STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1442-01-73	-	-

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

FOND DU LAC TO EAST COUNTY LINE ROAD

C.T.H. "K" — C.T.H. "UU"

S.T.H. 23
FOND DU LAC COUNTY

STATE PROJECT NUMBER
1442-01-73

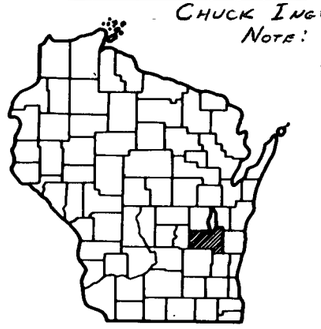
Index of Sheets

TOTAL SHEETS = 117

PROJECT ENGINEER:
ROBERT HUBING

AREA SUPERVISOR:
CHUCK INGWERSEN

NOTE: SEE SECOND PAGE OF DIARY # 812 FOR LIST OF PROJECT PERSONEL



CONSTRUCTION WORK STARTED: JULY 27, 1987
CONSTRUCTION WORK SUSPENDED: DEC. 11, 1987
CONSTRUCTION WORK RESUMED: MAY 18, 1988
CONSTRUCTION WORK COMPLETED: JUNE 7, 1988

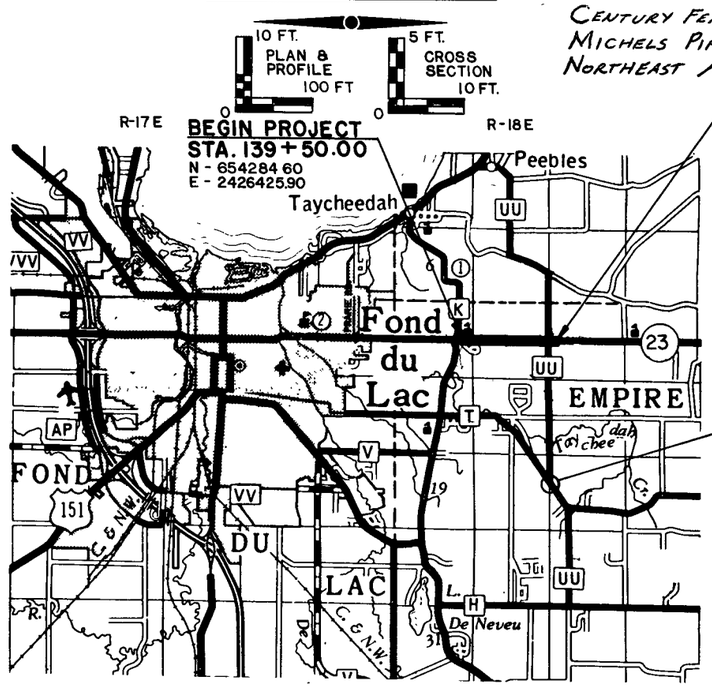
Design Designation

A.D.T. (1987)	= 5410
A.D.T. (2007)	= 6950
D.H.V.	= 1119
D.	= 60 - 40
T.	= 6.3 % D.H.V.
V.	= 50 M.P.H.

Conventional Signs

County Line		Caution Symbol (Combustible fluids under pressure)	CAUTION
Township or Range Line		Railroads	
Section Line		Fence	x (T PE) x
Corporate or City Limits		Culverts in Place	
Property line		Culverts Required	
Lot Line		Power Pole	
Existing Right of Way Line		Telephone or Telegraph Pole	
New Right of Way Line		Right of Way Markers	
Base or Survey Line		Marsh	
Slope Intercept		Wooded Area	
Existing Roadway or Private Entrance		Grade Elevation	

10 FT. PLAN & PROFILE 100 FT
5 FT. CROSS SECTION 10 FT.



Layout
Scale 0 0.5 1 MI.

Total Net Length of Centerline : 1.264 Mi. RURAL

COORDINATES SCALED FROM U.S.G.S. TOPOGRAPHIC MAP FOND DU LAC, WISCONSIN, QUADRANGLE FOR IDENTIFICATION ONLY.

