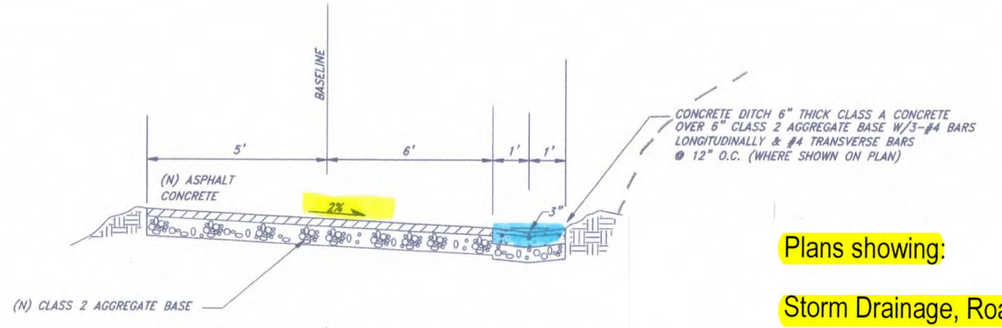
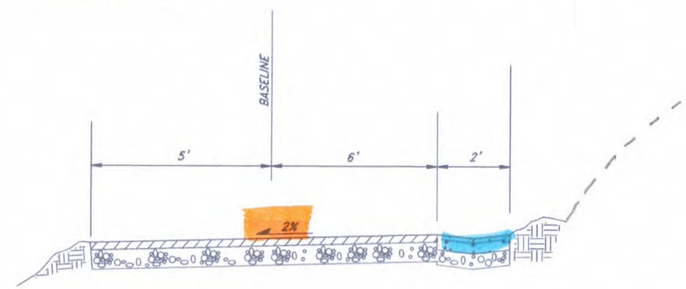
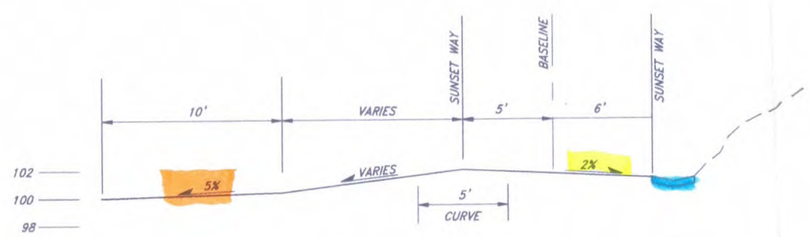


Plans showing:

Storm Drainage, Road Grading, Retaining Walls, Speed Humps and Paving

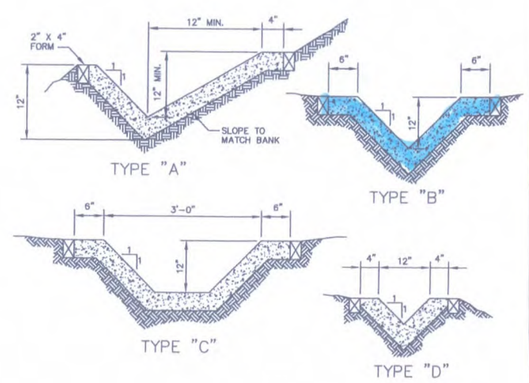


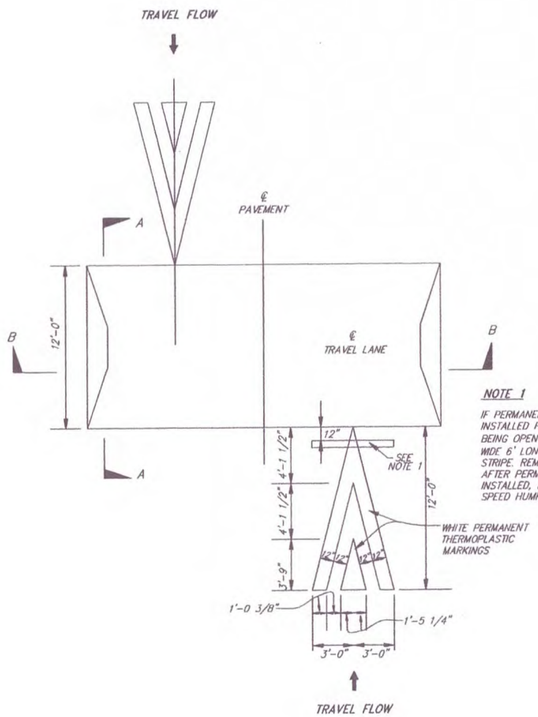
SUNSET WAY CROSS SECTIONS



PARKING CROSS SECTION STA. 12+74 A-A

N.T.S.





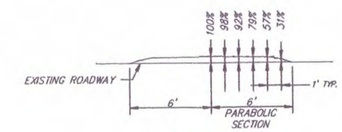
PLAN

SPEED HUMP DETAIL

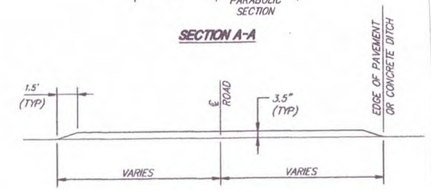
NOT TO SCALE

NOTE 1

IF PERMANENT MARKINGS ARE NOT INSTALLED PRIOR TO SPEED HUMP BEING OPEN TO TRAFFIC, PROVIDE 6" WIDE 6' LONG TEMPORARY WHITE STRIPE. REMOVE TEMPORARY STRIPE AFTER PERMANENT MARKINGS ARE INSTALLED, MAXIMUM 7 DAYS AFTER SPEED HUMP INSTALLATION.



