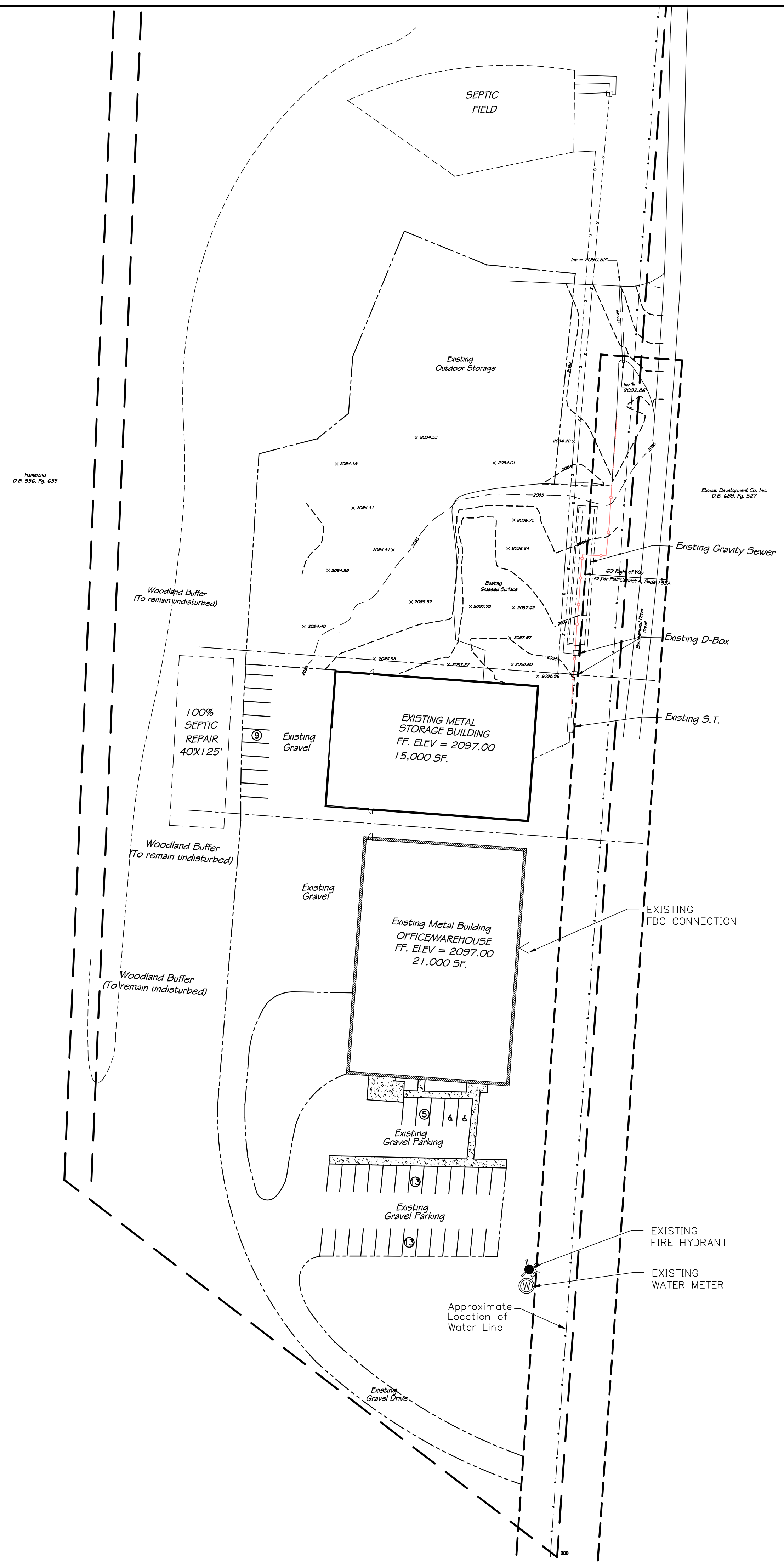


2 Typical Toilet Elevation  
1/2" = 1'-0"



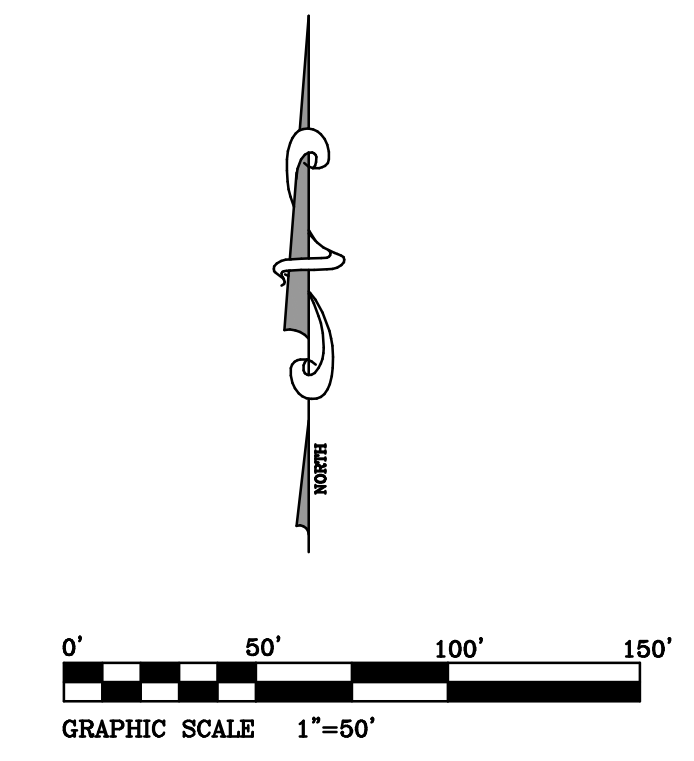
3 Typical Toilet Elevation  
1/2" = 1'-0"



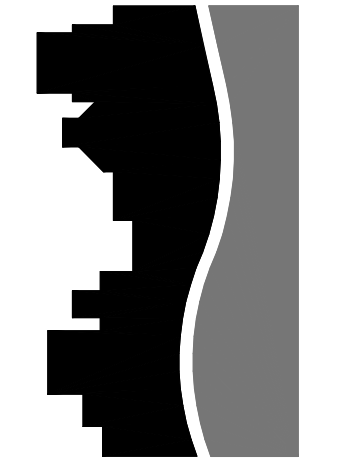


DEVELOPMENT DATA BLOCK	
OWNER/DEVELOPER:	KILN DRYING SYSTEMS & COMPONENTS
CONTACT:	R.L. STANLEY, JR. AIA
PHONE:	828.778.864
ADDRESS:	P.O. BOX 643, ARDEN NC. 28704
PIN:	953913-6346
PHYSICAL ADDRESS:	234 INDUSTRIAL DRIVE
PROPERTY SIZE:	32.47 ACRES
ZONING DISTRICT:	R1J
DISTURBED AREA:	34,543.7345 SF (0.79 AC.)
SOIL INFORMATION:	HAYESVILLE LOAM, 15 TO 25% SLOPES
IMPERVIOUS AREA:	<p>PRE DEVELOPMENT:</p> <p>IMPERVIOUS AREA = 375,671 SQ. FT. (8.62 AC.)</p> <p>POST DEVELOPMENT:</p> <p>IMPERVIOUS AREA = 381,871 SQ. FT. (8.77 AC.)</p> <p>BUILDING: 15,000 SF</p> <p>NOTE: PROPOSED BUILDING SETS IN GRAVEL PARKING AREA EXCEPT FOR 6,497 SF IN CURRENT PERVIOUS AREA.</p>
PARKING SPACE REQUIREMENTS:	<p>1 SPACE PER 500 SF OFFICE SPACE</p> <p>1 SPACE PER 4000 SF STORAGE/WAREHOUSE SPACE</p> <p>EXISTING OFFICE SPACE = 10,500 SF/500 S PER SF. = <b>21 SPACES</b></p> <p>EXISTING STORAGE = 15,000 (EXISTING STORAGE BUILDING) + 15,000 (PROPOSED STORAGE BUILDING)</p> <p>40,500 / 4000 PER SF. = 10.12 SPACES = <b>11 SPACES</b></p> <p>21 SPACES + 11 SPACES = <b>32 SPACES REQUIRED</b></p> <p><b>PARKING SPACES PROVIDED = 40 EACH</b></p>

- Legend:
- EIP = Existing Iron Pipe
  - EIS = Existing Iron Stake
  - IPS = Iron Pin Set
  - ROW = Right of Way
  - CPP = Corrugated Plastic Pipe
  - C/O = Clean Out
  - P/P = Power Pole
  - - - = Property Lines NOT Surveyed
  - - - = Fence
  - x = Spot Elevation
  - ⊕ = Fire Hydrant
  - ⊙ = Water Meter

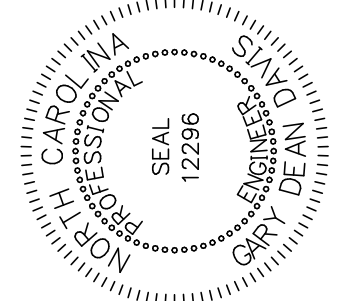


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**SITE DEVELOPMENT PLAN**  
**FOR**  
**KILN DRYING SYSTEMS**  
 HENDERSON COUNTY, NORTH CAROLINA

Job No.: 14195  
 Date: March, 2014  
 Scale: 1"=50'  
 Revision:

**EXISTING CONDITIONS**

Sheet  
**C1**



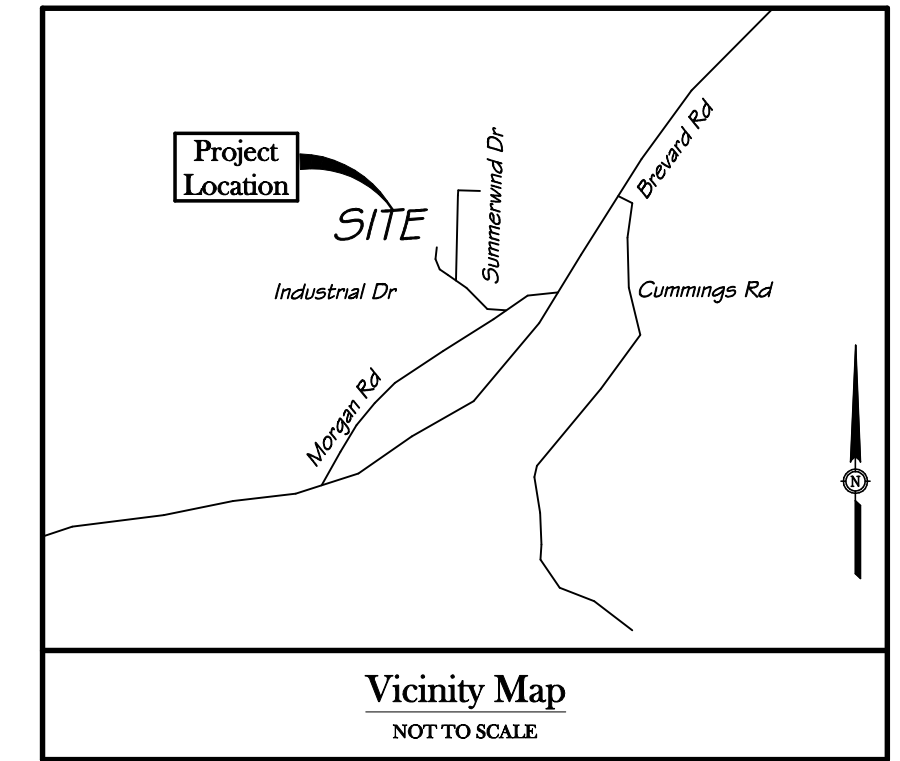
**STORM DRAINAGE STRUCTURE SCHEDULE**

DRAINAGE STRUCTURE	TYPE	TOP ELEVATION	INV. ELEV.
A1	DROP INLET	2096.8	2094.5±
A2	DROP INLET	*2095.5	*2093.8
A3	JUNCTION BOX	*2095.5	*2093.0
A4	OUTLET	----	*2092.0±

\* CONTRACTOR SHALL FIELD VERIFY PRIOR TO CONSTRUCTION.

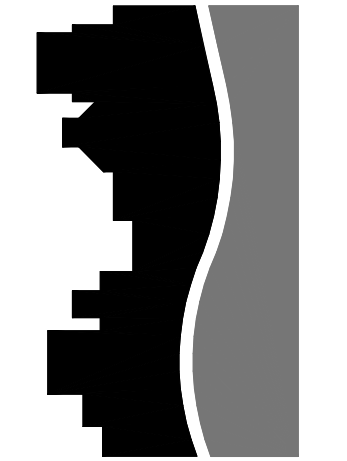
**STORM DRAINAGE PIPE SCHEDULE**

PIPE	MATERIAL	LENGTH (FT)	SIZE (IN)	SLOPE
A1-A2	HDPE	70 LF	12"	0.0143
A2-A4	HDPE	90 LF	15"	0.0090
A3-A4	HDPE	105 LF	18"	0.0095

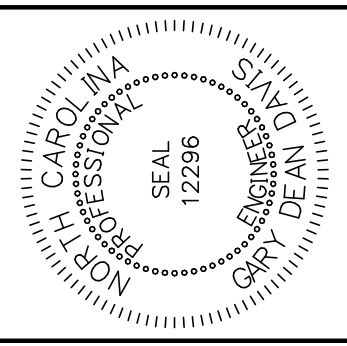


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21 SPACES + 11 SPACES = 32 SPACES REQUIRED	
PARKING SPACES PROVIDED = 40 EACH	

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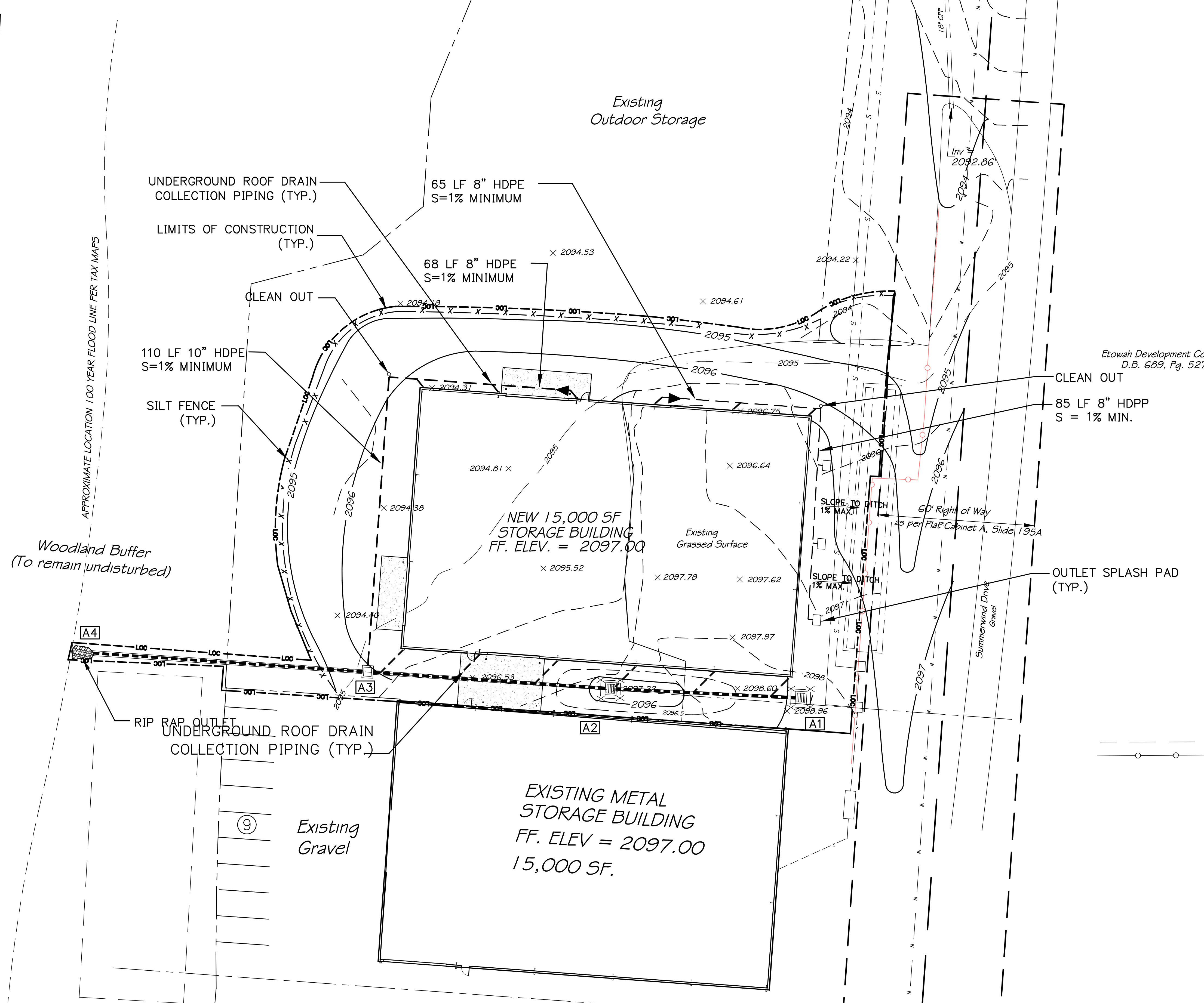