CONTRACTOR:
RODDIE E. BEAUDOIN & SON

SUB-CONTRACTORS:
TIMME, INC.: GUARDRAIL REMOVAL & PLACEMENT, CONCRETE MASONRY ENDWALLS, RIPRAP, LANDMARK REFERENCE MONUMENTS, EROSION CONTROL, SODDING, SEEDING, UNDERDRAIN, PULLBOXES & CONDUIT
F.C. RAEMISCH & SON: CLEARING, GRUBBING, REMOVALS, EARTHWORK, SEWER WORK, TOPSOIL, FINISHING ROADWAY
BARRICADE FLASHER: TRAFFIC CONTROL, DELINEATOR POSTS, TEMPORARY PAVEMENT MARKING
LUNDA CONST. CO.: EXCAVATION FOR STRUCTURE, CONCRETE MASONRY CULVERTS BAR STEEL REINF., REMOVING OLD BRIDGE
CENTURY FENCE: PAVEMENT MARKING EPOXY, 4", STOP BARS, ARROWS, WORDS
MICHELS PIPELINE: CRUSHED AGGREGATE BASE COURSE
NORTHEAST ASPHALT: TACK COAT, BIT. MAT. FOR PLANT MIXES, SINGLE AGG. BIT. PAVEMENT

ORIGINAL PLANS PREPARED BY
ALFRED BENESCH & CO.
KENOSHA, WISCONSIN

WISCONSIN LOUIS BOWMAN JR E-15235 CHICAGO, IL PROFESSIONAL ENGINEER

2/10/87 (DATE) Louis Bowman Jr. (SIGNATURE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

Surveyor D.W. District Checker R.J.B.
Designer BENESCH C O Checker
District Supervisor J.T.F. C O Coordinator

Approved.
Date 3/19/87 District Transportation Director

Approved
Date 4/20/87 Chief Design Engineer

Approved
Date 4/28/87 Director of Development

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
REGION 5 WISCONSIN DIVISION

Approved
Date _____ Division Administrator

1442-1-73 WEST

Cat No 2130 - 0110

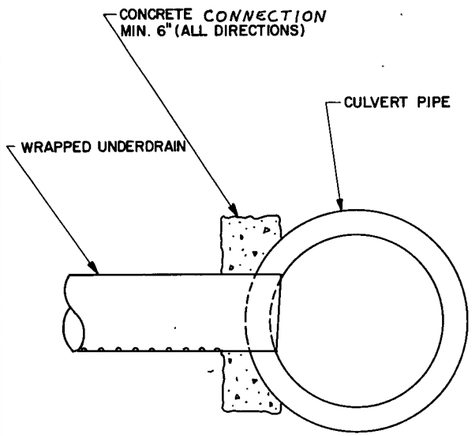
STATE PROJECT NUMBER	SHEET NO.
1442-01-73	2.0

CONSTRUCTION DETAILS

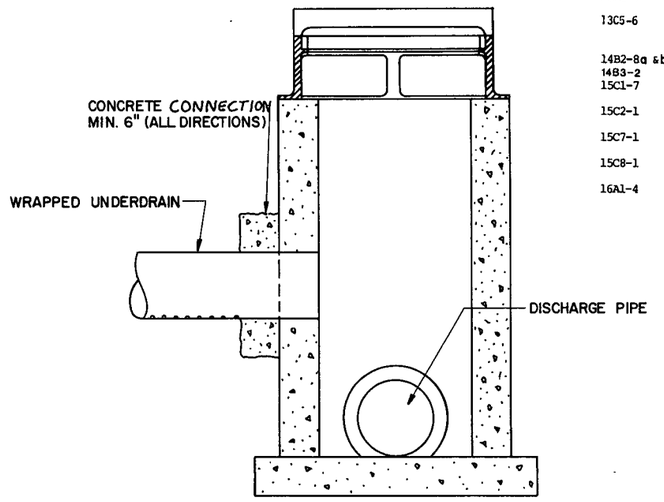
[redacted]

KNOWN UTILITIES ON PROJECT

COMPANY	ADDRESS	REPRESENTATIVE	PHONE NO.
WISCONSIN POWER AND LIGHT	883 West Scott St. Fond du Lac, WI 54935	MR. JIM DRYSEN	1-608-252-3053
WISCONSIN BELL, INC.	70 East Division Fond du Lac, WI 54935	MR. ROGER KIMBALL	1-414-929-1012
LAKESIDE CABLEVISION	254 Winnebago Dr. Fond du Lac, WI 54935	MR. JIM BROWN	1-414-923-4390
DIGGERS HOTLINE SERVICE			1-800-242-8511