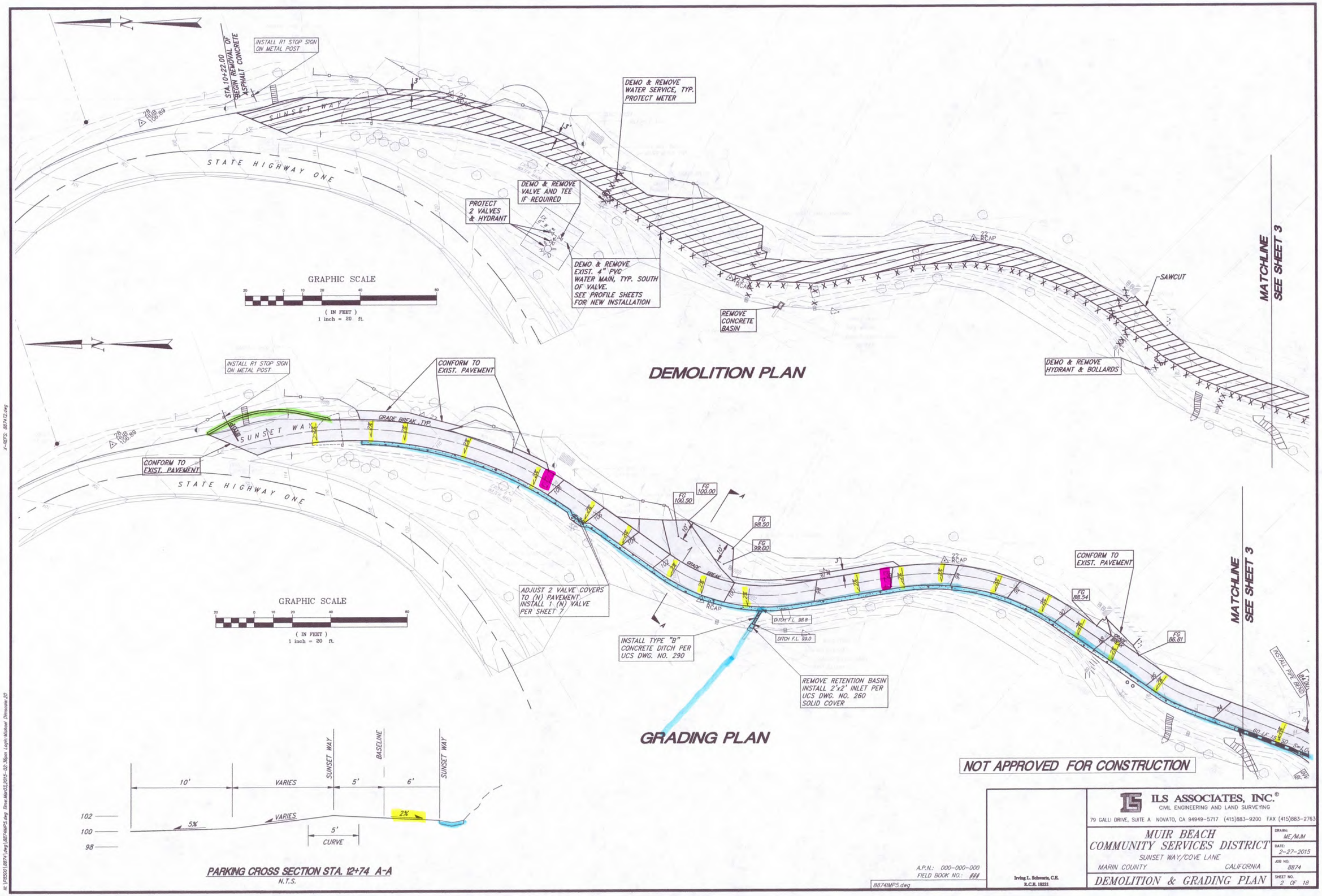
SECTION A-A



SECTION B-B

SPEED HUMP DETAIL

NOT TO SCALE



A.P.N.: 000-000-000
FIELD BOOK NO.: ###

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R.C.E. 18221

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79 GALLI DRIVE, SUITE A NOVATO, CA 94949-5717 (415)883-9200 FAX (415)883-2763

MUIR BEACH COMMUNITY SERVICES DISTRICT
SUNSET WAY/COVE LANE
MARIN COUNTY CALIFORNIA

DEMOLITION & GRADING PLAN

DRAWN:	ME/MJM
DATE:	2-27-2015
JOB NO.	8874
SHEET NO.	2 OF 18

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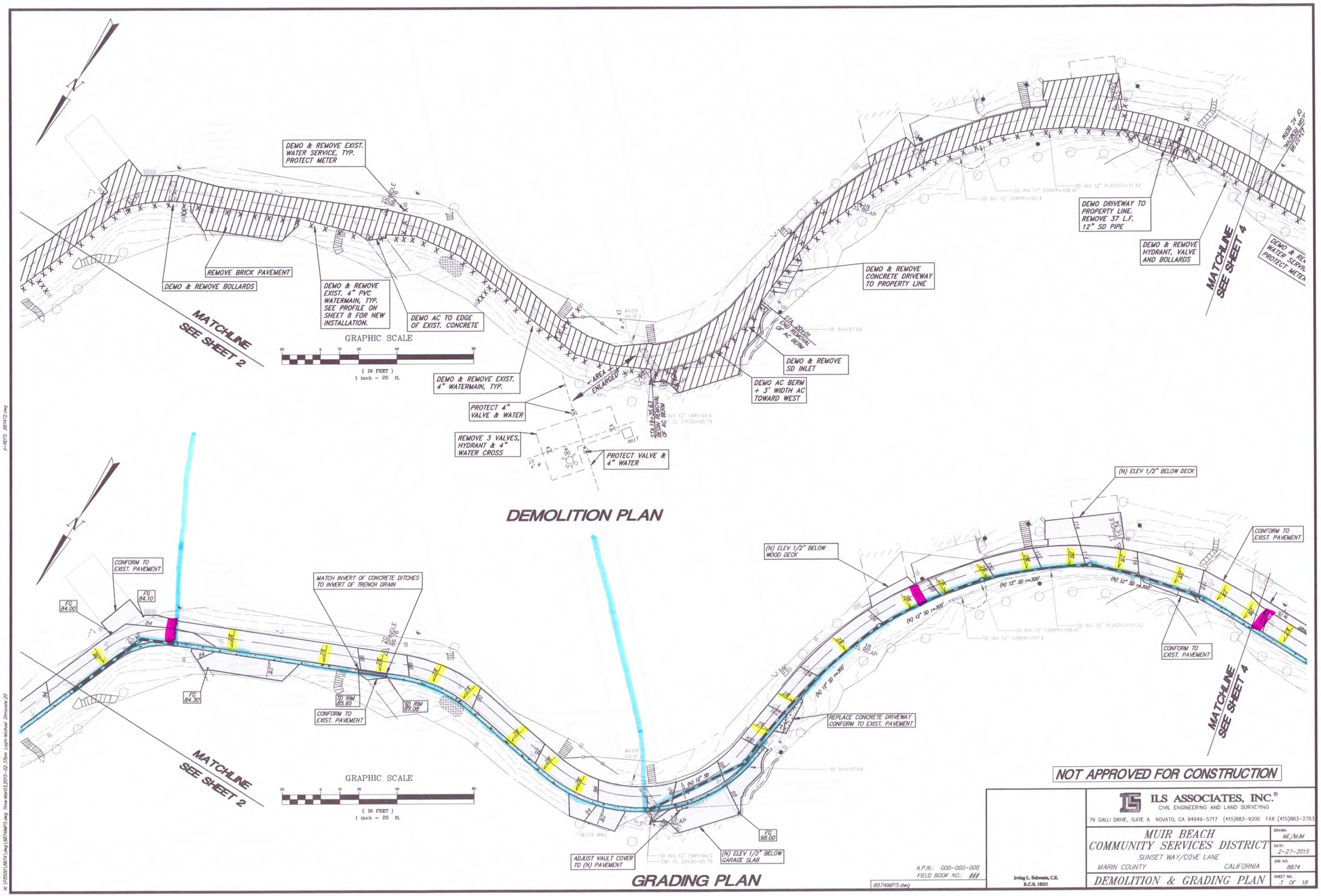