**SITE DEVELOPMENT PLAN FOR KILN DRYING SYSTEMS**  
 HENDERSON COUNTY, NORTH CAROLINA

Job No.: 14135  
 Date: March, 2014  
 Scale: 1"=20'  
 Revision:

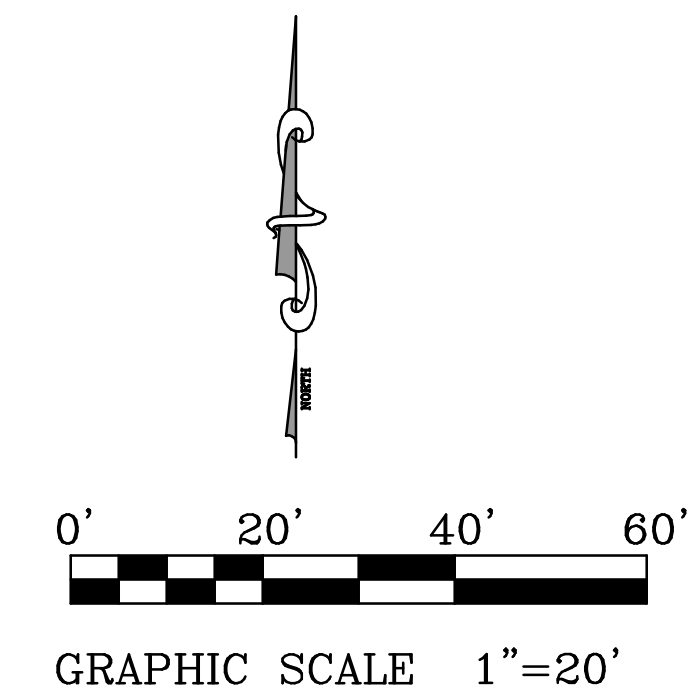
**GRADING, STORM DRAINAGE & EROSION CONTROL**

Sheet **C2**



NOTE:  
EXTERIOR LIGHTING MUST BE FULL CUT OFF

- Legend:
- EIP = Existing Iron Pipe
  - EIS = Existing Iron Stake
  - IPS = Iron Pin Set
  - ROW = Right of Way
  - CPP = Corrugated Plastic Pipe
  - C/O = Clean Out
  - PIP = Power Pole
  - = Property Lines NOT Surveyed
  - - - - - = Fence
  - X = Spot Elevation



and Pg. 635



**GENERAL CONSTRUCTION NOTES**

- FINISH GRADE TOLERANCES SHALL BE AS NOTED IN THE SPECIFICATIONS. THE ENGINEER MAY MAKE GRADE CHANGES AS REQUIRED IN THE FIELD WITHOUT EFFECTING THE UNIT BID PRICE FOR UNCLASSIFIED EXCAVATION.
- UNLESS OTHERWISE STATED, ALL FILL AREAS SHALL BE CONSTRUCTED IN LAYERS OF 6" MAXIMUM THICKNESS, WITH WATER ADDED OR SOIL CONDITIONED TO THE OPTIMUM MOISTURE CONTENT AS DETERMINED BY THE ENGINEER AND COMPACTED WITH A SHEEP'S FOOT ROLLER TO A COMPACTION EQUAL TO OR GREATER THAN 95% (100% IN THE TOP 2' OF THE SUB GRADE BELOW ROADWAYS, PARKING LOTS, AND SLABS) OF THE DENSITY OBTAINED BY COMPACTING A SAMPLE OF THE MATERIAL IN ACCORDANCE WITH THE STANDARD PROCTOR METHOD OF MOISTURE-DENSITY RELATIONSHIP TEST, ASTM D698 OR AASHTO-99 UNLESS SPECIFIED IN OTHER SPECIFICATIONS.
- ENTIRE AREA TO BE GRADED SHALL BE CLEARED AND GRUBBED. NO FILL SHALL BE PLACED ON ANY AREA NOT CLEARED AND GRUBBED.
- ALL SOIL EROSION CONTROL MEASURES REQUIRED BY THE GRADING PLAN SHALL BE PERFORMED PRIOR TO GRADING, CLEARING OR GRUBBING. ALL EROSION CONTROL DEVICES SUCH AS SILT FENCES, ETC., SHALL BE MAINTAINED IN WORKABLE CONDITION FOR THE LIFE OF THE PROJECT BY THE CONTRACTOR AT HIS EXPENSE. EROSION CONTROL FACILITIES SHALL BE REMOVED AT THE COMPLETION OF THE PROJECT ONLY ON THE ENGINEER'S APPROVAL. PAYMENT SHALL BE CONSIDERED INCIDENTAL TO CLEARING AND GRUBBING UNLESS OTHERWISE SPECIFIED. IF DURING THE LIFE OF THE PROJECT, A STORM CAUSES SOIL EROSION WHICH CHANGES FINISH GRADES OR CREATES "GULLIES" AND "WASHED AREAS", THESE SHALL BE REPAIRED AT NO ADDITIONAL COST, AND ALL SILT WASHED OFF OF THE PROJECT SITE ONTO ADJACENT PROPERTY SHALL BE REMOVED AS DIRECTED BY THE ENGINEER AT NO ADDITIONAL COST. THE CONTRACTOR SHALL ADHERE TO ANY APPROVED EROSION CONTROL PLANS WHETHER INDICATED IN THE CONSTRUCTION PLANS OR UNDER SEPARATE COVER.  
  
EROSION CONTROL IS FIELD PERFORMANCE BASED AND ADDITIONAL SILT FENCES, TEMPORARY SEDIMENT BASINS AND OTHER MEASURES MAY NEED TO BE INSTALLED IN ADDITION TO THE APPROVED PLAN AS NECESSARY. MEASURES INDICATED ON THE DRAWINGS CAN AND SHOULD BE ADJUSTED TO ASSURE MAXIMUM PROTECTION OF THE SITE.
- DISPOSABLE MATERIAL
  - CLEARING AND GRUBBING WASTES SHALL BE REMOVED FROM THE SITE AND PROPERLY DISPOSED OF BY THE CONTRACTOR AT HIS EXPENSE, UNLESS SPECIFIED OTHERWISE.
  - SOLID WASTES TO BE REMOVED, SUCH AS SIDEWALKS, CURBS, PAVEMENT, ETC., MAY BE PLACED IN SPECIFIC DISPOSAL AREAS DELINEATED ON THE PLANS WITH THE PRIOR APPROVAL OF THE ENGINEER OR SHALL BE REMOVED FROM THE SITE AS REQUIRED BY THE SPECIFICATIONS. THIS MATERIAL SHALL HAVE A MINIMUM COVER OF 2'. THE CONTRACTOR SHALL MAINTAIN SPECIFIED COMPACTION REQUIREMENTS IN THESE AREAS. WHEN DISPOSAL SITES ARE NOT PROVIDED, THE CONTRACTOR SHALL REMOVE THIS WASTE FROM THE SITE AND PROPERLY DISPOSE OF IT AT HIS EXPENSE.
  - ABANDONED UTILITIES SUCH AS CULVERTS, WATER PIPE, HYDRANTS, CASTINGS, PIPE APPURTENANCES, UTILITY POLES, ETC., SHALL BE THE PROPERTY OF THE SPECIFIC UTILITY AGENCY, OR COMPANY HAVING JURISDICTION. BEFORE THE CONTRACTOR CAN REMOVE, DESTROY, SALVAGE, REUSE, SELL OR STORE FOR HIS OWN USE ANY ABANDONED UTILITY, HE MUST PRESENT TO THE OWNER WRITTEN PERMISSION FROM THE UTILITY INVOLVED.
  - ON SITE BURNING IS AN ACCEPTABLE METHOD OF DISPOSING OF FLAMMABLE WASTES WHERE ALLOWED BY LOCAL CODES. WHEN BURNING IS ANTICIPATED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND MEETING GOVERNING CODES. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OR HIS REPRESENTATIVE AS TO THE SPECIFIC LOCATION OF BURNING AND SHALL PROVIDE COPIES OF SECURED PERMITS. AFTER BURNING IS COMPLETED, PURE ASH MAY BE DISPOSED OF BY MIXING WITH FILL DIRT UPON THE APPROVAL OF THE ENGINEER. ALL MATERIAL NOT TOTALLY BURNED SHALL BE DISPOSED OF AS SPECIFIED IN "B" ABOVE. THE CONTRACTOR SHALL NOT HOLD UP WORK PROGRESS FOR THE PURPOSE OF WAITING FOR A "BURNING DAY".
- IN THE EVENT EXCESSIVE GROUNDWATER OR SPRINGS ARE ENCOUNTERED WITHIN THE LIMITS OF CONSTRUCTION, THE CONTRACTOR SHALL INSTALL NECESSARY UNDER DRAINS AND STONE AS DIRECTED BY THE ENGINEER AND AS APPROVED BY PERMITTING FROM THE REGULATORY AGENCIES. ALL WORK SHALL BE PAID BASED UPON UNIT BIDS, UNLESS SPECIFIED OTHERWISE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION OF ADJUSTMENT OF ALL UTILITY SURFACE ACCESSSES WHETHER HE PERFORMS THE WORK OR A UTILITY COMPANY PERFORMS THE WORK.

**NOTE-1**

**NORTH CAROLINA LAND QUALITY SECTION  
EROSION CONTROL NOTES**

GENERAL: ALL EROSION CONTROL MEASURES ARE TO BE PERFORMED IN STRICT ACCORDANCE WITH REQUIREMENTS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES, DIVISION OF LAND RESOURCES, LAND QUALITY SECTION. THE FOLLOWING CONSTRUCTION SEQUENCE SHALL BE COMPLIED WITH FOR ALL WORK.

- OBTAIN GRADING PERMIT.
- INSTALL ALL EROSION CONTROL MEASURES AS REQUIRED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES, DIVISION OF LAND RESOURCES, LAND QUALITY SECTION.
- OBTAIN CERTIFICATE OF COMPLIANCE THROUGH ON-SITE INSPECTION BY A REPRESENTATIVE OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES, DIVISION OF LAND RESOURCES, LAND QUALITY SECTION.
- PROCEED WITH GRADING, CLEARING AND GRUBBING.
- SEED AND MULCH DENUDE AREA WITHIN 14 DAYS ON DISTURBED FLAT AREAS AND 7 DAYS ON ALL PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL. GROUND COVER SHALL BE REQUIRED AS SOON AS PRACTICABLE BUT IN ANY EVENT WITHIN 14 (OR 7) CALENDAR DAYS FROM THE LAST LAND-DISTURBING ACTIVITY.  
  
SEED AND SOIL AMENDMENTS SHALL BE PLACED ON A PREPARED SEEDBED AT THE FOLLOWING RATES PER ACRE:  
**SUMMER (PERMANENT) SEEDING (MAY 15 TO AUGUST 15)**  
LIME 4,000 LBS  
FERTILIZER (10-10-10) 1,000 LBS  
KY-31 FESCUE 100 LBS  
STRAW MULCH 4,000 LBS. (ANCHORED)  
GERMAN MILLET 40 LBS.  
(OR SMALL-STEMMED SUDAN GRASS @ 40 LBS.)  
**WINTER (TEMPORARY) SEEDING (AUGUST 15 TO MAY 15) MOUNTAINS**  
LIME 4,000 LBS  
FERTILIZER (10-10-10) 1,000 LBS  
KY-31 FESCUE 100 LBS  
STRAW MULCH 4,000 LBS. (ANCHORED)  
RYE (GRAIN) 120 LBS.  
**FOR ALL SLOPES 2:1 OR STEEPER ADD TO THE ABOVE:**  
SERICEA LESPEDEZA (KOREAN) 50 LBS  
IF HYDROSEEDING, WOOD CELLULOSE MAY BE USED IN ADDITION TO STRAW MULCH AT THE RATE OF 1,000 LBS PER ACRE.  
  
ALL SEEDING SHALL BE MAINTAINED, WATERED, ETC., UNTIL A PERMANENT VEGETATIVE GROUND COVER IS ESTABLISHED OVER ALL DISTURBED AREAS.  
  
ALL SLOPES 2:1 OR STEEPER SHALL BE COVERED BY EROSION CONTROL MATTING.
- MAINTAIN SOIL EROSION CONTROL MEASURES UNTIL PERMANENT GROUND COVER IS ESTABLISHED.
- REMOVE SOIL EROSION CONTROL MEASURES AND STABILIZE THESE AREAS.
- REQUEST FINAL APPROVAL BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES, DIVISION OF LAND RESOURCES, LAND QUALITY SECTION.
- EROSION CONTROL IS FIELD PERFORMANCE BASED AND ADDITIONAL SILT FENCES, TEMPORARY SEDIMENT BASINS AND ALL OTHER MEASURES MAY NEED TO BE ADDED IN ADDITION TO THE APPROVED PLAN AS NECESSARY. MEASURES SHOWN CAN AND SHOULD BE ADJUSTED TO ASSURE MAXIMUM PROTECTION OF SITE.
- THE CONTRACTOR SHALL MAKE INSPECTIONS OF THE SITE DURING AND AFTER THE INSTALLATION OF EROSION CONTROL FACILITIES; THE COMPLETION OF EACH PHASE OF CLEARING AND GRADING; THE INSTALLATION OF STORM DRAINAGE FACILITIES; THE COMPLETION OF CONSTRUCTION; IMMEDIATELY AFTER EACH RAINFALL EVENT; AND CONTINUALLY UNTIL PERMANENT GROUND COVER IS ESTABLISHED.
- THE SITE INSPECTION SHALL DOCUMENT THE INSTALLATION OF ALL REQUIRED FACILITIES; THE COMPLETION OF ALL GRADING AND GROUND COVER; THE MAINTENANCE OF ALL FACILITIES; AND ANY DEVIATIONS FROM THE APPROVED PLANS. AT A MINIMUM, THE DOCUMENTATION SHALL BE PROVIDED USING DMLRWDG FORM 04292013 PROVIDED AT LEAST WEEKLY TO THE ENGINEER.