WRAPPED UNDERDRAIN, 6-INCH
TO CULVERT PIPE CONNECTION

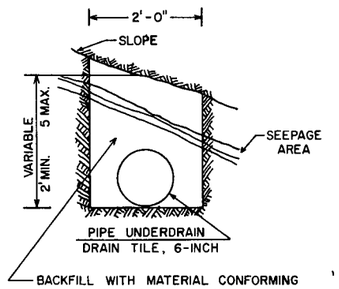


NOT TO SCALE

WRAPPED UNDERDRAIN, 6-INCH
TO INLET CONNECTION

STANDARD DETAIL DRAWINGS

S.D.D. NO.	TITLE
8A5-3a	CATCH BASIN, MANHOLE, AND INLET COVERS
8C1-4	INLETS TYPE 1, 2 & 3
8D1-11	CONCRETE CURB, CONCRETE CURB & GUTTER AND PAVEMENT TIES
8D4-1	CONCRETE SURFACE DRAIN
8E4-2	SOD OR MASONRY AND SOD DITCH CHECKS
8E7-1	EROSION MAT
8E8-1	TYPICAL INSTALLATIONS OF EROSION BALES
8E9-2	SILT FENCE
8F1-9	APRON ENDWALLS FOR CULVERT PIPE AND PIPE ARCHES
8F4-3	JOINT TIES FOR CONCRETE PIPE
9A1-6a	AT-GRADE SIDE ROAD INTERSECTION, TYPES "B" AND "C"
9A1-6b	AT-GRADE SIDE ROAD INTERSECTION, TYPE "A" AND PASSING LANES
13C1-7	CONCRETE PAVEMENT LONGITUDINAL JOINTS AND PAVEMENT TIES
13C5-6	TRANSVERSE JOINTS IN NON-REINFORCED CONCRETE PAVEMENT (RANDOM SPACED & SKEWED TRANSVERSE JOINTS)
14B2-8a &b	CLASS "A" STEEL PLATE BEAM GUARD (TWO SHEETS)
14B3-2	CLASS 'B' STEEL PLATE BEAM GUARD
15C1-7	CONSTRUCTION BARRICADES & STANDARD SIGNS
15C2-1	TRAFFIC CONTROL TO CLOSE HIGHWAY UNDER CONSTRUCTION
15C7-1	PAVEMENT MARKING SYMBOLS
15C8-1	PAVEMENT MARKING
16A1-4	LANDMARK REFERENCE MONUMENTS AND COVERS



BACKFILL WITH MATERIAL CONFORMING TO THE REQUIREMENTS FOR FINE AGGREGATES FOR P.C. CONCRETE PAVEMENT DISCHAGE ENDS OF PIPE TO BE PROTECTED WITH APPROVED GRATINGS OR SCREENS SECURELY FASTENED IN PLACE IF DISCHARGE IS DIRECTLY TO DITCH.