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FIELD BOOK NO.: ###

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SUNSET WAY/COVE LANE
MARIN COUNTY CALIFORNIA

DEMOLITION & GRADING PLAN

DRAWN: MC/MJM
DATE: 2-27-2015
JOB NO. 8874
SHEET NO. 3 OF 18

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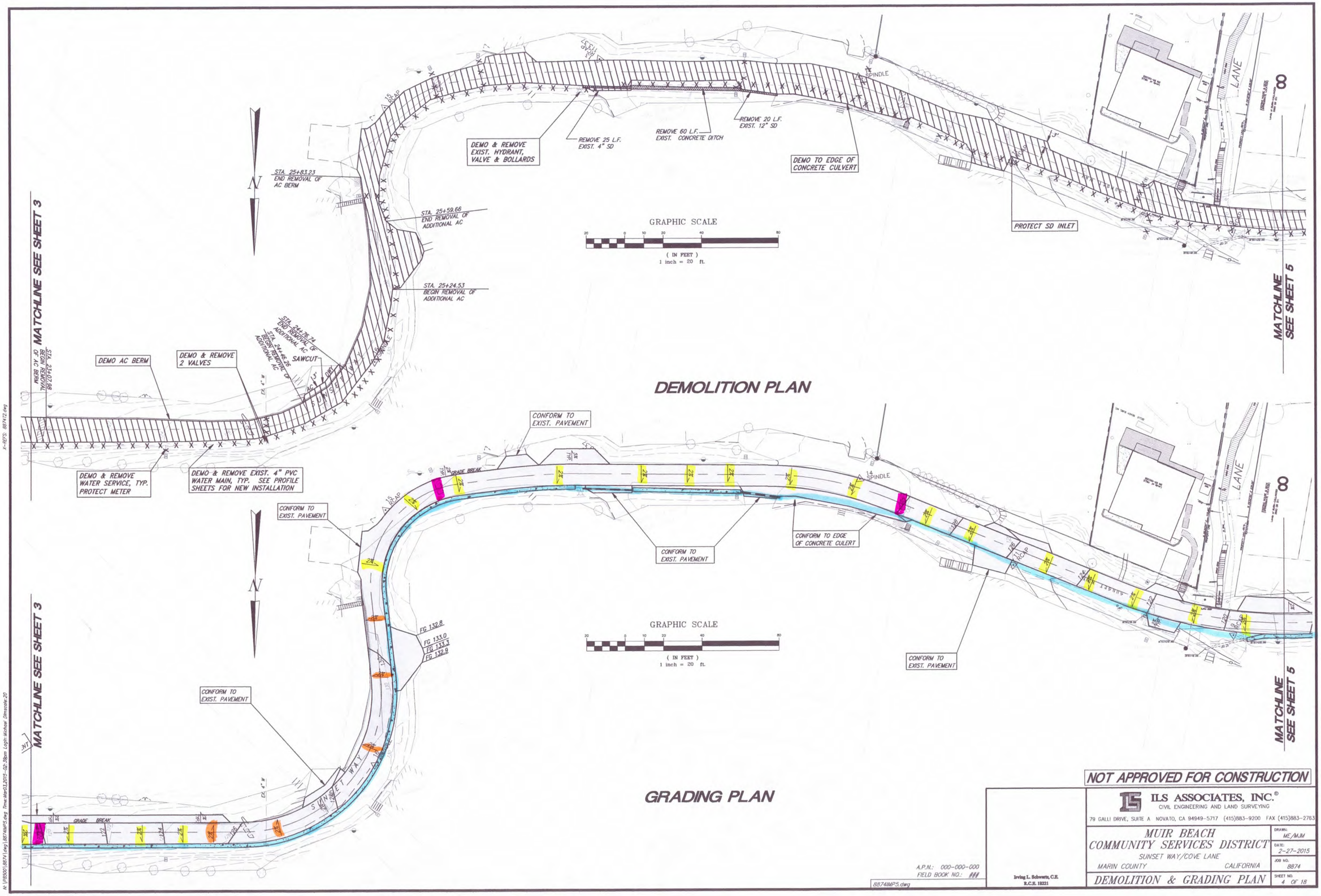

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MUIR BEACH COMMUNITY SERVICES DISTRICT
SUNSET WAY/COVE LANE
MARIN COUNTY CALIFORNIA