**NOTE-5**

**GENERAL CONSTRUCTION NOTES CONT'D.**

- THE CONTRACTOR SHALL CONTROL ALL "DUST" BY PERIODIC WATERING AND SHALL PROVIDE ACCESS AT ALL TIMES FOR PROPERTY OWNERS WITHIN THE PROJECT AREA AND FOR EMERGENCY VEHICLES. ALL OPEN DITCHES AND HAZARDOUS AREAS SHALL BE CLEARLY MARKED BY THE CONTRACTOR IN ACCORDANCE WITH THE SPECIFICATIONS.
- ALL AREAS WHERE THERE IS EXPOSED DIRT SHALL BE SEEDED, FERTILIZED AND MULCHED ACCORDING TO THE SPECIFICATIONS. THE FINISHED SURFACE SHALL BE TO GRADE AND SMOOTH, FREE OF ALL ROCKS LARGER THAN 3", EQUIPMENT TRACKS, DIRT CLODS, BUMPS, RIDGES AND GOGGES PRIOR TO SEEDING; THE SURFACE SHALL BE LOOSENEED TO A DEPTH OF 4"-6" TO ACCEPT SEED. THE CONTRACTOR SHALL NOT PROCEED WITH SEEDING OPERATIONS WITHOUT FIRST OBTAINING THE ENGINEER'S APPROVAL OF THE GRADED SURFACE. ALL SEEDING SHALL BE PERFORMED BY A MECHANICAL "HYDRO-SEEDER". HAND SEEDING SHALL BE AUTHORIZED ON AN AREA BY AREA APPROVAL BY THE ENGINEER. ALL FILL AND CUT SLOPES 2:1 HORIZONTAL TO VERTICAL, OR STEEPER, SHALL BE COVERED, AFTER SEEDING, WITH EROSION CONTROL MATTING CONSISTING OF BIODEGRADABLE STRAW WITH NATURAL FIBER OR BIODEGRADABLE NETTING, APPROVED BY THE ENGINEER.
- WHERE SPECIFIED, STORM DRAIN PIPE SHALL BE CORRUGATED METAL PIPE (CMP) CONFORMING TO AASHTO M-36, WITH PREROLLED ENDS TO ACCOMMODATE CORRUGATED COUPLING BANDS. 18" PIPE SHALL BE 16 GAUGE, 24" AND 30" PIPE SHALL BE 14 GAUGE AND 36" PIPE AND OVER SHALL BE 12 GAUGE AS SPECIFIED ON THE PLANS. PIPE AND COUPLING BANDS SHALL CONFORM TO NCDOT 1032-3 FOR PLAIN PIPE OR 1032-4(A) FOR BITUMINOUS COATED AND PARTIALLY PAVED PIPE. DIMPLE BANDS SHALL NOT BE USED.  
  
WHERE SPECIFIED, STORM DRAIN PIPE SHALL BE REINFORCED CONCRETE PIPE (RCP) CONFORMING TO AASHTO M-170, AS CONTAINED IN NCDOT STANDARD SPECIFICATION 1032-9 FOR WALL "B" TYPE.  
  
WHERE SPECIFIED, ALL STORM DRAIN PIPE SHALL BE HIGH DENSITY POLYETHYLENE (HDPE), CORRUGATED EXTERIOR, SMOOTH WALL INTERIOR, WITH SOIL TIGHT JOINTS, BACKFILLED WITH # 57 WASHED STONE, UP TO MIN. 6" OVER THE TOP OF THE PIPE. HDPE PIPE USED FOR STORM DRAINAGE DETENTION SYSTEMS SHALL BE "HANCOR BLUE SEAL" OR APPROVED EQUAL, WITH WATER TIGHT JOINTS.  
  
WHERE SPECIFIED, ALL STORM DRAIN PIPE SHALL BE DUAL WALL HIGH DENSITY POLYPROPYLENE (HDPP), CORRUGATED EXTERIOR, SMOOTH WALL INTERIOR, WITH GASKETED JOINTS. PIPES OF A DIAMETER OF 30" OR GREATER SHALL BE TRIPLE WALL, CORRUGATED STRUCTURAL CORE, SMOOTH EXTERIOR, WITH DOUBLE GASKETED JOINTS.  
  
ALL CORRUGATED METAL STORM DRAIN PIPE (CMP) SHALL BE ALUMINIZED TYPE 2 CORRUGATED STEEL MANUFACTURED IN ACCORDANCE WITH THE REQUIREMENTS OF AASHTO M-36. THE PIPE SHALL BE MANUFACTURED FROM ALUMINIZED STEEL TYPE 2 MATERIAL CONFORMING TO THE REQUIREMENTS OF AASHTO M-274. ALL PIPE SHALL BE FURNISHED WITH PREROLLED ENDS AND SHALL BE JOINED WITH HUGGER BANDS. THE USE OF DIMPLE BANDS WILL NOT BE ALLOWED. PIPE THROUGH 24" DIAMETER SHALL BE 16 GAUGE, PIPE THROUGH 42" DIAMETER SHALL BE 14 GAUGE, PIPE THROUGH 54" DIAMETER SHALL BE 12 GAUGE.
- CONTRACTOR SHALL VERIFY THE APPROPRIATENESS OF ALL ELEVATIONS BEFORE INSTALLATION OF FACILITIES AND THAT THOSE ELEVATIONS CONTRIBUTE TO THE PROPER INTENDED PERFORMANCE OF THE INSTALLED FACILITIES.
- CATCH BASINS CAST-IN-PLACE SHALL CONFORM TO THE REQUIREMENTS OF NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES (LATEST EDITION) ARTICLES 840-1 THROUGH 840-3. CURB INLET CATCH BASIN SHALL CONFORM TO NCDOT STANDARD DETAILS 840.02 THROUGH 840.04. DROP INLETS SHALL CONFORM TO STANDARD DETAIL 840.14. JUNCTION BOXES SHALL CONFORM TO STANDARD DETAIL 840.31.
- CURB INLET FRAME, GRATE AND HOOD SHALL BE NEEHAH R-32330, PRODUCTS BY DEWEY BROS., U.S. FOUNDRY OR EQUAL. DROP INLET FRAME AND GRATE SHALL BE NEEHAH R-3339A OR EQUAL. FIELD INLET COVER SHALL CONFORM TO NCDOT STANDARD DETAIL 840.04, OPENING FACING UPSTREAM.
- CONCRETE AND MASONRY SHALL MEET THE REQUIREMENTS OF THE APPROPRIATE SECTION OF THE NCDOT STANDARD SPECIFICATIONS FOR ROAD AND STRUCTURES (LATEST EDITION). CONCRETE SHALL BE CLASS A OR B, 4000 PSI MINIMUM, MEETING THE REQUIREMENTS OF SECTION 1000, CONSTRUCTED IN ACCORDANCE WITH SECTION 825. MASONRY SHALL MEET THE REQUIREMENTS OF SECTION 1040, CONSTRUCTED IN ACCORDANCE WITH SECTION 830 AND/OR 834.
- TOPS OF PROPOSED FRAMES AND GRATES SHALL BE FLUSH WITH FINISHED GRADE. ALL STORM DRAIN BOXES AND MANHOLES FOUR (4) FEET AND OVER IN DEPTH SHALL HAVE STEPS DIRECTLY BENEATH THE OPENING.
- TINDALL PRE CAST CONCRETE BOXES ARE ACCEPTABLE ALTERNATIVES FOR PROPOSED CATCH BASINS WHERE APPROVED BY THE ENGINEER. "WAFFLE" BOXES MAY ONLY BE USED WHERE STEPS ARE NOT REQUIRED AND ONLY UPON THE APPROVAL OF THE ENGINEER.

**NOTE-2**

**NPDES STORM WATER PHASE II  
REQUIREMENTS FOR CONSTRUCTION SITES**

FEDERAL NPDES STORM WATER PHASE II REQUIREMENTS SHALL BE MET BY THE CONTRACTOR FOR ALL CONSTRUCTION SITES LARGER THAN 1 ACRE EFFECTIVE AUGUST 3, 2011. THESE REQUIREMENTS ARE SUMMARIZED AS FOLLOWS:

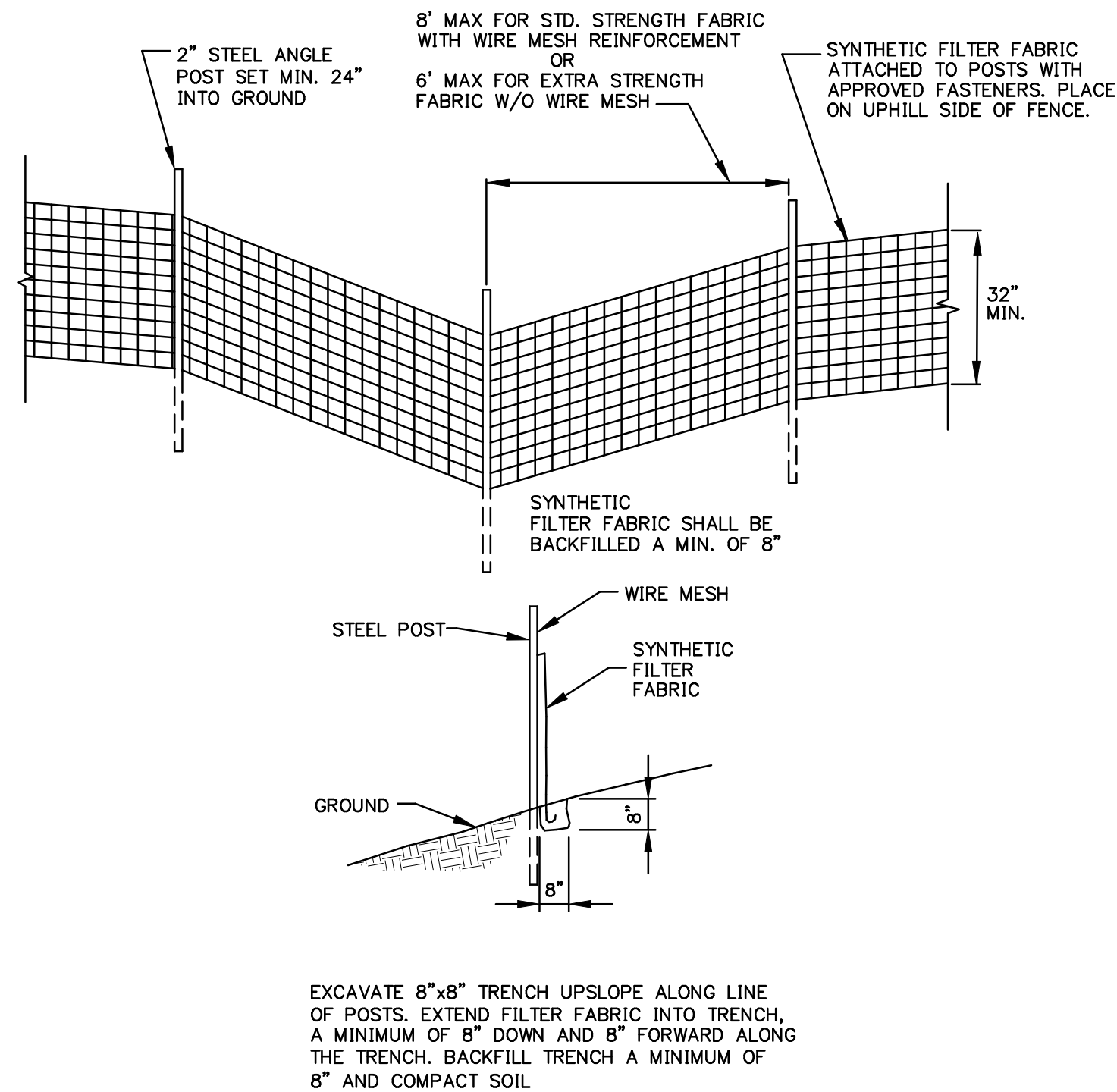
- IMPLEMENT THE APPROVED EROSION AND SEDIMENTATION CONTROL PLAN AND KEEP A COPY OF THE PLAN ON SITE. DEVIATION FROM THE APPROVED EROSION AND SEDIMENTATION CONTROL PLAN WILL BE CONSIDERED A VIOLATION OF THE FEDERAL NPDES GENERAL PERMIT.
- PREVENT SPILLING OF FUELS, LUBRICANTS, COOLANTS, HYDRAULIC FLUIDS, AND ANY OTHER PETROLEUM PRODUCTS ONTO THE GROUND OR INTO SURFACE WATERS. DISPOSE OF SPENT FUELS APPROPRIATELY.
- USE HERBICIDES, PESTICIDES, AND FERTILIZER IN A MANNER CONSISTENT WITH THE FEDERAL INSECTICIDE, FUNGICIDE AND RODENTICIDE ACT AND IN ACCORDANCE WITH LABEL RESTRICTIONS.
- CONTROL MANAGEMENT AND DISPOSAL OF LITTER AND SANITARY WASTE FROM THE SITE SO THAT NO ADVERSE IMPACTS TO WATER QUALITY OCCUR.
- INSPECT ALL EROSION AND SEDIMENTATION CONTROL FACILITIES EVERY SEVEN CALENDAR DAYS (TWICE IN SEVEN CALENDAR DAYS FOR STORM WATER DISCHARGES TO STREAMS ON THE LATEST EPA-APPROVED 303(d) LIST) AND WITHIN 24 HOURS OF ANY STORM EVENT OF MORE THAN 0.5 INCH OF RAIN IN A 24-HOUR PERIOD. MAINTAIN A RAIN GAUGE ON SITE AND KEEP A RECORD OF THE RAINFALL AMOUNTS AND DATES.
- OBSERVE STORM WATER RUNOFF DISCHARGES AND LOOK FOR CLARITY, FLOATING SOLIDS, SUSPENDED OILS, OIL SHEEN AND OTHER OBVIOUS INDICATORS OF POLLUTION AND EVALUATE THE EFFECTIVENESS OF THE EROSION AND SEDIMENTATION CONTROL MEASURES. IF SEDIMENTATION IS LEAVING THE DISTURBED AREA, TAKE IMMEDIATE ACTION TO CONTROL THE DISCHARGE.
- KEEP A RECORD OF INSPECTIONS. RECORD ANY VISIBLE SEDIMENTATION FOUND OUTSIDE THE DISTURBED LIMIT AND RECORD MEASURES TAKEN TO CLEAN UP THE SEDIMENT. MAKE THESE RECORDS AVAILABLE TO THE DIVISION OF WATER QUALITY OR ITS AUTHORIZED AGENT UPON REQUEST.
- MAINTAIN EROSION AND SEDIMENT CONTROL MEASURES TO KEEP THEM OPERATING AT OPTIMUM EFFICIENCY. CONTACT THE ENGINEER FOR A COPY OF THE GENERAL PERMIT TO DISCHARGE STORM WATER UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM.  
  
VIOLATIONS OF THE NPDES STORM WATER RULES CONSTITUTE A VIOLATION OF THE FEDERAL CLEAN WATER ACT AND ARE SUBJECT TO CIVIL PENALTIES OF UP TO \$27,000 PER DAY. UNDER STATE LAW, A DAILY CIVIL PENALTY OF \$10,000 PER VIOLATION CAN BE ASSESSED FOR VIOLATION OF TERMS OF THE PERMIT.
- REVEGETATION OF SLOPES 3:1 OR GREATER, INCLUDING PERIMETER AREAS, ARE REQUIRED WITHIN 7 CALENDAR DAYS.