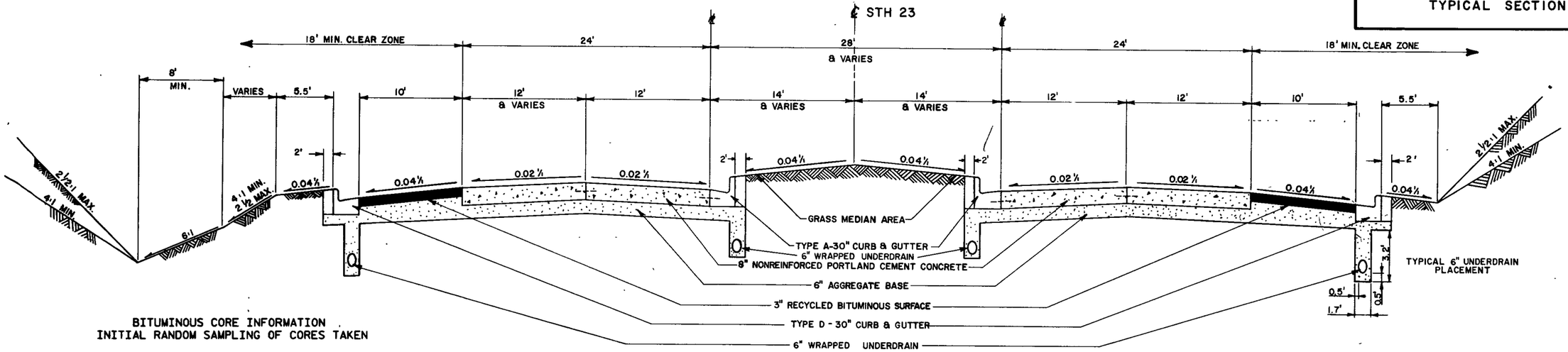
GENERAL NOTES

1. WHEN THE QUANTITY OF THE ITEMS OF BASE OR SURFACE COURSE IS MEASURED FOR PAYMENT BY THE TON, THE DEPTH OF THICKNESS OF THE COURSE SHOWN ON THE PLANS IS APPROXIMATE AND THE ACTUAL THICKNESS WILL DEPEND ON THE DISTRIBUTION OF THE MATERIAL AS DIRECTED BY THE ENGINEER.
2. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.
3. NO TREES OR SHRUBS ARE TO BE REMOVED UNLESS INDICATED FOR REMOVAL BY THE ENGINEER IN THE FIELD.
4. EXACT LOCATION OF PRIVATE ENTRANCES AND DRIVEWAY CULVERTS IS TO BE DETERMINED IN THE FIELD BY THE ENGINEER.
5. THE COST OF CONNECTING CULVERT PIPE, STORM SEWER PIPE OR DRAIN TILES TO EXISTING DRAINAGE STRUCTURES SHALL BE INCIDENTAL TO OTHER CONSTRUCTION ITEMS.
6. ALL HOLES OR OPENINGS BELOW SUBGRADE RESULTING FROM THE ABANDONMENT OR REMOVAL OF EXISTING STRUCTURES SHALL BE BACKFILLED WITH GRANULAR BACKFILL.
7. FERTILIZE ALL SODDED AND SEEDED AREAS. MULCH ALL SEEDED AREAS.
8. CURB AND GUTTER JOINT SPACING SHALL BE 20-FEET UNLESS OTHERWISE AUTHORIZED BY THE ENGINEER IN THE FIELD.
9. ELEVATIONS SHOWN FOR CURB AND GUTTER ARE FLANGE ELEVATION DISTANCES SHOWN FOR CURB AND GUTTER IN RADII ARE MEASURED ALONG FLANGE.
10. ELEVATIONS FOR PIPE UNDERDRAIN TO BE DETERMINED BY THE ENGINEER IN THE FIELD.
11. BROKEN CONCRETE SHALL NOT BE USED AS RIPRAP OR HEAVY RIPRAP.
12. BITUMINOUS SURFACE WHERE INDICATED ON THE PLAN, SHALL CONSIST OF COURSES AS FOLLOWS, UNLESS OTHERWISE NOTED ON THE PLAN.

3" DEPTH	1 1/2" LOWER LAYER 1 1/2" UPPER LAYER
3 1/2" DEPTH	2" LOWER LAYER 1 1/2" UPPER LAYER
5" DEPTH	2-2" LOWER LAYER 1 1/2" UPPER LAYER
4" DEPTH	2" LOWER LAYER 2" UPPER LAYER