DEMOLITION & GRADING PLAN

DRAWN: ME/MJM
DATE: 2-27-2015
JOB NO. 8874
SHEET NO. 4 OF 18

A.P.N.: 000-000-000
FIELD BOOK NO.: ###

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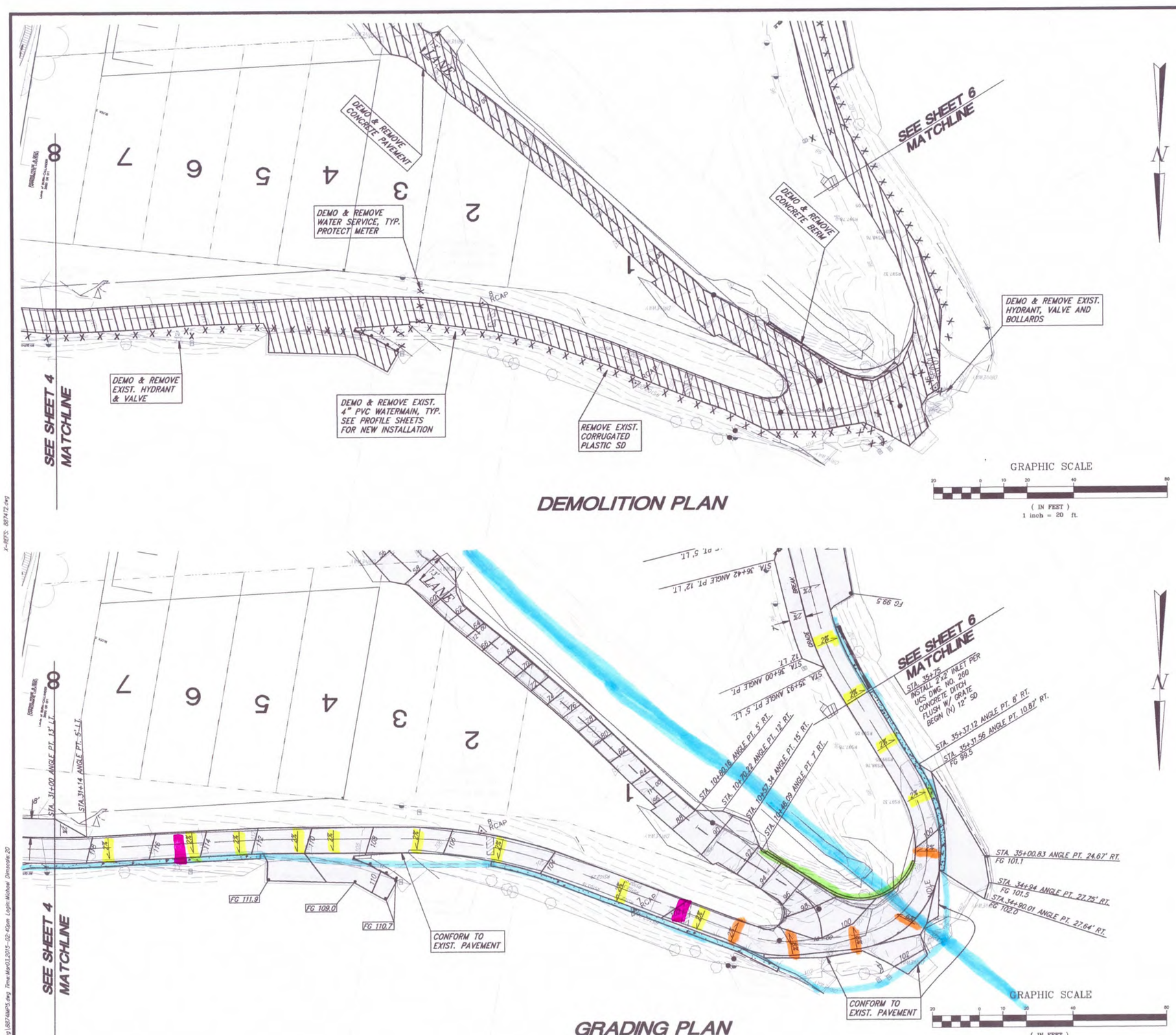

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FIELD BOOK NO.: ###

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MUIR BEACH COMMUNITY SERVICES DISTRICT
SUNSET WAY/COVE LANE
MARIN COUNTY CALIFORNIA

DEMOLITION & GRADING PLAN

DRAWN: ME/MJM
DATE: 2-27-2015
JOB NO. 8874
SHEET NO. 5 OF 18

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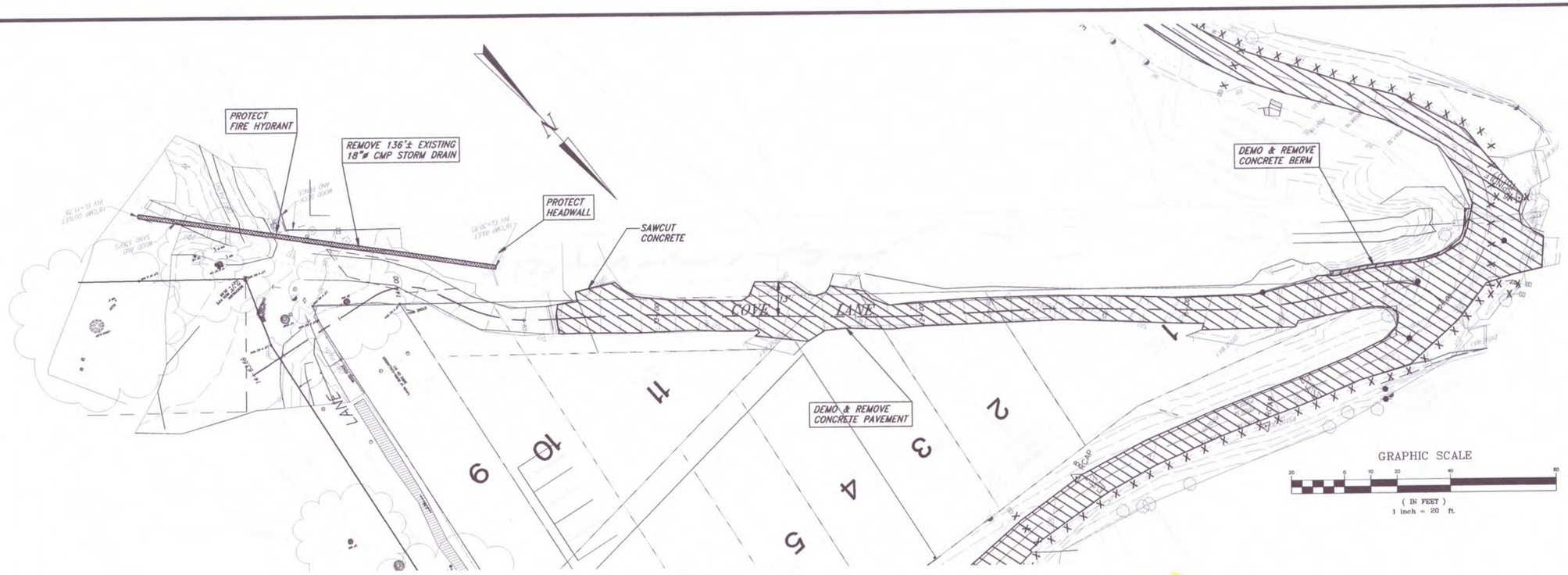
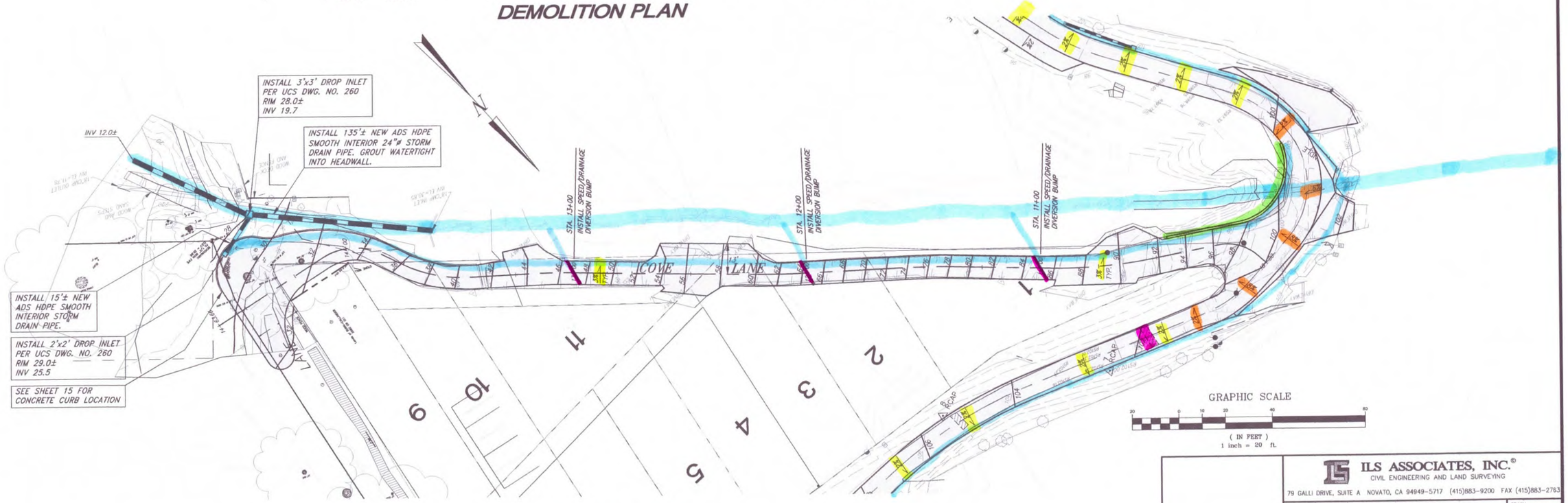