**NOTE-6**

**GENERAL CONSTRUCTION NOTES CONT'D.**

- CONTRACTOR SHALL PROVIDE THE OWNER AND THE LOCAL REGULATORY AGENCY WITH PROOF OF ACTIVE GRADING PERMITS FOR ANY BORROW OR WASTE SITES TO BE USED, PRIOR TO CONSTRUCTION.
- THE CONTRACTOR SHALL ASSUME MAINTENANCE OF ALL EROSION CONTROL FACILITIES LEFT ON SITE BY PREVIOUS CONTRACTORS IN THE CASE OF PHASED PROJECTS WHEN SPECIFIED BY THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL MAINTAIN, ADD TO AND/OR ADJUST ALL FACILITIES TO ASSURE MAXIMUM PROTECTION OF THE SITE.
- SEED AND MULCH DENUDE AREA WITHIN 14 DAYS ON DISTURBED FLAT AREAS AND 7 DAYS ON ALL PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL. GROUND COVER SHALL BE REQUIRED AS SOON AS PRACTICABLE BUT IN ANY EVENT WITHIN 14 (OR 7) CALENDAR DAYS FROM THE LAST LAND-DISTURBING ACTIVITY.
- THE LOCATIONS OF ALL UTILITIES SHOWN ON THESE PLANS ARE BASED ON THE AVAILABLE INFORMATION. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF UTILITIES WITH THE UTILITY OWNERS PRIOR TO CONSTRUCTION.
- ACCESS TO UTILITIES, FIRE HYDRANTS, STREET LIGHTING, ETC., SHALL REMAIN UNDISTURBED, UNLESS COORDINATED WITH RESPECTIVE UTILITY.
- CONTRACTOR IS RESPONSIBLE FOR DAMAGE TO ANY EXISTING ITEM AND/OR MATERIAL INSIDE OR OUTSIDE THE CONTRACT LIMITS DUE TO CONSTRUCTION OPERATIONS.
- THE GENERAL CONTRACTOR SHALL REMOVE ALL TRASH AND DEBRIS FROM THE SITE UPON COMPLETION OF THE PROJECT AND AT LEAST ONCE A WEEK DURING CONSTRUCTION.
- DO NOT SCALE THIS DRAWING AS IT IS A REPRODUCTION AND SUBJECT TO DISTORTION.
- THE CONTRACTOR SHALL VERIFY ALL LOCATION AND ELEVATION OF ALL UNDERGROUND UTILITIES. THE LOCATION OF ALL EXISTING UTILITIES ARE NOT NECESSARILY SHOWN ON THE PLANS AND WHERE SHOWN ARE ONLY APPROXIMATE. THE CONTRACTOR SHALL ON HIS INITIATIVE AND AT NO EXTRA COST HAVE LOCATED ALL UNDERGROUND LINES AND STRUCTURES AS NECESSARY. NO CLAIMS FOR DAMAGES OR EXTRA COMPENSATION SHALL ACCRUE TO THE CONTRACTOR FROM THE PRESENCE OF SUCH PIPE, OTHER OBSTRUCTIONS OR FROM ANY DELAY DUE TO REMOVAL OR REARRANGEMENT OF THE SAME. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO UNDERGROUND STRUCTURES. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING ALL NON-SUBSCRIBING UTILITIES. THE CONTRACTOR(S) SHALL CONTACT NO "ONE CALL" AT (800) 632-4949 FOR ASSISTANCE IN LOCATING EXISTING UTILITIES. CALL AT LEAST 48 HOURS PRIOR TO ANY DIGGING.
- THE CONTRACTOR SHALL MAINTAIN AN "AS-BUILT" SET OF DRAWINGS TO RECORD THE EXACT LOCATION OF ALL PIPING PRIOR TO CONCEALMENT. DRAWINGS SHALL BE GIVEN TO THE OWNER UPON COMPLETION OF THE PROJECT WITH A COPY OF THE TRANSMITTAL LETTER TO THE ENGINEER.
- PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL REVIEW ALL PLANS AND SPECIFICATIONS AND THE JOB SITE. THE CONTRACTOR SHALL NOTIFY THE OWNER AND THE ENGINEER WHO PREPARED THE PLANS OF ANY DISCREPANCIES THAT MAY REQUIRE MODIFICATIONS TO THESE PLANS OR OF ANY FIELD CONFLICTS.
- ALL PERMITS RELATIVE TO THE PROJECT MUST BE OBTAINED, PRIOR TO CONSTRUCTION. ALL CONSTRUCTION TO BE IN ACCORDANCE WITH PERMITS ISSUED AND APPLICABLE STATE, COUNTY AND LOCAL CODES.
- CONTRACTOR AGREES THAT IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, CONTRACTOR WILL BE REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY. THE REQUIREMENT SHALL BE MADE TO APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS. CONTRACTOR FURTHER AGREES TO DEFEND, INDEMNIFY, AND HOLD THE OWNER AND DESIGN PROFESSIONAL HARMLESS OF ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, ACCEPTING LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER OR DESIGN PROFESSIONAL.
- ALL RECOMMENDATIONS/REQUIREMENTS OUTLINED IN THE SOILS REPORT AND ADDENDUMS TO THE SOILS REPORT CONTAINED IN THE CONTRACT DOCUMENTS SHALL BE INCORPORATED INTO THE EARTHWORK AND RELATED SPECIFICATIONS FOR THIS PROJECT, WHERE PROVIDED.

**NOTE-2A**



- NOTES:
- FILTER BARRIERS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND DAILY DURING PROLONGED RAINFALL. REPAIR SHALL BE MADE AS NECESSARY.
  - FABRIC SHALL BE REPLACED PROMPTLY IF FOUND TO BE IN DISREPAIR.
  - SEDIMENT DEPOSITS SHALL BE REMOVED AFTER EACH STORM EVENT AND WHEN DEPOSITS REACH APPROXIMATELY 1/3 HEIGHT OF BARRIER.
  - FOR REPAIR OF FAILURES, USE WASHED STONE.

**SILT FENCE**

NOT TO SCALE

**EC-36**

**Davis Civil Solutions, PA**  
 Site Infrastructure - Engineering/Planning  
 134-A Christie Highway - Ashfield, North Carolina 28683  
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PROFESSIONAL SEAL  
 12296  
 STATE OF NORTH CAROLINA  
 CIVIL ENGINEER  
 DEAN

**SITE DEVELOPMENT PLAN  
FOR  
KILN DRYING SYSTEMS**  
 HENDERSON COUNTY, NORTH CAROLINA

**DETAILS**

Job No.: 14126  
 Date: March, 2014  
 Scale: NTS  
 Revision:

Sheet  
**D1**



## SEEDING NOTES

### PERMANENT SEEDING

#### LAWN SEEDING MIXTURE

SPECIES	RATE (LB/ACRE)
KENTUCKY BLUEGRASS (20%)	260 LBS.
REBEL FESCUE (80%)	

#### SEEDING DATES

MOUNTAINS	MARCH 15 – MAY 15
	AUGUST 15 – OCTOBER 15

#### SOIL AMENDMENTS

FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 2,000 LB/ACRE GROUND AGRICULTURAL LIMESTONE AND 750 LB/ACRE 10-10-10 FERTILIZER.

#### MULCH

APPLY 4,000 LB/ACRE STRAW. ANCHOR STRAW BY TACKING WITH ASPHALT, NETTING, OR A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.

#### MAINTENANCE

RE-FERTILIZE IF GROWTH IS NOT FULLY ADEQUATE. RE-SEED, RE-FERTILIZE AND MULCH IMMEDIATELY FOLLOWING EROSION OR OTHER DAMAGE.

#### SLOPE SEEDING MIXTURE

SPECIES	RATE (LB/ACRE)
VALDA HARD FESCUE	20 LBS.
ASTRO TALL FESCUE	8 LBS.
PENLAWN RED FESCUE	25 LBS.
PERENNIAL RYE	25 LBS.
KEN-BLU KENTUCKY BLUEGRASS	1.5 LBS.

#### SEEDING DATES

MOUNTAINS	MARCH 15 – MAY 15
	AUGUST 15 – OCTOBER 15

#### SOIL AMENDMENTS

FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 2,000 LB/ACRE GROUND AGRICULTURAL LIMESTONE AND 400 LB/ACRE 18-46-50 FERTILIZER.

#### MULCH

APPLY 4,000 LB/ACRE STRAW. ANCHOR STRAW BY TACKING WITH ASPHALT.

#### MAINTENANCE

RE-FERTILIZE IF GROWTH IS NOT FULLY ADEQUATE. RE-SEED, RE-FERTILIZE AND MULCH IMMEDIATELY FOLLOWING EROSION OR OTHER DAMAGE.

### TEMPORARY SEEDING FOR SUMMER

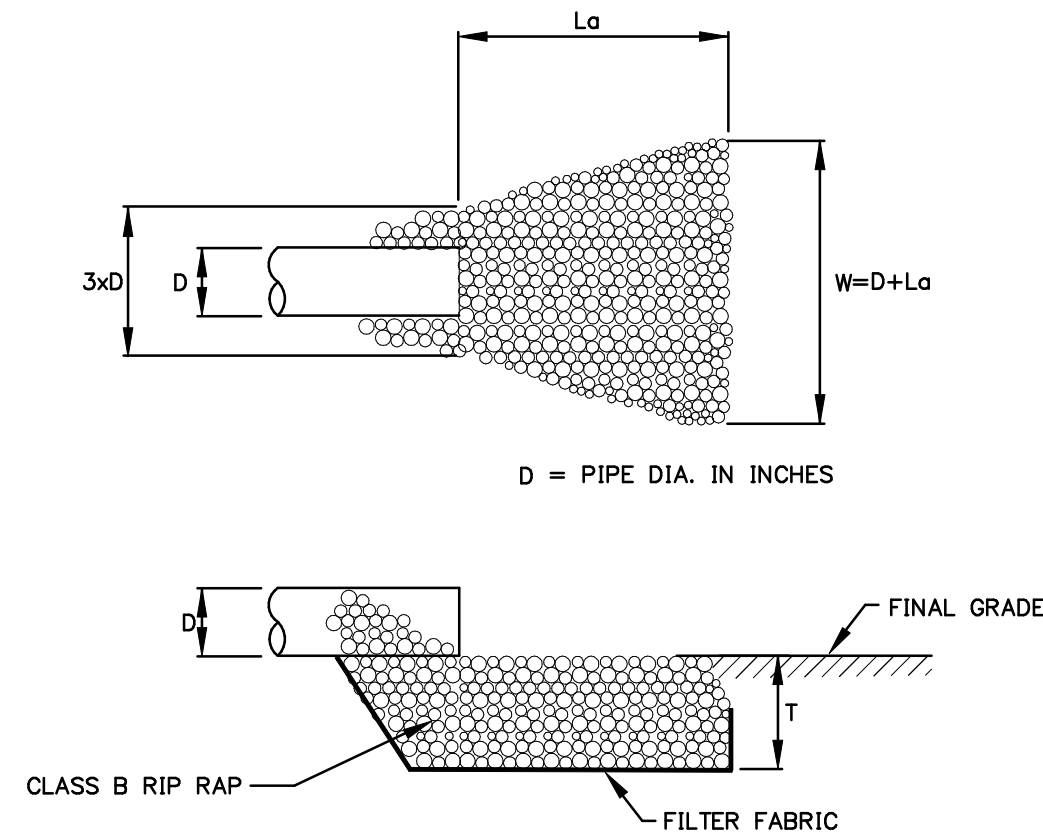
#### SEEDING MIXTURE

SPECIES	RATE (LB/ACRE)
GERMAN MILLET	40 LBS.

#### SEEDING DATES

MOUNTAINS	MAY 15 – AUGUST 15
PIEDMONT	MAY 1 – AUGUST 15
COASTAL PLAIN	APRIL 15 – AUGUST 15

**NOTE-14**



RIPRAP APRON SIZING (PER FIG. 8.06a)

OUTLET No.	PIPE DIAMETER (Do)	3 x Do	APRON LENGTH (Lp)	APRON WIDTH (W=D+Lp)	APRON THICKNESS (T=1.5xamax)	STONE DIAMETER (amax) (1/2 Do(1.5))
1	15"	3.75'	10'	11.25'	7"	4.5"

FIG. 8.06A REQUIRES A 75' APRON; US ARMY CORPS OF ENGINEERING AND NC WILDLIFE COMMISSION ASKS THAT NO RIPRAP BE PLACED IN LIVE STREAM. THE DESIGN OF THIS STREAM PIPE WILL INCLUDE CONCRETE HEADWALLS AND BURYING THE PIPE INVERT 6"-12" BELOW THE STREAM BED, WITHOUT RIPRAP.

### RIPRAP AT PIPE OUTLET

NOT TO SCALE

**EC-30**

## SEEDING NOTES

### TEMPORARY SEEDING FOR SUMMER

#### SOIL AMENDMENTS

FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 2,000 LB/ACRE GROUND AGRICULTURAL LIMESTONE AND 750 LB/ACRE 10-10-10 FERTILIZER.

#### MULCH

APPLY 4,000 LB/ACRE STRAW. ANCHOR STRAW BY TACKING WITH ASPHALT, NETTING, OR A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.

#### MAINTENANCE

RE-FERTILIZE IF GROWTH IS NOT FULLY ADEQUATE. RE-SEED, RE-FERTILIZE AND MULCH IMMEDIATELY FOLLOWING EROSION OR OTHER DAMAGE.

### TEMPORARY SEEDING FOR FALL

#### SEEDING MIXTURE

SPECIES	RATE (LB/ACRE)
RYE (GRAIN)	260 LBS.

#### SEEDING DATES

MOUNTAINS	AUGUST 15 – DECEMBER 15
PIEDMONT	AUGUST 15 – DECEMBER 15
COASTAL PLAIN	AUGUST 15 – DECEMBER 30

#### SOIL AMENDMENTS

FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 2,000 LB/ACRE GROUND AGRICULTURAL LIMESTONE AND 1,000 LB/ACRE 10-10-10 FERTILIZER.

#### MULCH

APPLY 4,000 LB/ACRE STRAW. ANCHOR STRAW BY TACKING WITH ASPHALT, NETTING, OR A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.

#### MAINTENANCE

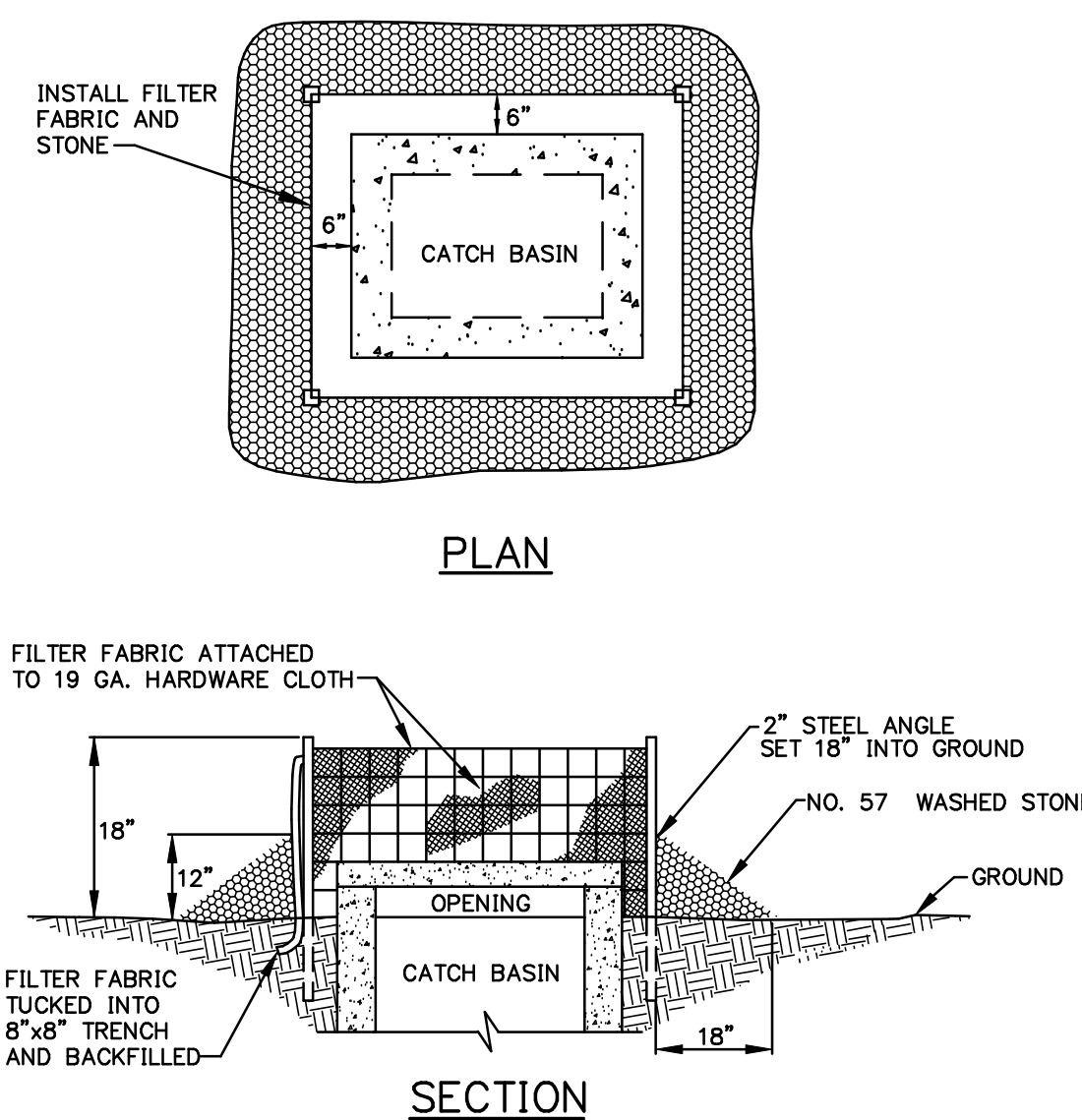
REPAIR AND RE-FERTILIZE DAMAGED AREAS IMMEDIATELY. TOPDRESS WITH 50 LB/ACRE NITROGEN IN MARCH. IF IT IS NECESSARY TO EXTEND TEMPORARY COVER BEYOND JUNE 15, OVERSEED WITH 50 LB/ACRE KOBE (PIEDMONT AND COASTAL PLAIN) OR KOREAN (MOUNTAINS) LESPEDEZA IN LATE FEBRUARY OR EARLY MARCH.