STATE PROJECT NUMBER	SHEET NO.
1442 - 01-73	2.1

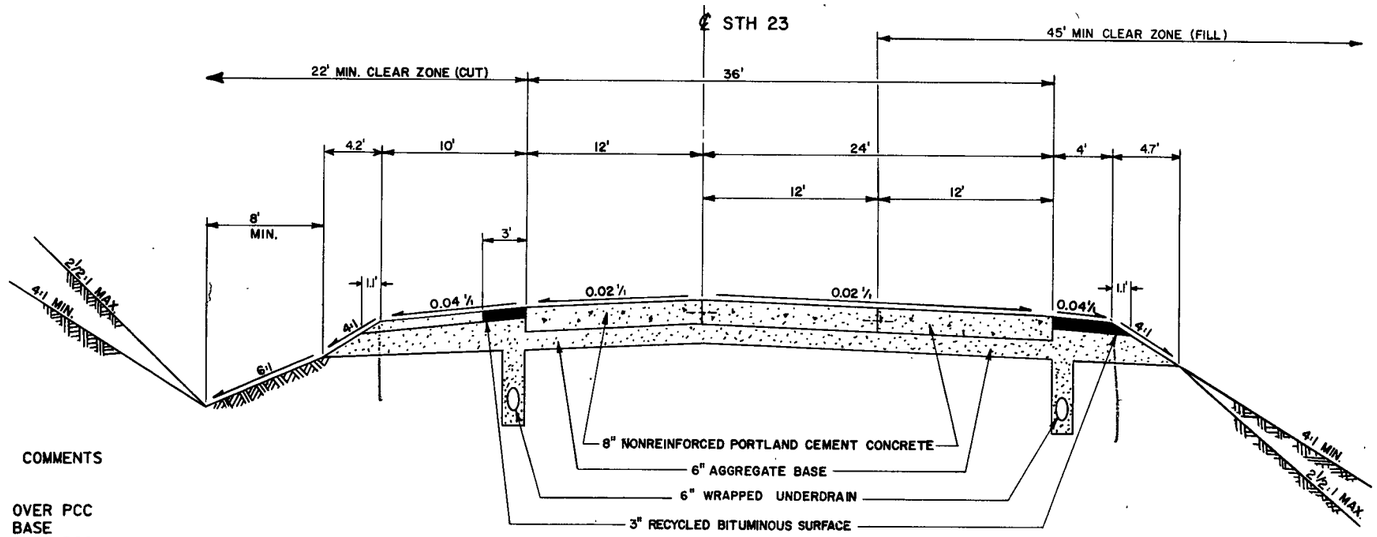
TYPICAL SECTION



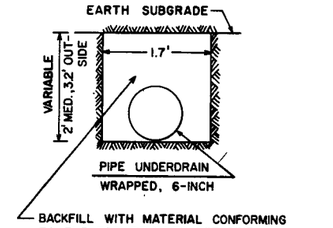
TYPICAL SECTION
STATION 139+50.00 TO STATION 168 + 61.43

BITUMINOUS CORE INFORMATION
INITIAL RANDOM SAMPLING OF CORES TAKEN

SIEVE SIZE	GRADE #3 SPEC'S % PASS	CORES 1-2-3	CORES 4-5	CORES 6-7	AVE.
1"	100	100	---	100	100
3/4"	100	99	100	96	98
1/2"	95-100	87	94	83	88
3/8"	75-100	75	85	74	78
#4	45-85	55	62	52	56
#8	30-60	42	48	39	43
#50	10-30	14	20	15	26
#200	5-12	8.7	9.5	9.3	9.2
RESIDUAL PENETRATION @ 77° F		48	20	49	39
AC%		4.9	4.9	4.8	4.9
ABS VISCOSITY (POISES AT 140° F)		2590	16,700	2460	7250