DEMOLITION PLAN



GRADING PLAN

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FIELD BOOK NO.: ###

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MUIR BEACH COMMUNITY SERVICES DISTRICT
SUNSET WAY/COVE LANE
MARIN COUNTY CALIFORNIA

DRAWN: ME/MJM
DATE: 2-27-2015
JOB NO. 8874
SHEET NO. 7 OF 18

DEMOLITION & GRADING PLAN

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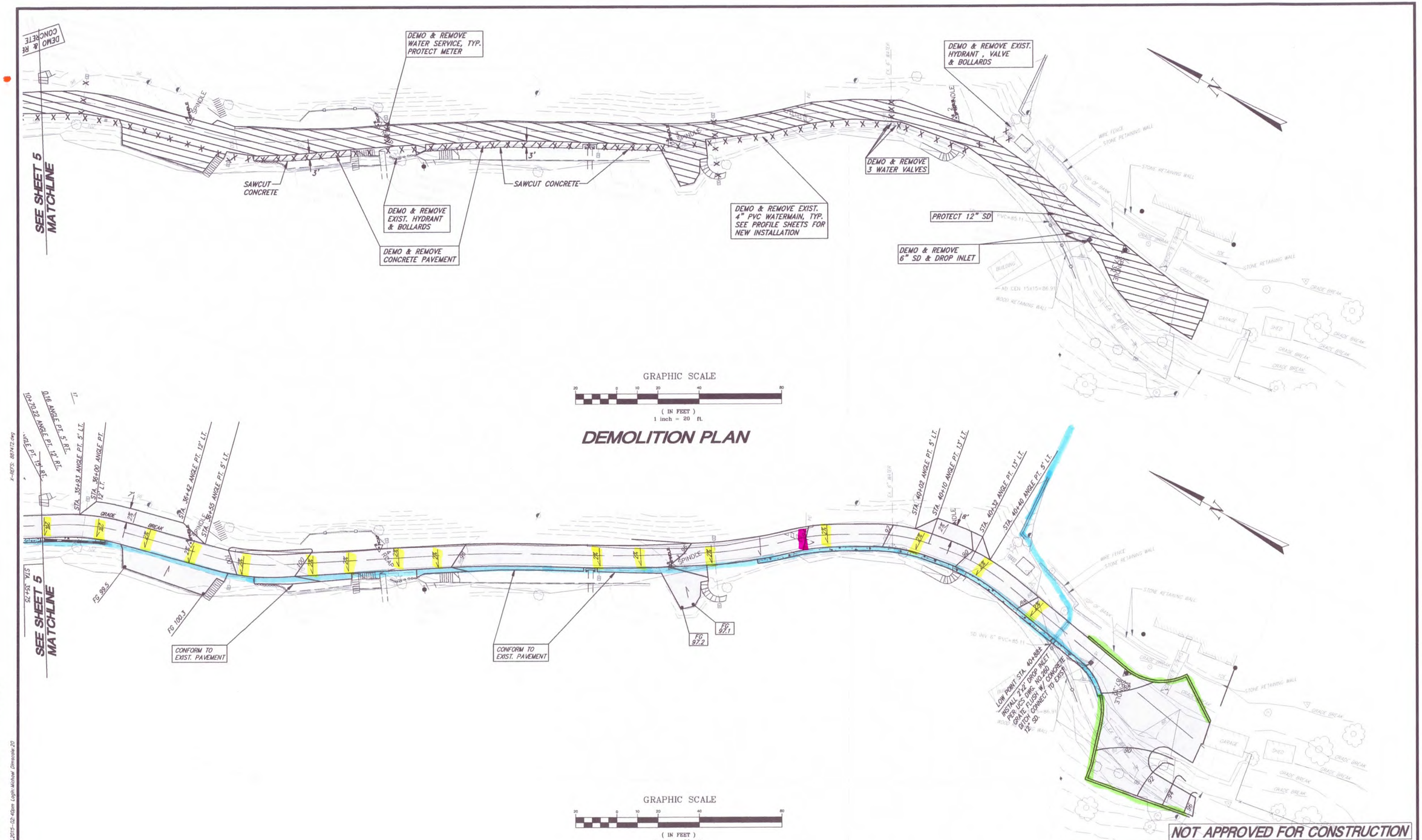

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MUIR BEACH COMMUNITY SERVICES DISTRICT
SUNSET WAY/COVE LANE
MARIN COUNTY CALIFORNIA

DRAWN: ME/MJM
DATE: 2-27-2015
JOB NO. 8874
SHEET NO. 6 OF 18

DEMOLITION & GRADING PLAN

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ILS ASSOCIATES, INC.
CIVIL ENGINEERING AND LAND SURVEYING

DRAINAGE ANALYSIS

COVE LANE CULVERT
MUIR BEACH, CA

February 25, 2015

JOB NO. 8874

REGISTERED PROFESSIONAL ENGINEER
MICHAEL E. EVANS
No. C040663
Exp. 3.31.15
CIVIL
STATE OF CALIFORNIA

02.26.2015

79 GALLI DRIVE, SUITE A NOVATO, CA 94949-5717 (415) 883-9200 FAX (415) 883-2763

ILS ASSOCIATES, INC.
CIVIL ENGINEERING AND LAND SURVEYING

BY: MEE JOB NO. 8874

DATE: 2/2015 SHEET NO: _____

RATIONAL METHOD COMPUTATION FORM

(From Cal-Trans Rainfall Intensity-Duration-Frequency Analysis
& County of Marin Hydrology Manual Revised 8/2/00)

$$Q = C \times I \times A$$

Watershed SEACARE TO COVE LANE At Point CULVERT BOTTOM COVE LANE

Area = 1,467,500 sq. ft. = 33.7 acres.

