PROJECT REFERENCE NO.	SHEET NO.
U-3308	2C-5

STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR

CONCRETE STEPS WITH HANDRAIL

SHEET 1 OF 1

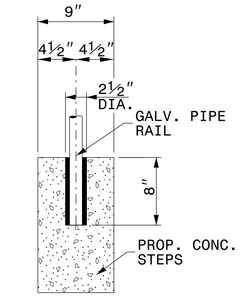
844D01

GENERAL NOTES :

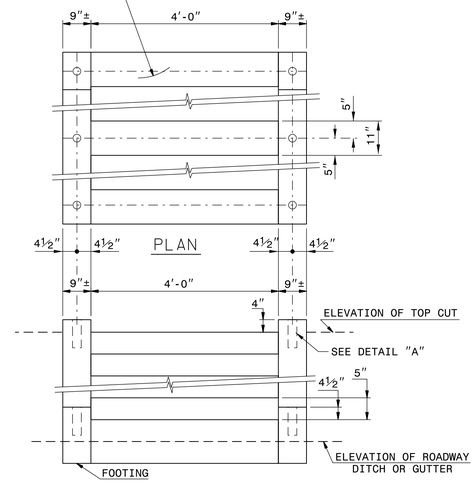
1- CONSTRUCT PROPOSED STEEL PIPE RAIL OF 1½″ DIAMETER SCHEDULE 40 PLAIN END GALVANIZED STEEL PIPE MEETING THE REQUIREMENTS OF ASTM A53. EMBED PIPE RAIL 8″ INTO PROPOSED STEPS WITH CHEMICAL OR CONCRETE GROUT ANCHORING SYSTEM AS DIRECTED BY THE ENGINEER.
2- USE A ROTARY DRILL FOR DRILLING THE HOLES FOR THE PIPE RAIL. NO IMPACT DRILLS ALLOWED.
3- USE CLASS ″B″ CONCRETE THROUGHOUT FOR CONCRETE STEPS.
4- LOCATION AND QUANTIES SHOWN ARE APPROXIMATE ONLY. EXACT LOCATION AND QUANTIES WILL BE DETERMINED BY THE ENGINEER.
5- ALL WORK AS DIRECTED BY THE ENGINEER.
6- REPAIR OF GALVANIZING IN ACCORDANCE WITH SCT.1076 OF THE STANDARD SPECIFICATIONS.
7- WELD IN ACCORDANCE WITH ARTICLE 1072-20 OF THE STANDARD SPECIFICATIONS.
8- 2″ CLEAR SPACING ON ALL REINFORCING BARS.
9- EXTEND HORIZONTAL REINFORCING BARS UPWARD INTO SIDE WALLS.
10- ALL HANDRAILS AND STEPS MUST COMPLY WITH ADA STANDARDS FOR ACCESSIBLE DESIGN.

CUBIC YARDS IN STANDARD CONCRETE STEPS

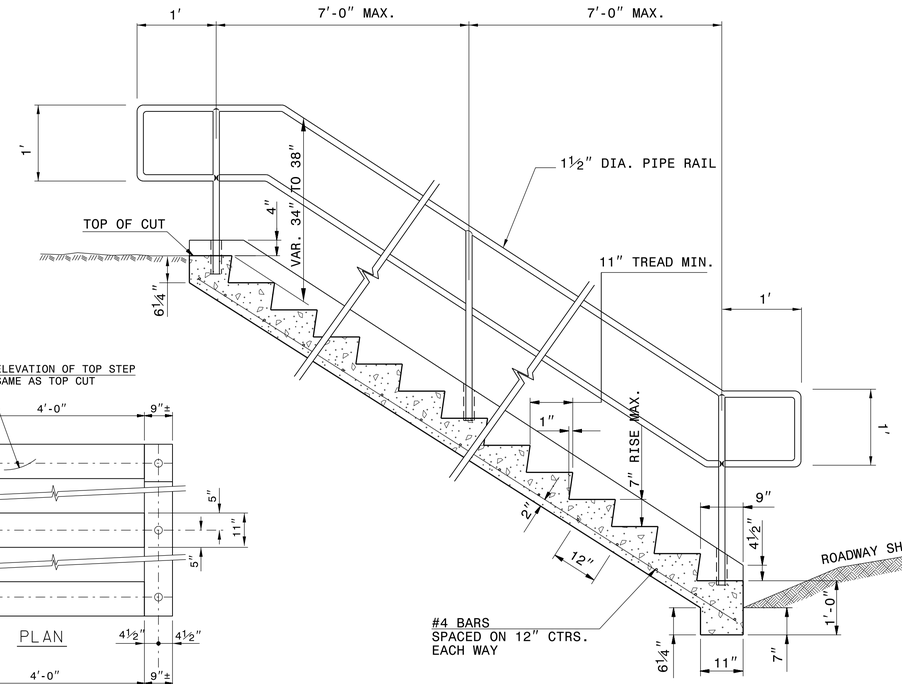
NO. OF STEPS	4′ WIDE	5′ WIDE	6′ WIDE	7′ WIDE	ADDITIONAL CU. YDS. PER 1′ WIDTH
2	0.4	0.5	0.5	0.6	0.1
3	0.6	0.7	0.8	0.9	0.1
4	0.8	0.9	1.0	1.2	0.1
5	1.0	1.2	1.3	1.4	0.1
6	1.2	1.4	1.5	1.7	0.2
7	1.4	1.6	1.8	2.0	0.2
8	1.6	1.8	2.0	2.3	0.2
9	1.8	2.0	2.3	2.6	0.3
10	2.0	2.3	2.5	2.8	0.3
ADDITIONAL STEP INCREMENT	0.2	0.2	0.2	0.3	0.1



DETAIL "A"



FRONT ELEVATION



SECTION
CONCRETE STEPS

STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR

CONCRETE STEPS WITH HANDRAIL

SHEET 1 OF 1

844D01

NORTH CAROLINA PROFESSIONAL SEAL 022966 ENGINEER Joel S. Howerton

DocuSigned by: Joel Howerton 873F3D17DCDC45F...

11/16/2015

CONTRACT STANDARDS AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

SEE PLATE FOR TITLE

ORIGINAL BY: T.Spell DATE: Oct.7,1998
MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.: s:usr/details/stand/844d01e.dgn

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