### TEMPORARY SEEDING FOR WINTER & EARLY SPRING

#### SEEDING MIXTURE

SPECIES	RATE (LB/ACRE)
RYE (GRAIN)	120 LBS.
ANNUAL LESPEDEZA (KOBE IN PIEDMONT & COASTAL PLAIN, KOREAN IN MOUNTAINS)	50 LBS.

**NOTE-15**



#### NOTES:

- ATTACH WIRE AND FABRIC TO POSTS ON OUTSIDE OF FENCE WITH APPROVED FASTENERS.
- FILTERS SHALL BE INSPECTED AFTER EVERY RAIN AND REPAIRED AS REQUIRED.
- SEDIMENT SHALL BE REMOVED AFTER DEPOSITS REACH 1/3 HEIGHT OF BARRIER.

### CATCH BASIN PROTECTION

NOT TO SCALE

**EC-2**

## SEEDING NOTES

### TEMPORARY SEEDING FOR WINTER & EARLY SPRING

#### SEEDING DATES

MOUNTAINS (ABOVE 2,500')	FEBRUARY 15 – MAY 15
MOUNTAINS (BELOW 2,500')	FEBRUARY 1 – MAY 1
PIEDMONT	JANUARY 1 – MAY 1
COASTAL PLAIN	DECEMBER 1 – APRIL 15

#### SOIL AMENDMENTS

FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 2,000 LB/ACRE GROUND AGRICULTURAL LIMESTONE AND 750 LB/ACRE 10-10-10 FERTILIZER.

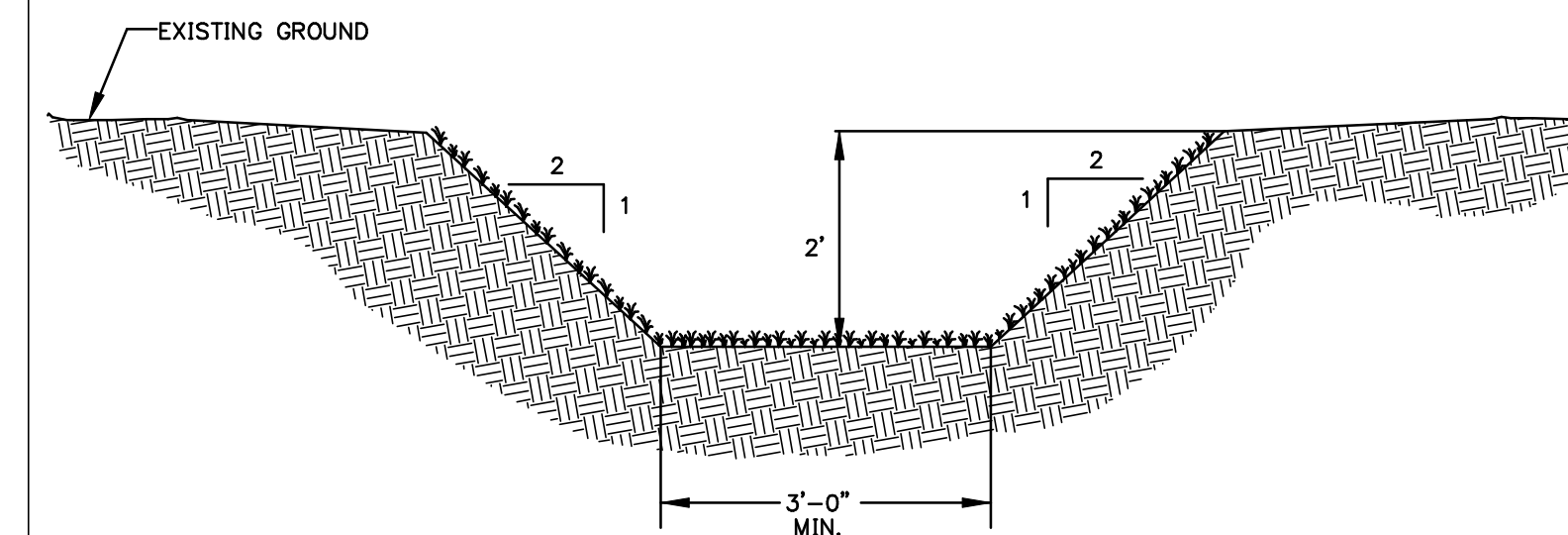
#### MULCH

APPLY 4,000 LB/ACRE STRAW. ANCHOR STRAW BY TACKING WITH ASPHALT, NETTING, OR A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.

#### MAINTENANCE

RE-FERTILIZE IF GROWTH IS NOT FULLY ADEQUATE. RE-SEED, RE-FERTILIZE AND MULCH IMMEDIATELY FOLLOWING EROSION OR OTHER DAMAGE.

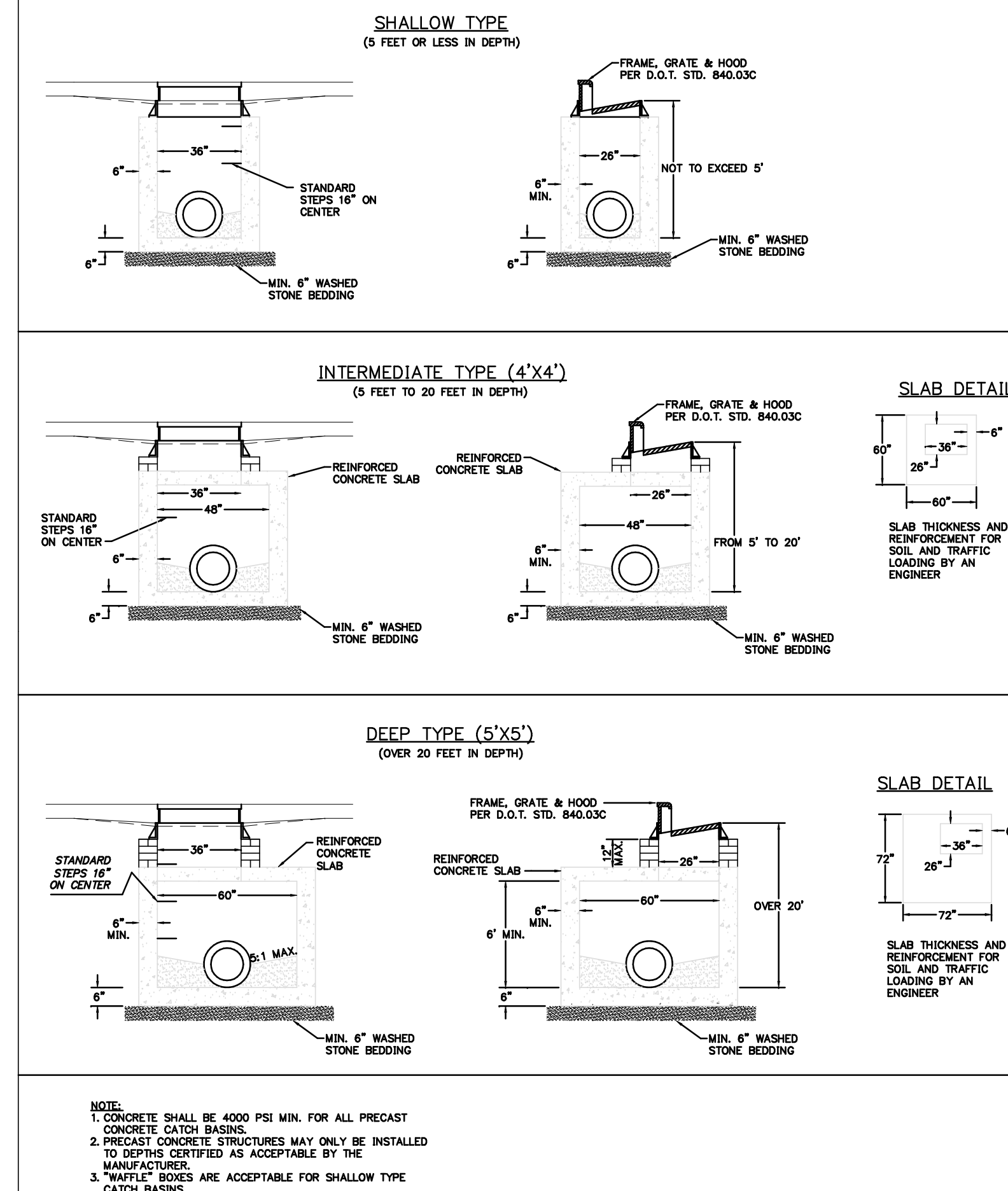
**NOTE-16**



### GRASS LINED DITCH

NOT TO SCALE

**EC-52**



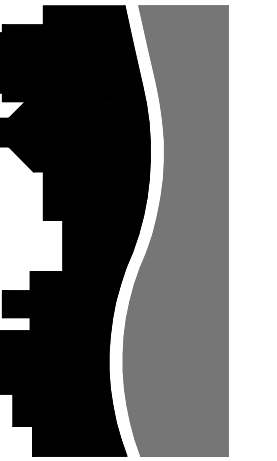
#### NOTES:

- CONCRETE SHALL BE 4000 PSI MIN. FOR ALL PRECAST CONCRETE CATCH BASINS.
- PRECAST CONCRETE STRUCTURES MAY ONLY BE INSTALLED TO DEPTHS CERTIFIED AS ACCEPTABLE BY THE MANUFACTURER.
- "WAFLE" BOXES ARE ACCEPTABLE FOR SHALLOW TYPE CATCH BASINS.

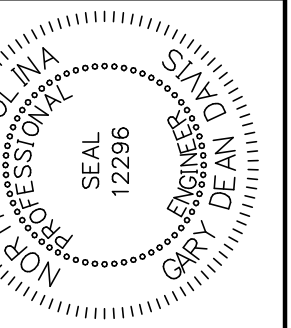
### PRECAST CONCRETE CATCH BASIN

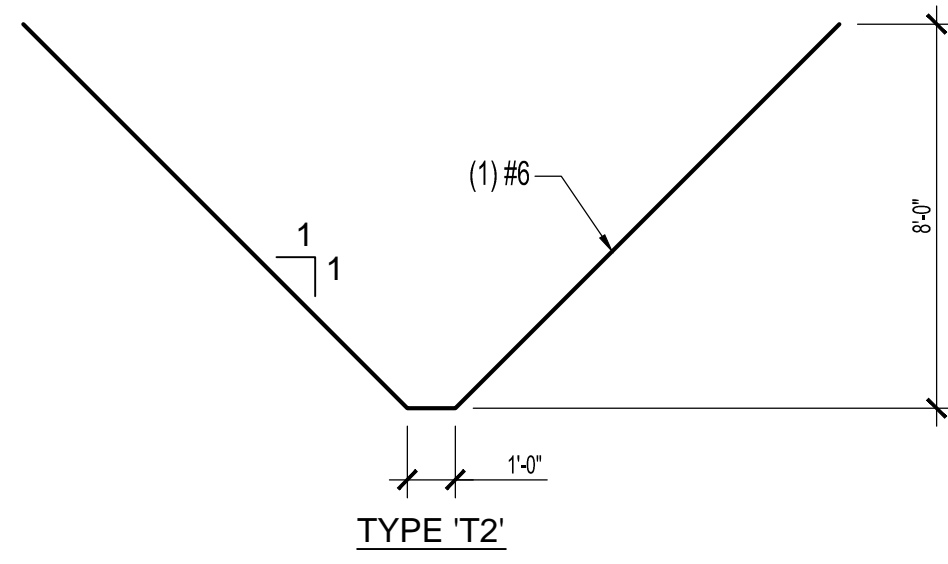
NOT TO SCALE

**SWTR-17**

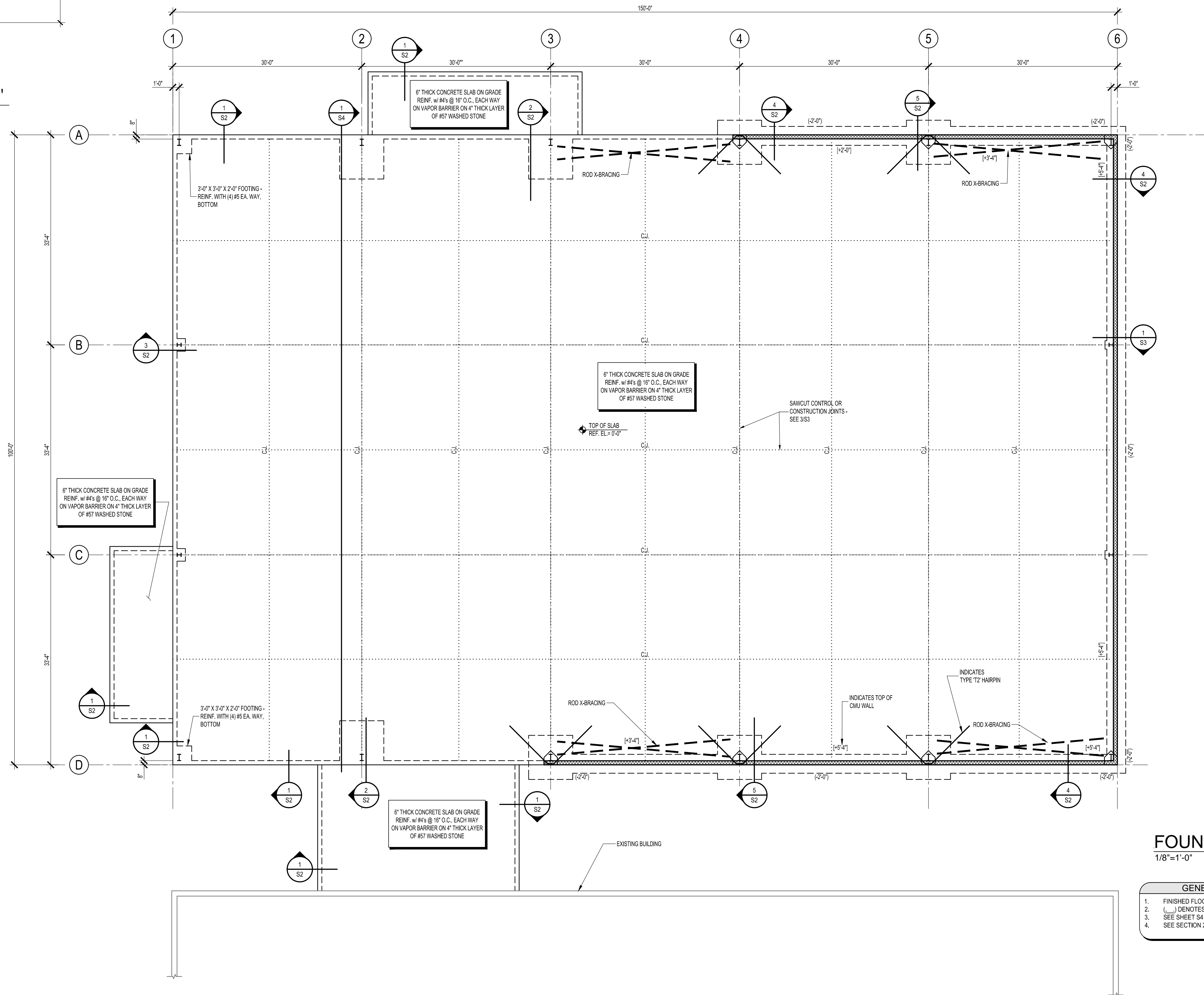


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1 HAIRPIN TYPE 'T2'



NOTE:  
FOUNDATIONS MAY NOT BE PLACED UNTIL  
THE ENGINEER OF RECORD HAS RECEIVED  
AND REVIEWED THE DESIGN REACTIONS AS  
SUPPLIED BY THE METAL BUILDING  
MANUFACTURER.

**FOUNDATION PLAN**  
1/8"=1'-0"

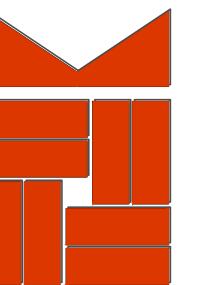


**GENERAL FOUNDATION PLAN NOTES**

1. FINISHED FLOOR REFERENCE ELEVATION = 0'-0" = SITE ELEVATION = +2097.00'.
2. ( ) DENOTES TOP OF FOOTING REFERENCE ELEVATION.
3. SEE SHEET S4 FOR STRUCTURAL NOTES.
4. SEE SECTION 2/S3 FOR FOOTING STEP DETAIL.