Time of Concentration (+C)

$t_c = \frac{1.8\,(1.1-C)\sqrt{L}}{[S(100)]^{1/3}}$ +5 Min. $\frac{1.8(1.1-0.7)\sqrt{1900}}{[.21(100)]^{1/3}} = 11+5 = 16$ min

C = Runoff Coefficient* 0.7

L = Longest run in feet 1,900 FT

S = Average Slope in ft/ft = $\frac{\Delta H}{L}$ $\frac{400}{1900} = 0.21$

Intensity

P_{60} (chart I) = 1.8 zone (chart V) = A subzone (chart v) 2

I_{100} (chart k) = 1.8 Rd_{10} (chart k) _____

$I_{10} = I_{100}$ _____ x Rd_{10} (chart k) _____ = _____ in/hr.

I _____ = Rd _____ (from Chart R) x I_{100} _____ = _____ in/hr.

100 YEAR STORM

Peak Discharge Q = C x I x A

Q 100 = 0.7 x 3.8 x 33.7 = 89.6 c.f.s.

N:\GEN\CORRESPO.OFF\RationalMethodComputationForm_100305.DOC

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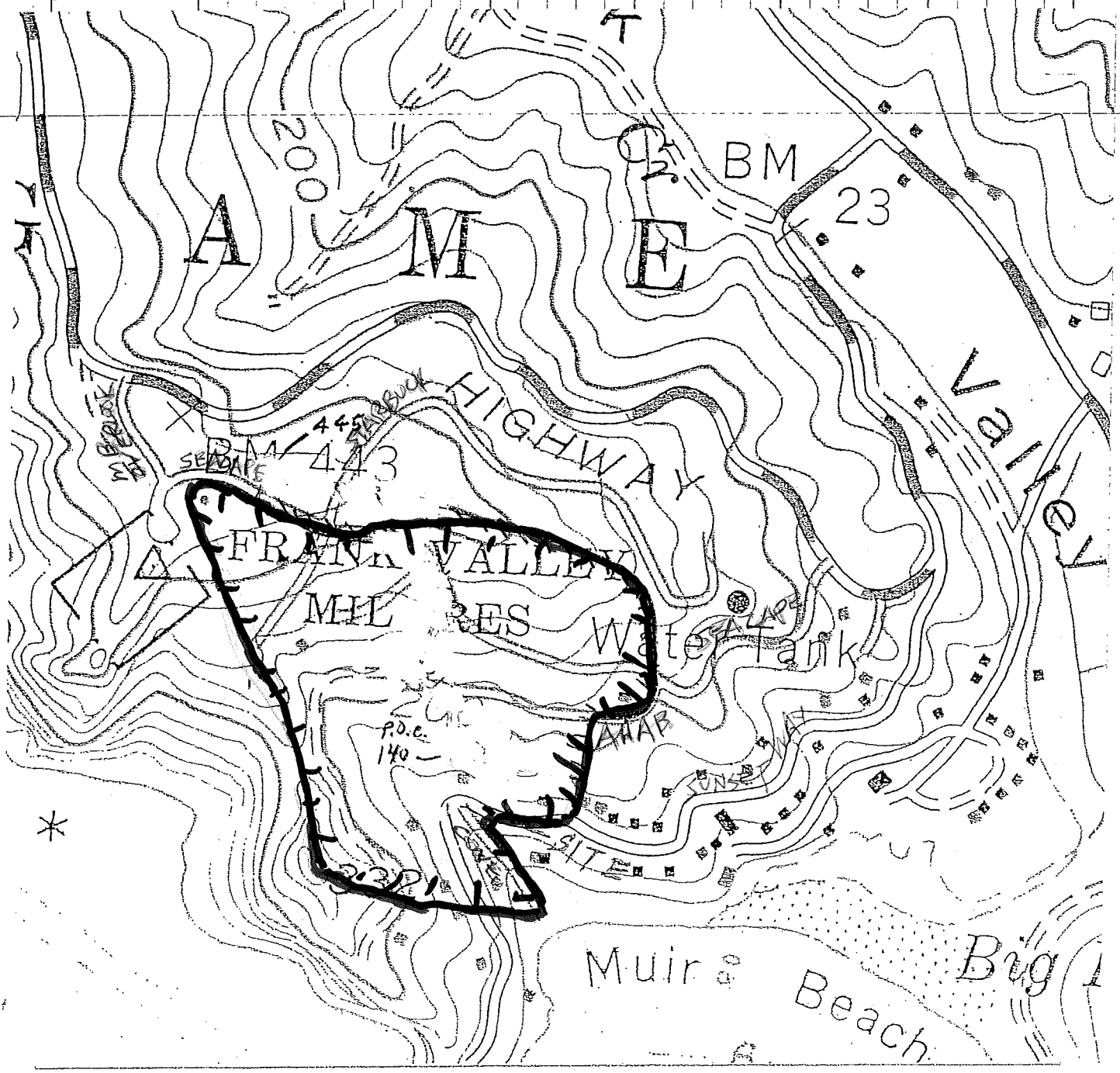
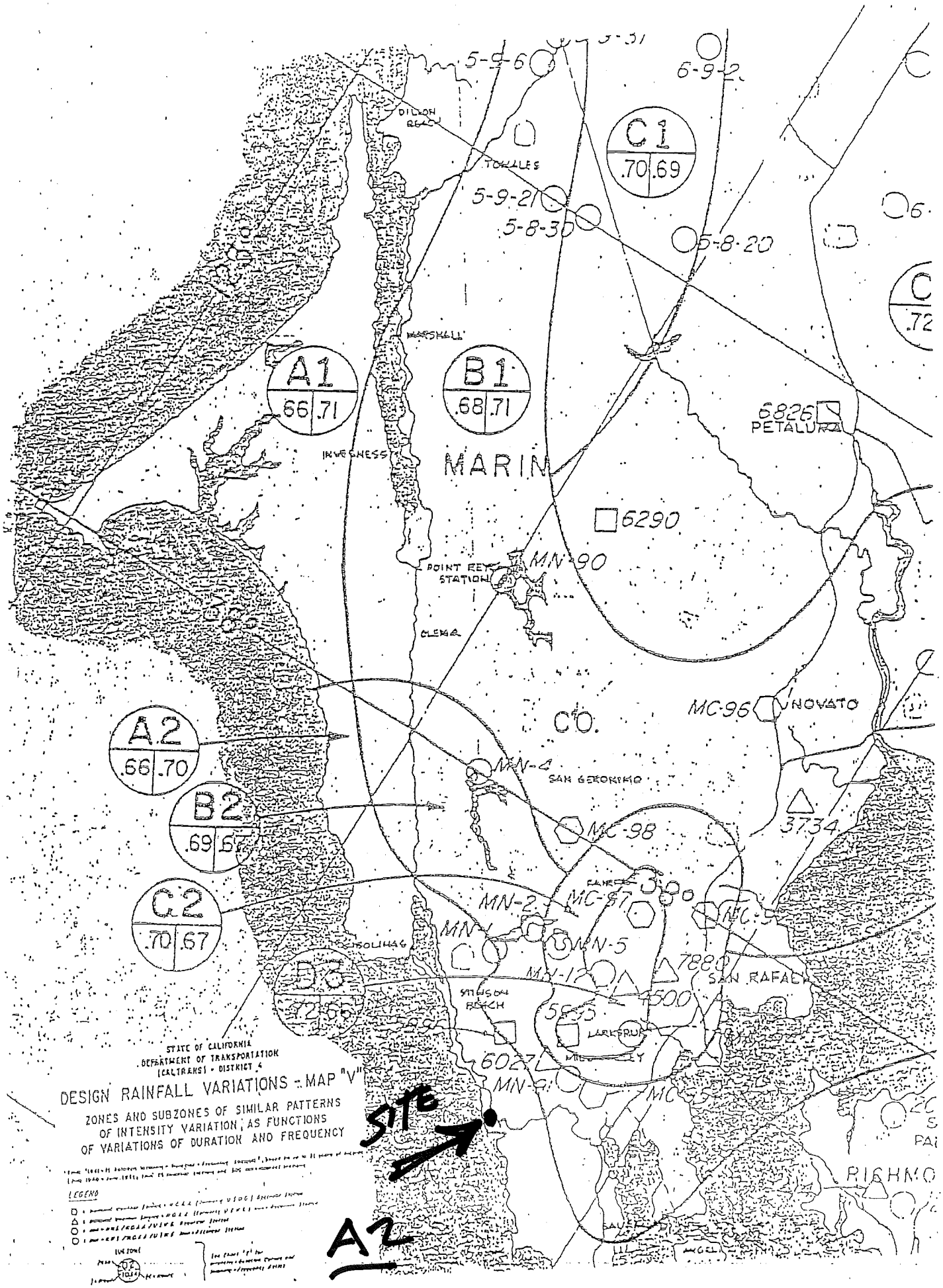
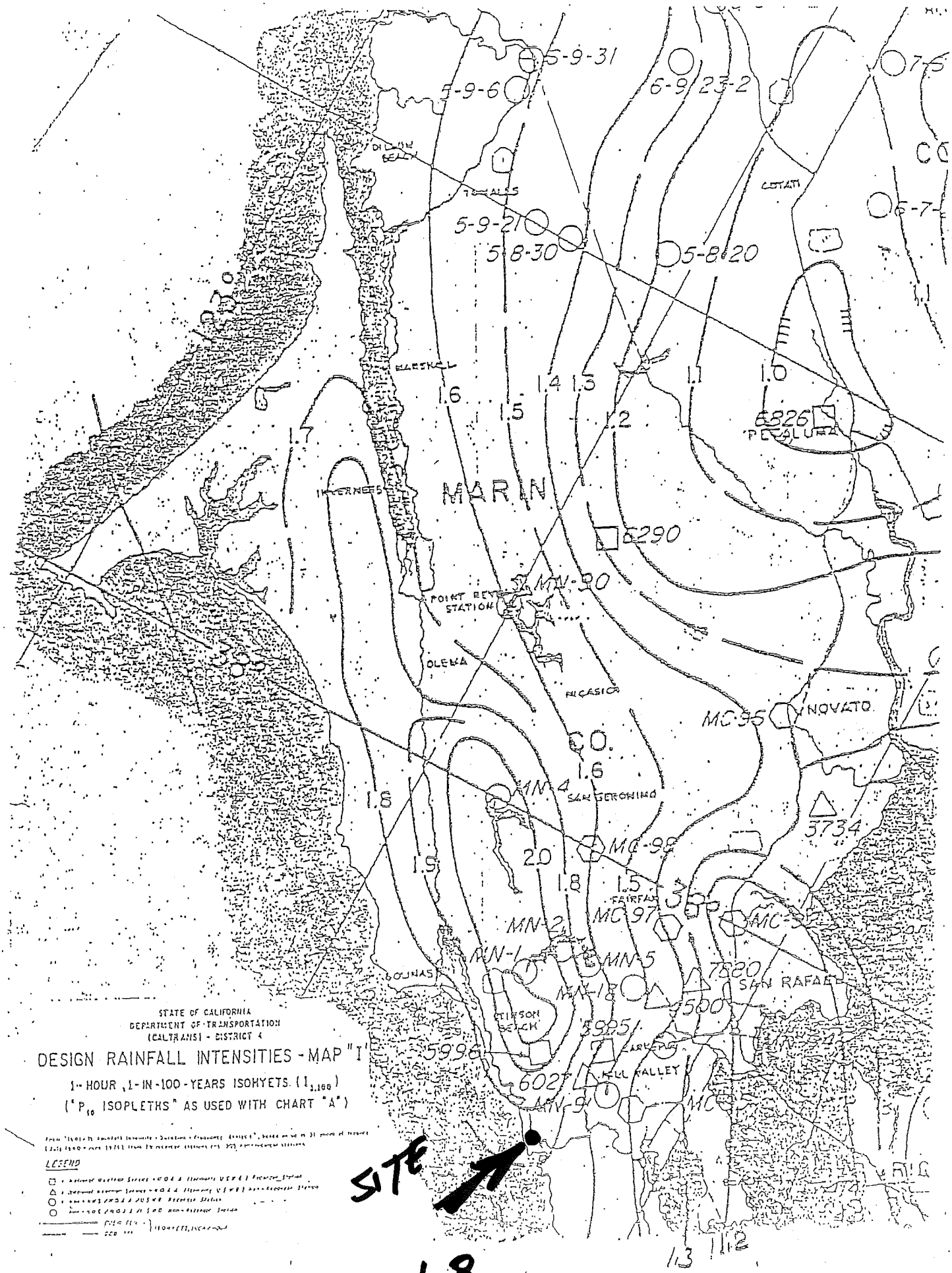
www.ilscels.com