TYPICAL SECTION
STATION 168+61.43 TO STATION 191+82.26



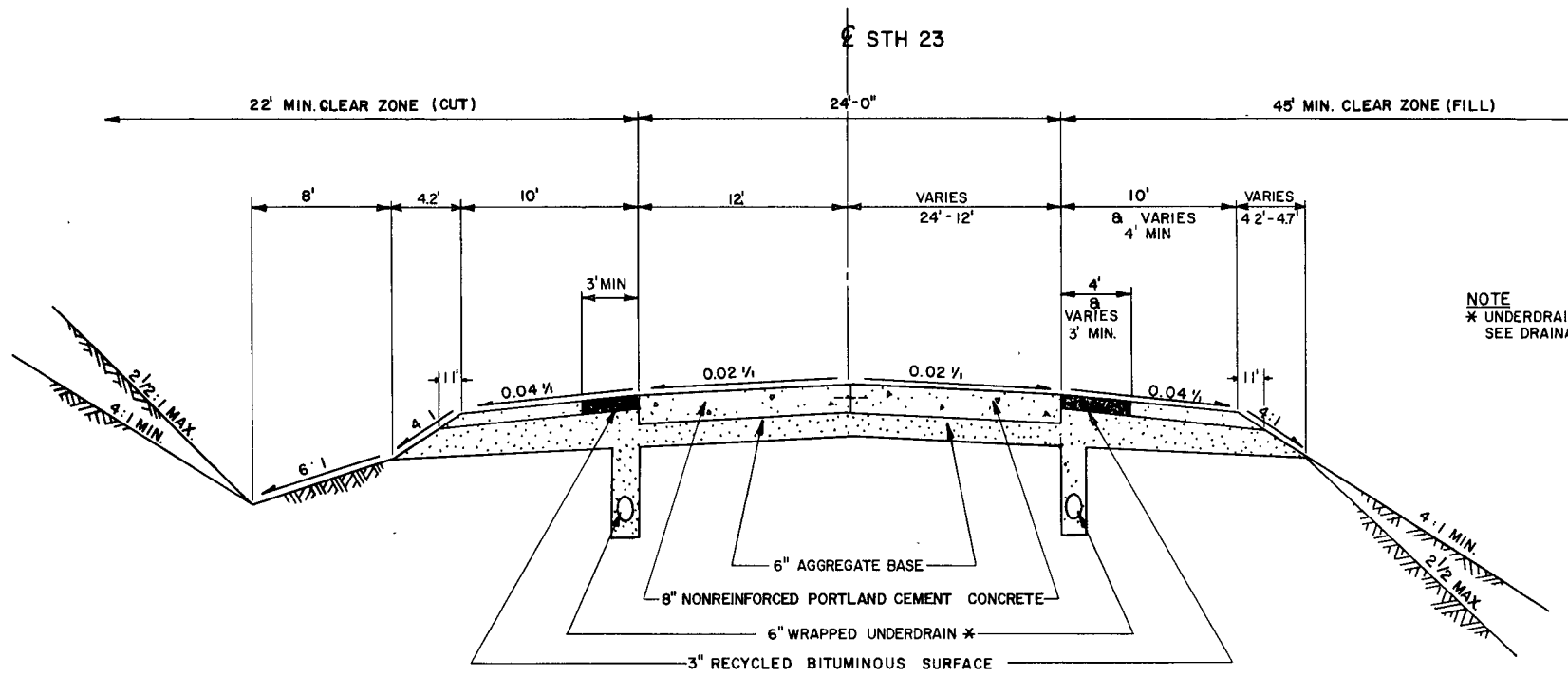
BACKFILL WITH MATERIAL CONFORMING TO THE REQUIREMENTS FOR FINE AGGREGATES FOR P.C. CONCRETE PAVEMENT DISCHARGE ENDS OF PIPE TO BE PROTECTED WITH APPROVED GRATINGS OR SCREENS SECURELY FASTENED IN PLACE IF DISCHARGE IS DIRECTLY TO DITCH.

SURFACE BORING LOG

CORE NO.	STATION	LOCATION FROM ℄	BITUMINOUS DEPTH INCHES	COMMENTS
1	142+90	7' RT.	6-1/2	OVER PCC
2	162+90	9' RT.	3-1/4	BASE
3	182+90	8' RT.	9	OVER PCC
4	202+90	6' LT.	5	OVER PCC
5	172+90	8' LT.	6-1/2	OVER PCC
6	172+90	6' LT.	4-1/4	OVER PCC
7	152+90	6' LT.	7	OVER PCC