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**KDS Warehouse II**  
CHARLES MONIOTTE  
Etowah, North Carolina

**FOUNDATION PLAN**

Date: 04-02-2014

Drawn By: GKA

Designed By: EJK

Reviewed By: EJK

Sheet No.

**S1**





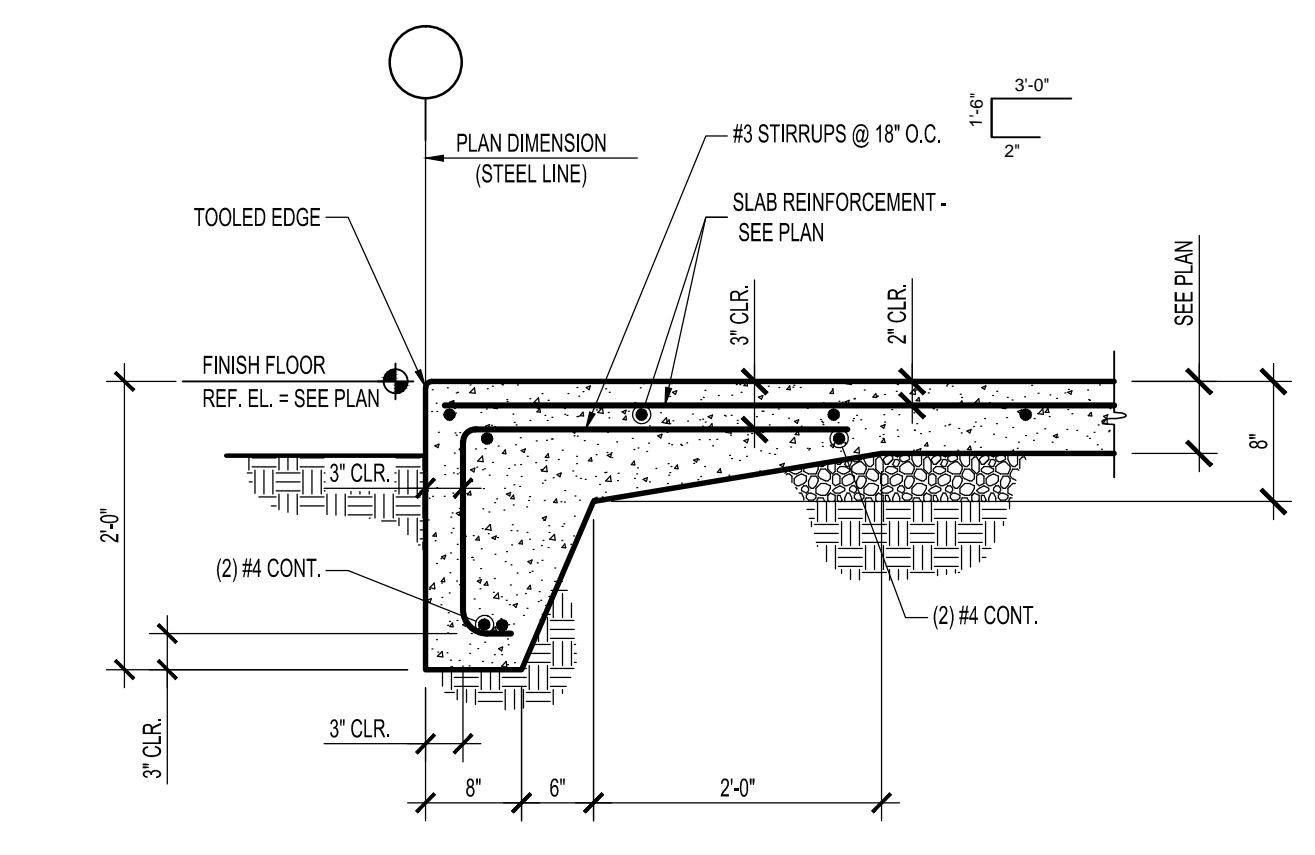
**KLOESEL Engineering, PA**  
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 Asheville, North Carolina 28801  
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**KDS Warehouse II**  
 CHARLES MONIOTTE  
 Etowah, North Carolina

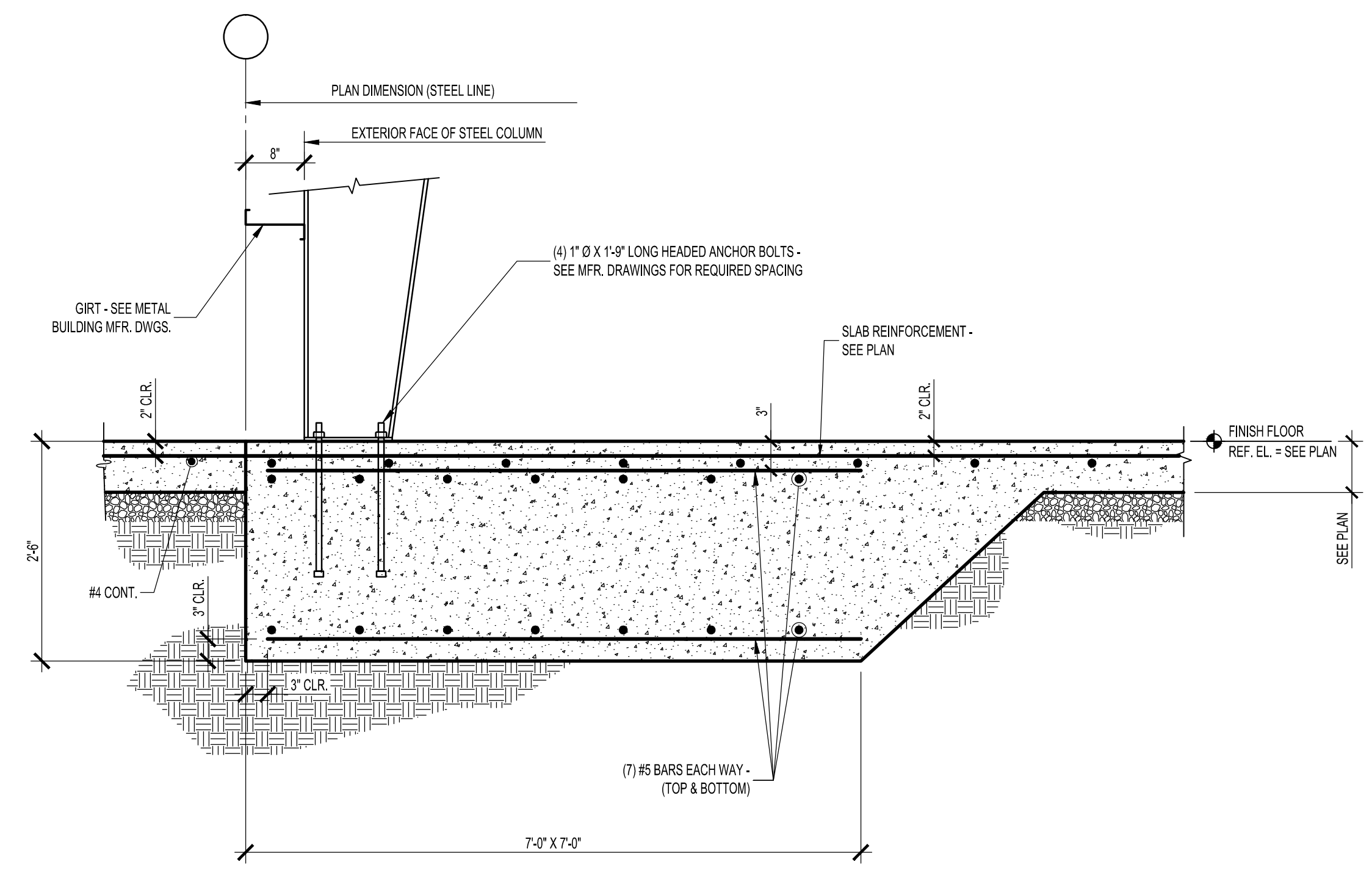
**FOUNDATION DETAILS**

Date: 04-02-2014  
 Drawn By: GKA  
 Designed By: EJK  
 Reviewed By: EJK

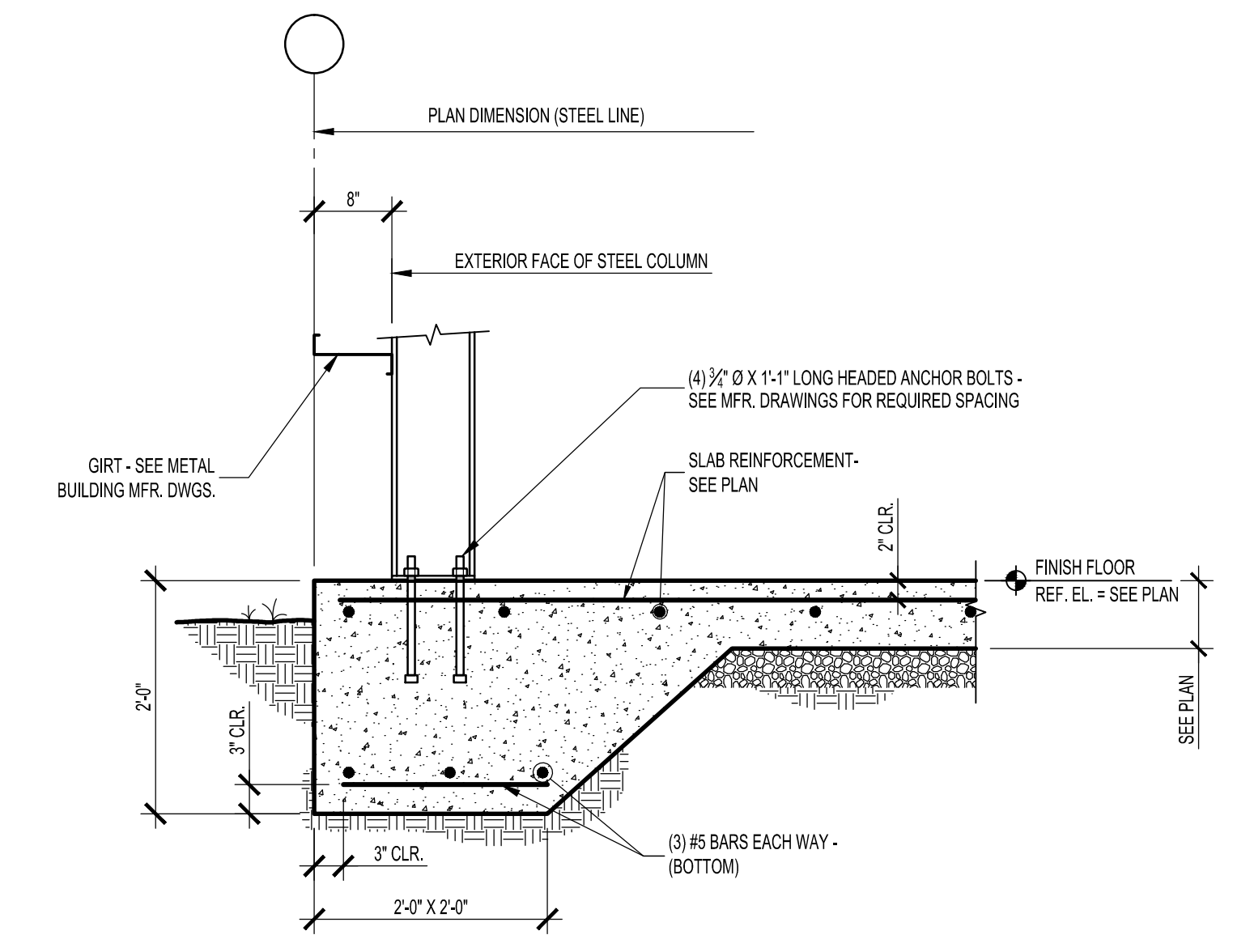
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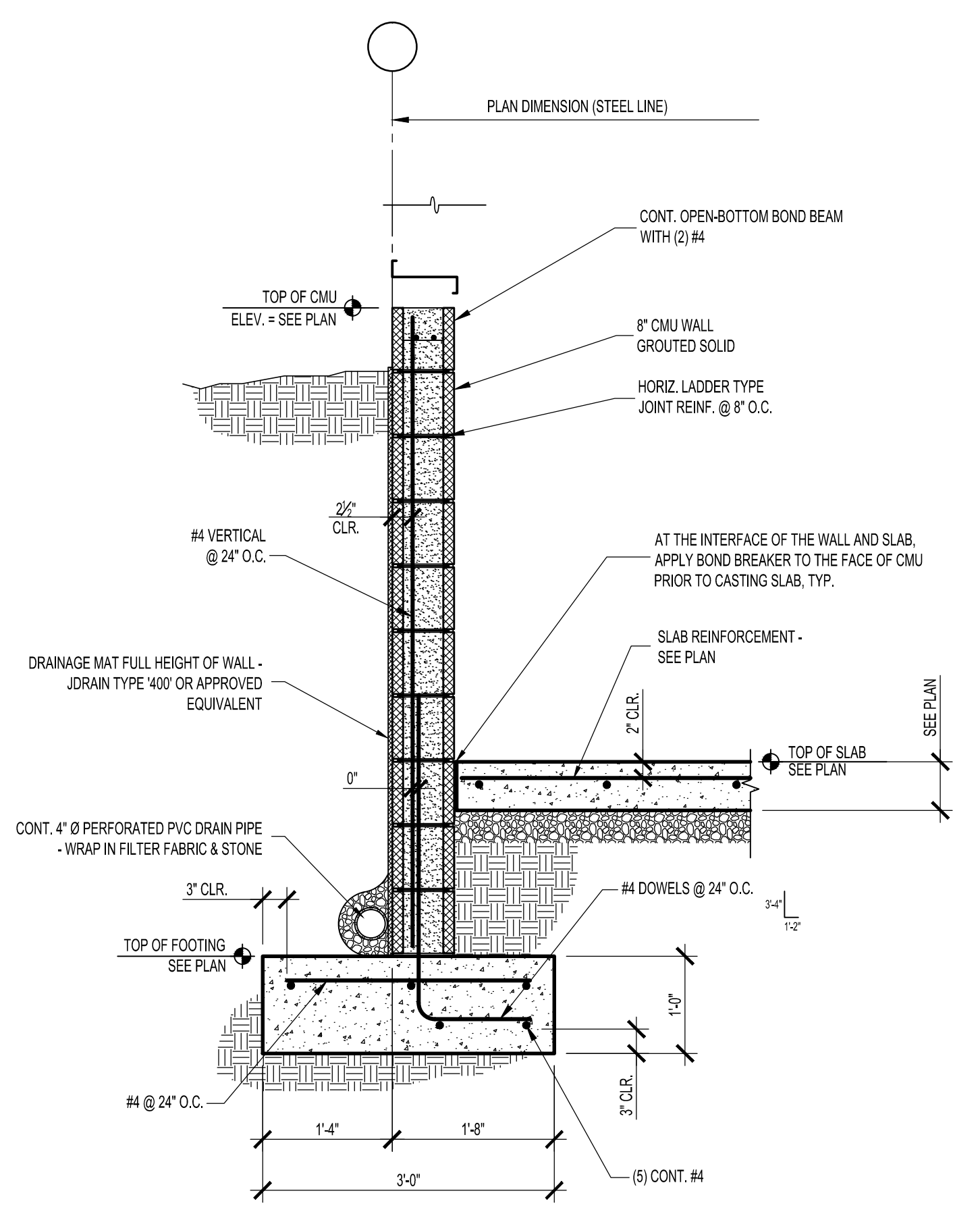
**1 THICKENED SLAB EDGE**  
 3/4 S2  
 00016