PROJECT MUIR BEACH PROJECT# 8874
SHEET NO. _____ OF _____
CALCULATED BY MEE DATE 2/2015
CHECKED BY ILS DATE 2/2015
SCALE 1" = 500'

WATERSHED AREA MAP (33.7 ACRES)




STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
(CALTRANS) - DISTRICT 4
DESIGN RAINFALL VARIATIONS - MAP "V"
ZONES AND SUBZONES OF SIMILAR PATTERNS
OF INTENSITY VARIATION, AS FUNCTIONS
OF VARIATIONS OF DURATION AND FREQUENCY
LEGEND
A1
.66 .71
B1
.68 .71
C1
.70 .69
A2
.66 .70
B2
.69 .67
C2
.70 .67
MARIN
CO.
PETALUMA
NOVATO
SAN RAFAEL
POINT REYES STATION
INVERNESS
MARSHALL
TOMALES
DILLON BEACH
SAN GERONIMO
STINSON BEACH
LARKSPUR
RICHMO
6826
6290
3734
7880
5835
6027
MN-90
MN-4
MN-2
MN-5
MN-12
MC-96
MC-98
MC-87
SITE
A2


STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
(CALTRANS) - DISTRICT 4
DESIGN RAINFALL INTENSITIES - MAP "I"
1-HOUR, 1-IN-100-YEARS ISOHYETS. ($I_{1,100}$)
("P_{10} ISOPLETHS" AS USED WITH CHART "A")
LEGEND
MARIN
CO.
INVERNESS
POINT REYES STATION
OLEMA
NICASIO
SAN GERONIMO
FAIRFAX
NOVATO
SAN RAFAEL
LARKSPUR
KENTFIELD
TIBURON
BOLINAS
STINSON BEACH
DILLON BEACH
TOMALES
COTATI
PETALUMA
SITE
1.8

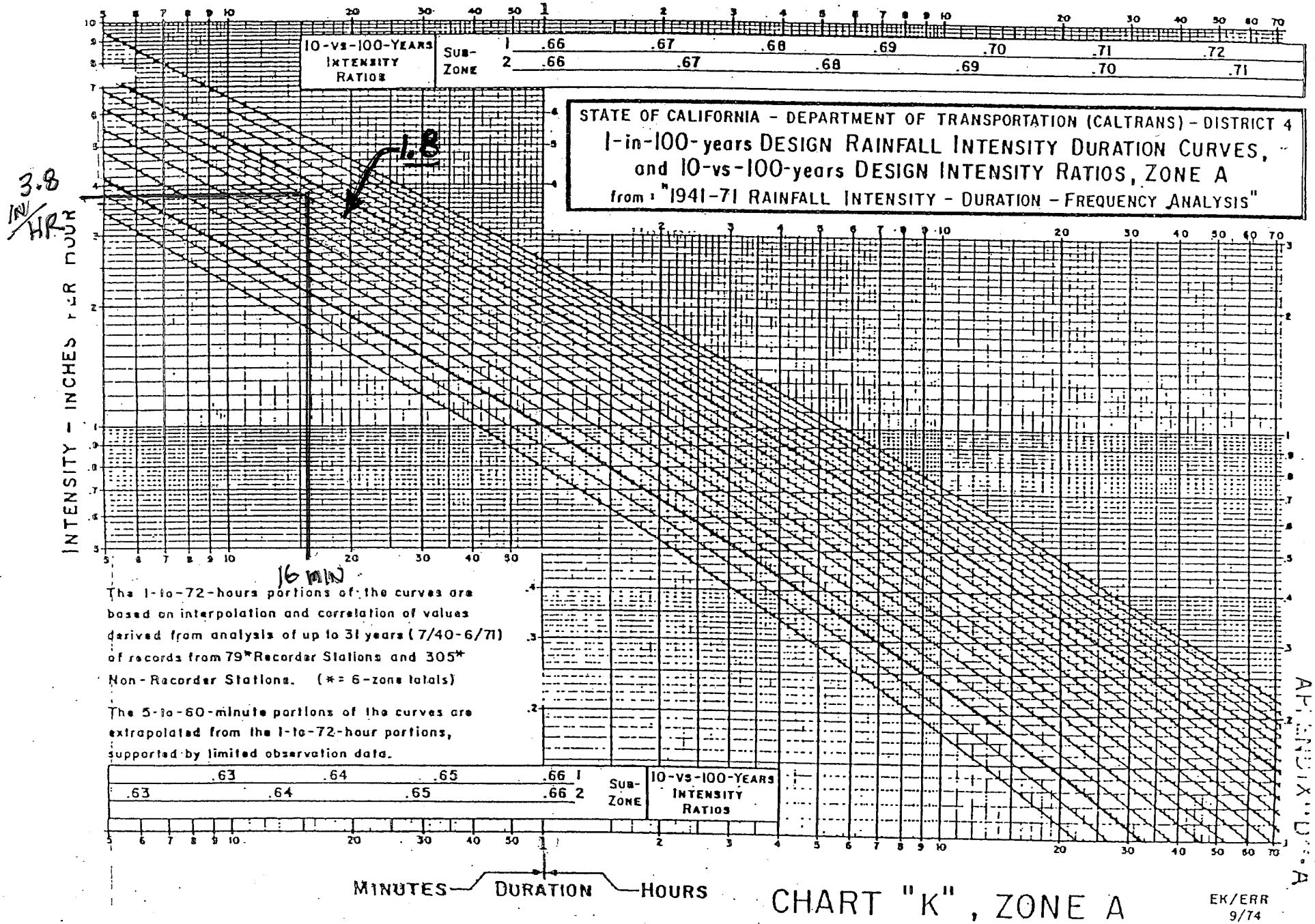


CHART "K", ZONE A

EK/ERR
9/74

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PROJECT MUIR BEACH PROJECT# 8874
SHEET NO. ____ OF ____
CALCULATED BY MEE DATE 2/2015
CHECKED BY ILS DATE 2/2015
SCALE ____

24" Ø PIPE CAPACITY

$Q = \frac{1.49}{n} R^{2/3} S^{1/2} A$

n = ROUGHNESS COEFFICIENT
R = HYDRAULIC RADIUS - FT
S = SLOPE - FT/FT
A = AREA - SQ FT
Q = DISCHARGE - cfs

$S = 0.14$

$A \quad \pi(1)^2 = 3.14$

$R = \frac{\pi(1)^2}{2\pi(1)} = 0.5$

$Q = \frac{1.49}{0.012} \times (0.5)^{2/3} \times (0.14)^{1/2} \times 3.14 = 91.9 \text{ cfs}$

91.9 > 89.6 OK