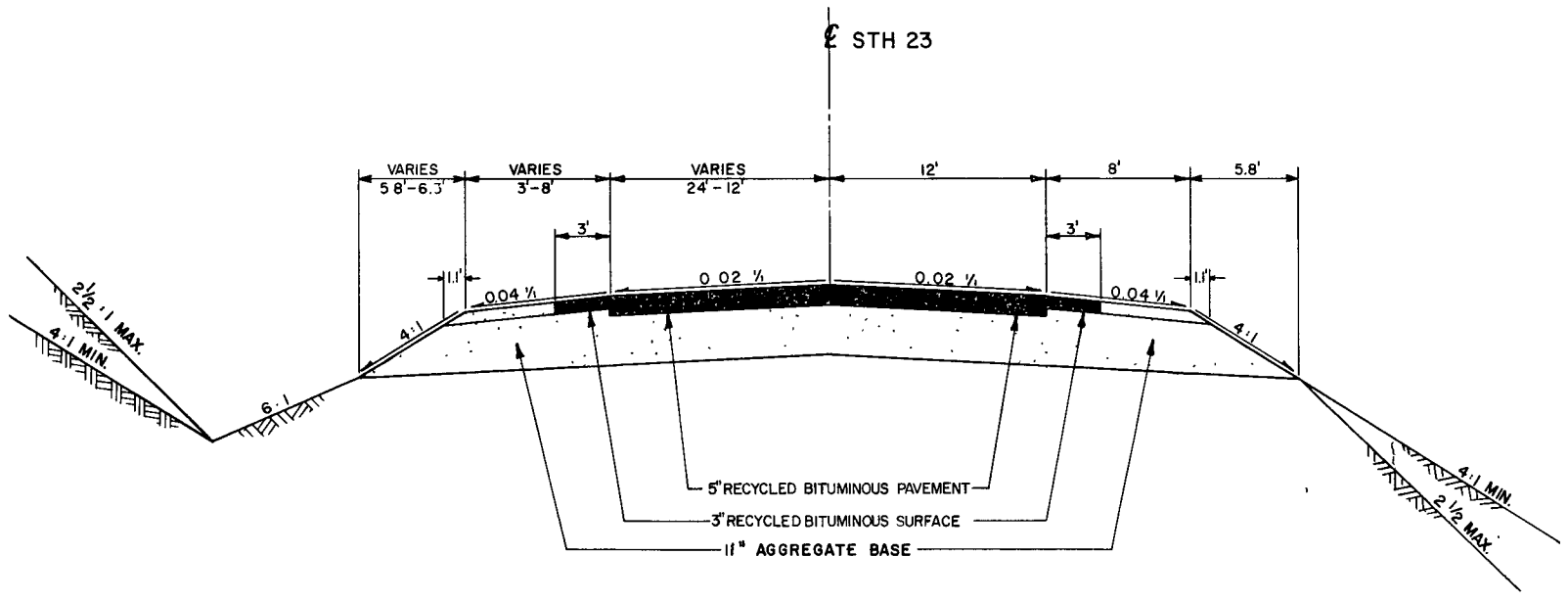
STATE PROJECT NUMBER	SHEET NO.
1442 - 01-73	2.2

TYPICAL SECTIONS



NOTE
* UNDERDRAIN PLACEMENT ENDS AT STA. 203+00, SEE DRAINAGE PLAN FOR DETAILS.

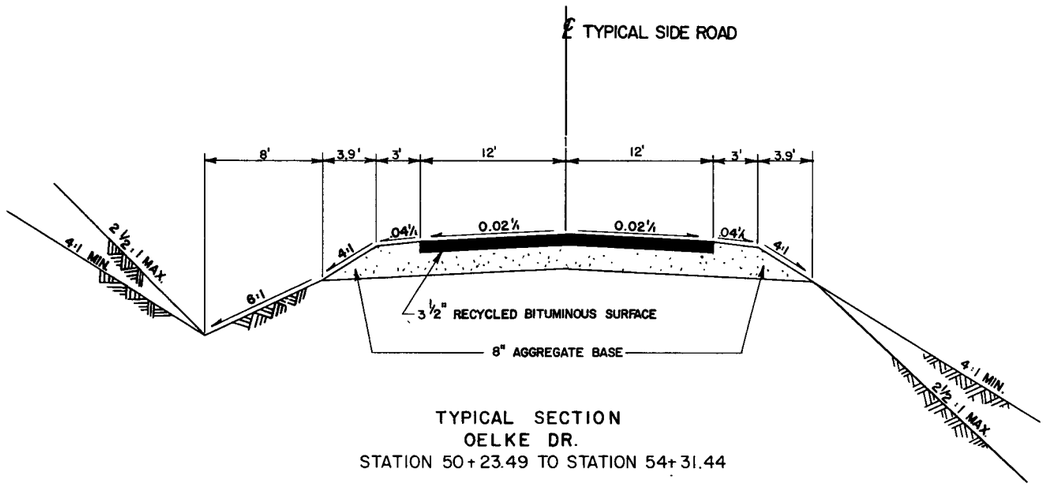
TYPICAL SECTION
STATION 191 + 82.26 TO STATION 206 + 24.12