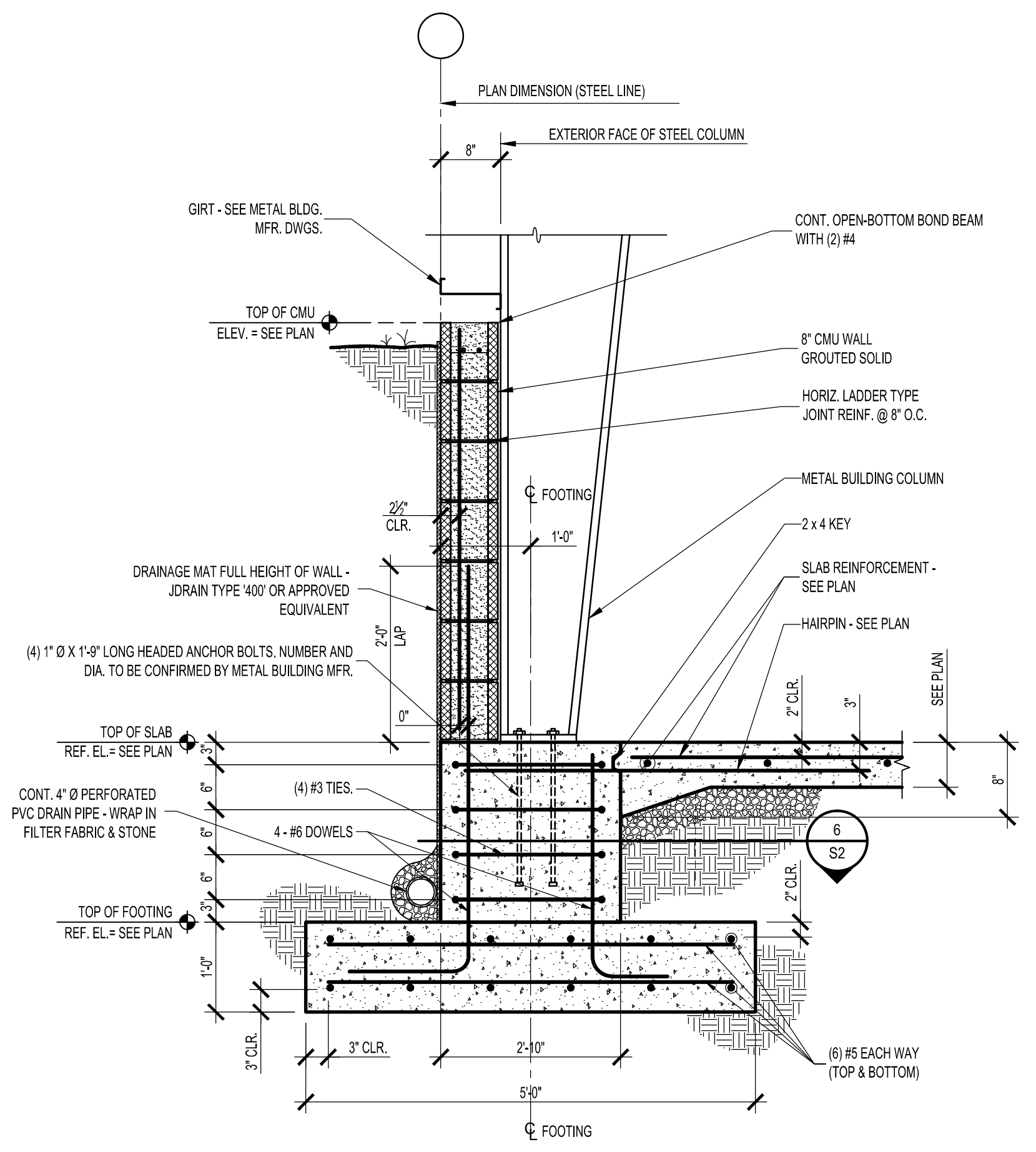
**2 SECTION @ SIDE WALL COLUMNS**  
 3/4 S2  
 00000



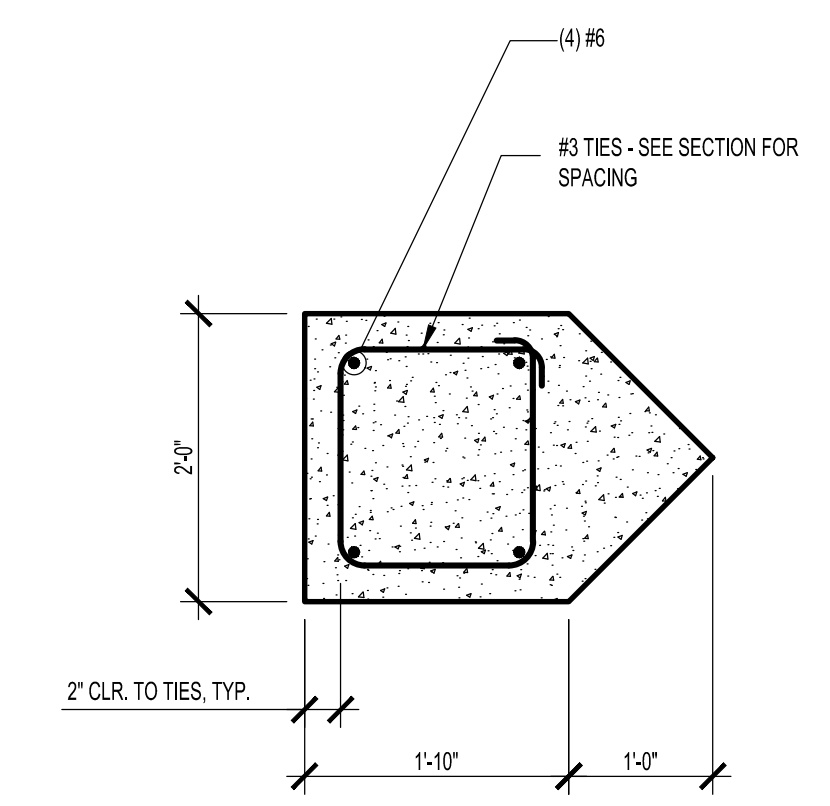
**3 SECTION @ END WALL COLUMN**  
 3/4 S2  
 00000



**4 SECTION**  
 3/4 S2  
 00000



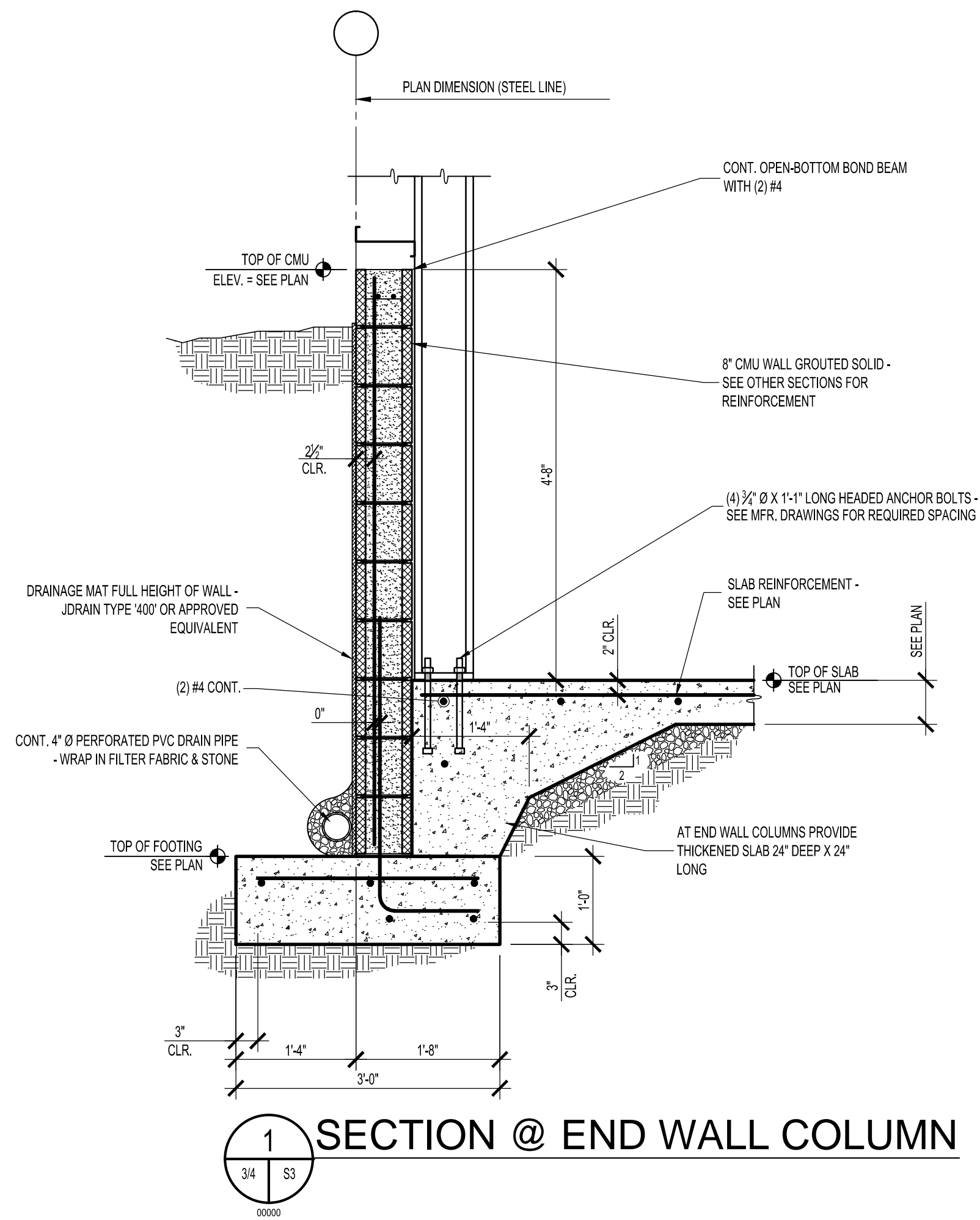
**5 SECTION THRU SIDE WALL COLUMN FOOTING**  
 3/4 S2  
 00000



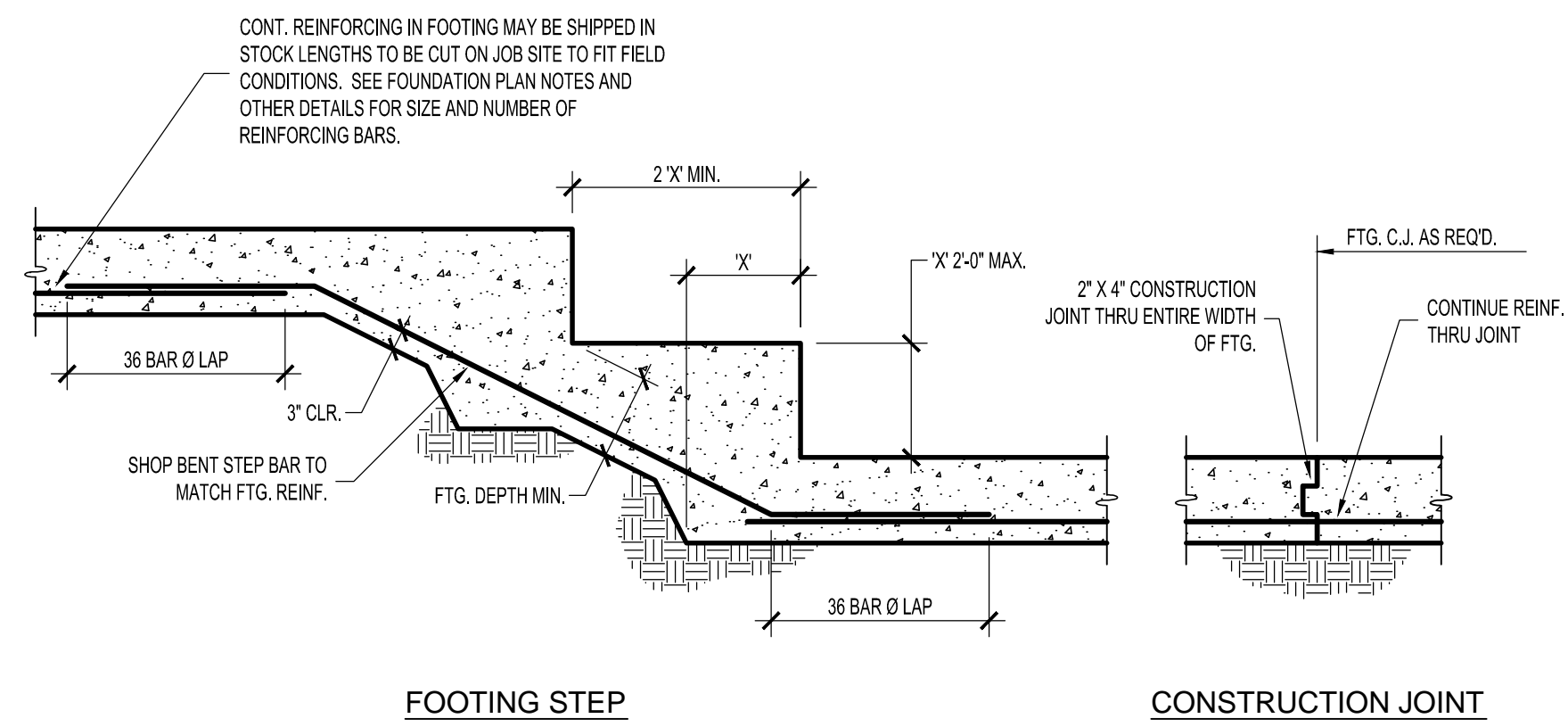
**6 PLAN DETAIL**  
 3/4 S2  
 00000

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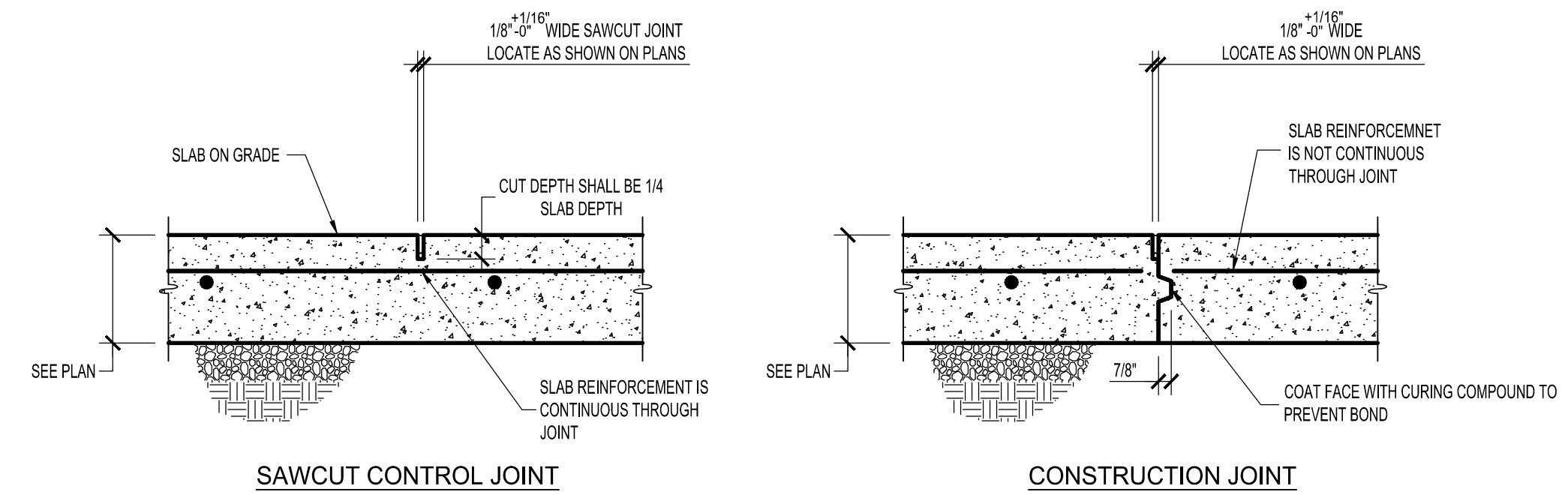




1 SECTION @ END WALL COLUMN



2 TYPICAL FOOTING STEP & FOOTING CONSTRUCTION JOINT



CONTROL AND CONSTRUCTION JOINT NOTES

- SAWCUT JOINTS AT CONTROL JOINTS SHALL BE MADE AS SOON AS THE CONCRETE HAS HARDENED SUFFICIENTLY TO PREVENT RAVELING OUT OF THE AGGREGATE AND DAMAGE TO THE EDGES, BUT NO LATER THAN 24 HOURS AFTER FINISHING OF THE SLAB SURFACE HAS BEEN COMPLETED.
- SAWCUT JOINTS SHALL BE AT ALL CONSTRUCTION JOINTS. JOINTS SHALL BE SAWCUT WHEN CONTROL JOINTS ARE SAWCUT.

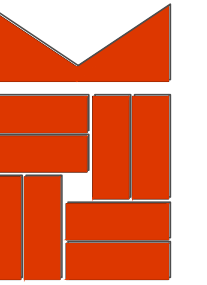
NOTE

FORM KEYWAY USING WOOD FORM NAILED TO BULKHEAD "DO NOT USE METAL KEYWAY"

3 TYPICAL SLAB ON GRADE JOINT DETAILS



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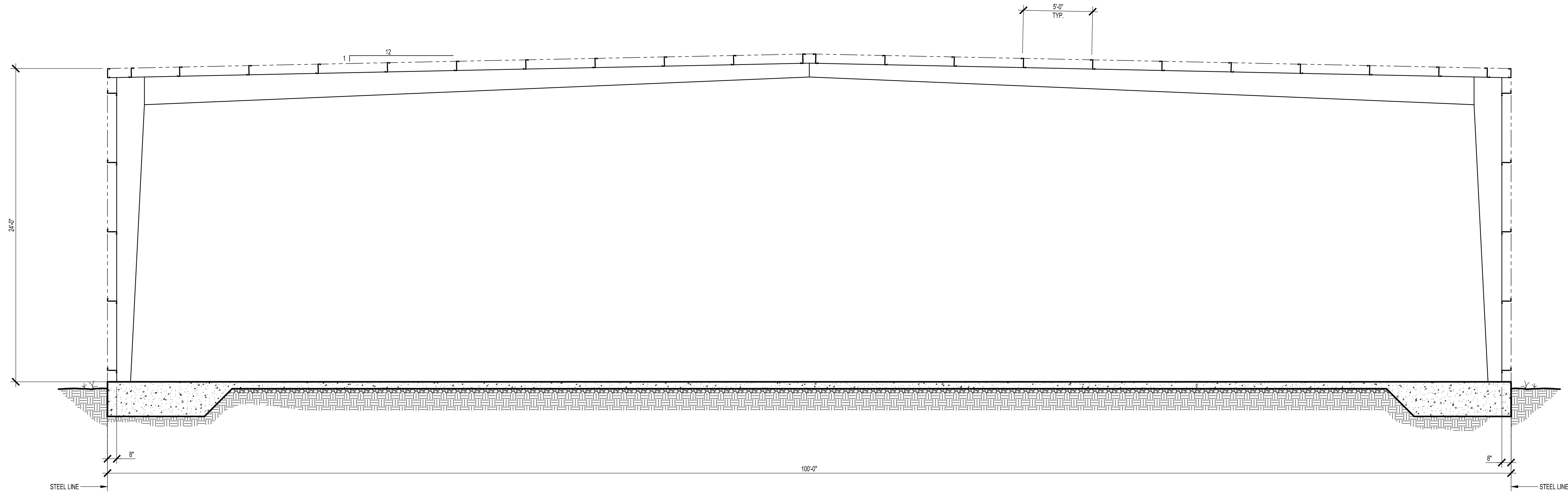
**KDS Warehouse II**  
 CHARLES MONIOTTE  
 Etowah, North Carolina

**FOUNDATION DETAILS**

Date: 04-02-2014  
 Drawn By: GKA  
 Designed By: EJK  
 Reviewed By: EJK

Sheet No.

**S3**



1 TRANSVERSE BLDG. SECTION

STRUCTURAL NOTES for the Phase II FOR KDS, INC.

A. GENERAL

- The structure is designed in accordance with the North Carolina State Building Code – 2009 Edition (2006 International Building Code with current North Carolina amendments).
- The design loads are as follows:

Live Load		As Required by NCSBC
Roof (Typical, U.O.N.)	250	psf
Snow Load		
Ground Snow Load $P_g$	20	psf
Flat roof Snow Load $P_f$	20	psf
Snow Exposure Factor $C_e$	1.0	
Snow Load Importance Factor $I$	1.0	
Thermal Factor $C_t$	1.1	
Wind Load		
Basic Wind Speed $V_{3s}$	90	mph
Wind Importance Factor	1.0	
Building Category	II	
Wind Exposure	B	
Internal Pressure Coefficient $G_{CPI}$	$\pm 0.18$	
Components and Cladding	$\pm 27$	psf
Design Code Reference Publication	ASCE 7-05	
Design Base Shear	$V_x =$	Determined by Building Mfr.
	$V_y =$	Determined by Building Mfr.
Seismic Load		
Seismic Occupancy Category	II	
Seismic Design Category	C	
Spectral Response Coefficients $S_{DS}$	38%	
	$S_{D1}$	17%g
	$S_{M5}$	57%g
	$S_{M1}$	25%g
Site Class	D	
Seismic Importance Factor $I_E$	1.0	
Basic Seismic-Force-Resisting System	Structural Steel System Not Specifically Detailed for Seismic Resistance	
Response Modification Factor $R$	3.0	
Seismic Response Coefficient $C_s$	0.14	
Design Base Shear	Determined by Building Mfr.	
Analysis Procedure	Equivalent Lateral Force Procedure (ELF) per Section 12.8 ASCE 7-05	
Lateral Design Control	Determined by Building Mfr.	

Pre-engineered systems and components shall be designed based on the minimum load requirements per ASCE-7 and the above basic load parameters.

- The structure has been designed to withstand In-Service loads only. Methods, procedures, and sequences of construction are the responsibility of the Contractor. The Contractor shall take all necessary precautions to maintain and insure the integrity of the structure at all stages of construction.
- Where conflicts occur between Notes, Drawings, or Specifications, the Contractor shall not proceed with the affected work until the Structural Engineer issues a clarification.

B. FOUNDATION

- Foundation design is based on a presumptive allowable soil bearing pressure of 2000 psf.

C. CONCRETE

- Concrete in the following areas shall have natural sand fine aggregate and normal weight coarse aggregates conforming to ASTM C33, Type I Portland Cement conforming to ASTM C150, and shall have the following minimum compressive strength ( $f_c$ ) at 28 days:  
Footings 3000 psi w/ No Entrained Air (Fly Ash optional)  
Interior Slab on Grade 4000 psi w/ No Entrained Air (Fly Ash optional)  
Exterior slabs and walks 4000 psi w/ Entrained Air and Fly Ash
- All concrete shall be made in accordance with approved design mixes as required for the job, see Specifications.
- All concrete shall contain entrained air in accordance with ACI 318, Table 4.2.1.
- Concrete that arrives at the jobsite with a slump greater than 4 1/2" shall be rejected. Concrete with a slump less than 2 1/2" shall have an approved super-plasticizer added such that the minimum 2 1/2" slump may be achieved. The addition of water at the jobsite for the purpose of increasing the slump is prohibited.
- Schedule of Concrete Finishes:  
Interior slab on grade Trowel Finish.  
All unexposed concrete surfaces, U.O.N. Rough Form Finish.  
All exposed concrete surfaces, U.O.N. Smooth Rubbed Finish.  
Tops of exposed wall surfaces Trowel Finish.
- The Contractor shall be responsible for furnishing and installing anchor bolts, clips, inserts, connection plates, sleeves, slots, and other required items in accordance with the Contract Drawings, and in cooperation with other trades prior to placing the concrete.

D. CONCRETE REINFORCEMENT

- Concrete reinforcement bars shall conform to ASTM A615, Grade 60. Reinforcement designated as continuous shall lap 36 bar diameters at splices, unless noted otherwise. See MASONRY section below for lap requirements in CMU walls.
- Welded Wire Reinforcement shall conform to ASTM A185. Reinforcement shall be furnished in flat sheets. Lap one full mesh.
- All concrete reinforcement bars and WWR shall be accurately and securely tied and anchored in place to prevent dislocation during the concrete placement operation.
- Provide corner reinforcement, 36 bar diameters X 36 bar diameters, at each continuous footing change in direction.
- Provide 1 - #4 reinforcement bar X 4'-0" at re-entrant corners and around the perimeter of rectangular holes in the slab, unless otherwise noted. Place bar diagonal to the corner with 1" clearance from the top and the side of the slab at the corner.
- Minimum concrete cover protection for reinforcement bars shall conform to the American Concrete Institute Committee 318, Section 7.7, unless noted otherwise.

E. MASONRY

- Concrete Masonry shall have a minimum compressive strength ( $f_m$ ) of 1500 psi at 28 days. Concrete Masonry Units (CMU) shall have minimum unit strength of 1900 psi at 28 days for the average net area.
- Mortar for CMU walls shall be Type "S" and shall have a minimum compressive strength of 1800 psi at 28 days.
- All CMU cells containing reinforcement or otherwise indicated to be grouted shall be filled with grout conforming to ASTM C-476 "Grout for Masonry". The grout shall have a minimum 28-day compressive strength of 2500 psi. The grout design mix shall be proportioned such that the specified slump range is designed into the mix, or a slump range of 3'-5" may be designed with the additional slump being attained at the jobsite by the addition of an approved super-plasticizer. No additional water may be added to the mix at the jobsite to increase the slump.
- All vertical reinforcement in masonry walls shall be laterally stabilized by Rebar Positioners - Wire-Bond Model 340.1 or 340.2, or approved equivalent.
- Provide continuous horizontal joint reinforcement at 8" O.C., U.O.N. The reinforcement shall be Standard Duty Ladder-type with 9 gauge diameter side rods and 9 gauge cross rods. Finish shall be hot dipped galvanized after fabrication (ASTM A 153, Class B2, 1.50 oz./sq. ft). All corners and intersections shall be reinforced with pre-fabricated "L" and "T" shaped assemblies. No site-cut reinforcement is allowed.
- Reinforcement in CMU designated as continuous shall lap 48 bar diameters, U.O.N.

F. PRE-ENGINEERED METAL BUILDINGS

- Configuration, including bracing, shall be as shown on the drawings. Should building manufacturer wish to furnish a system that will differ from that shown, written approval shall be obtained from the Architect prior to bidding.
- Building design and load application shall conform to the current North Carolina State Building Code. The collateral load shall not be used to reduce the effects of wind loads on the building.  
Roof Live Load As Required by NCSBC  
Collateral Roof Dead Load 5 psf  
Wind Load 90 mph  
Exposure B  
Enclosure Classification Enclosed  
Importance Factor 1.0  
Snow Load 20 psf **BUILDING IS NOT HEATED**

- Refer to the "GENERAL" section of the STRUCTURAL NOTES for additional loading information.
- The Metal Building frames shall be designed such that the maximum horizontal drift due to wind and seismic loading shall satisfy an H/180 criteria. The maximum vertical deflection of primary and secondary framing members shall be within the tolerances proscribed by the NC State Building Code. Manufacturer shall verify that the deflection criteria are compatible with exterior and interior finishes supported by the Metal Building structure.
  - The footing design is based upon an assumed loading of the Metal Building super-structure. The foundations shall not be constructed until the Structural Engineer has reviewed the actual design reactions supplied by the Manufacturer.

G. MISCELLANEOUS ITEMS

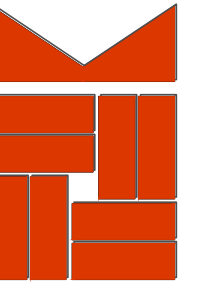
- Epoxy for the setting of dowels or anchor bolts shall be "PE 1000" as manufactured by Powers Fasteners, Inc., New Rochelle, NY, or an approved equivalent. Installation of the dowels/anchor bolts shall be performed in strict accordance with the manufacturer's written instructions.
- Grout for setting bearing surfaces shall be non-shrink, equal to "Masterflow 928" as manufactured by MBT-BASF.
- Unless specifically shown or noted on the Drawings, no structural member shall be cut, notched, bored, or otherwise weakened without the permission of the Structural Engineer.

H. TYPICAL ABBREVIATIONS

1. The following are typical abbreviations used in the structural drawings:			
A.B.	-ANCHOR BOLT	H.S.	-HEADED STUD
ADD'L	-ADDITIONAL	JST.	-JOIST
ARCH'L	-ARCHITECTURAL	JT.	-JOINT
BM	-BEAM	LT.	-LIGHT
BP	-BASE PLATE	MAS.	-MASONRY
BRG.	-BEARING	MAX.	-MAXIMUM
BSMT.	-BASEMENT	MECH.	-MECHANICAL
C.I.P.	-CAST IN PLACE	MFR	-MANUFACTURER
C.J.	-CONTROL OR CONSTRUCTION JOINT	MIN.	-MINIMUM
CLR.	-CLEAR	NOM.	-NOMINAL
CMU	-CONCRETE MASONRY UNIT	NTS	-NOT TO SCALE
COL.	-COLUMN	O.H.	-OPPOSITE HAND
CONC.	-CONCRETE	O.C.	-ON CENTER
CONST.	-CONSTRUCTION	PC	-PRECAST OR PILE CAP
CONT.	-CONTINUOUS	PREFAB.	-PREFABRICATED
COORD.	-COORDINATE	REF.	-REFERENCE
DET.	-DETAIL	REINF.	-REINFORCEMENT
DIA	-DIAMETER	SECT.	-SECTION
DWG.	-DRAWING	SIM.	-SIMILAR
E.B.	-EXPANSION BOLT	STD.	-STANDARD
EL.	-ELEVATION	STRUCT.	-STRUCTURAL
F.F.	-FINISHED FLOOR	T.O.S.	-TOP OF SLAB OR STEEL
FIN.	-FINISH(D)	TYP.	-TYPICAL
FLR.	-FLOOR	U.O.N.	-UNLESS OTHERWISE NOTED
FOUND.	-FOUNDATION	V.I.F.	-VERIFY IN FIELD
FTG.	-FOOTING	VERT.	-VERTICAL
GALV.	-GALVANIZE (D) (ING)	W.P.	-WORK POINT
H.C.	-HOLLOW-CORE	WT.	-WEIGHT
HORIZ.	-HORIZONTAL	W.W.R.	-WELDED WIRE REINF.
HDS	-HOT-DIP GALVANIZED		



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KDS Warehouse II  
CHARLES MONIOTTE  
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TRANSVERSE SECTION  
AND STRUCTURAL NOTES

Date: 04-02-2014

Drawn By: GKA

Designed By: EJK

Reviewed By: EJK

Sheet No.

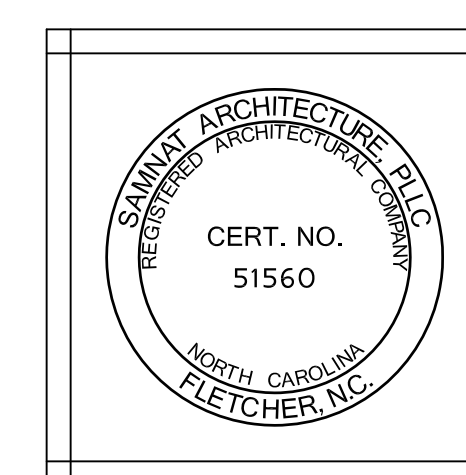
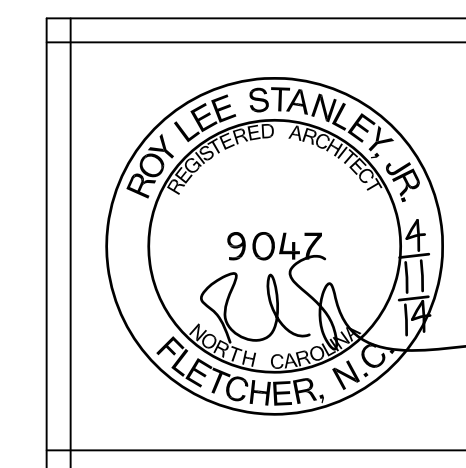
S4







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ARCHITECTURE



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Institute of Architects

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PROJECT DESCRIPTION:

**KDS**  
**Warehouse II**

Etowah,  
North Carolina

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REVISIONS:

PROJECT NUMBER:

14014

DATE:

April 11, 2014

SHEET TITLE:

Life Safety Plan/  
UL Designs/Fire Areas

SHEET:

**T1.2**