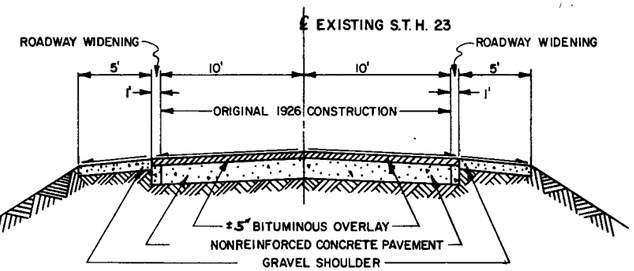
TYPICAL SECTION
(INTERIM CONNECTION)
STATION 206 + 24.12 TO STATION 211 + 00.00

STATE PROJECT NUMBER	SHEET NO.
1442-01-73	2.3

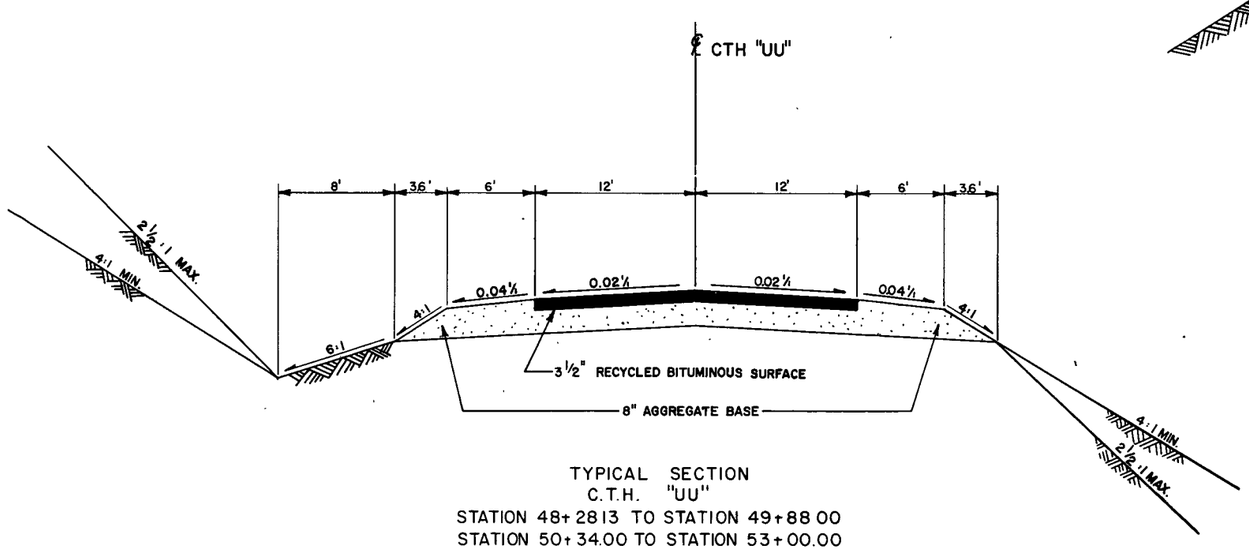
TYPICAL SECTIONS



TYPICAL SECTION
OELKE DR.
STATION 50+23.49 TO STATION 54+31.44



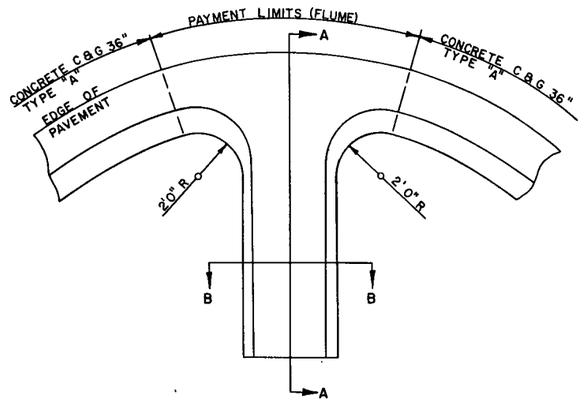
TYPICAL SECTION
EXISTING S.T.H. 23



TYPICAL SECTION
C.T.H. "UU"
STATION 48+28.13 TO STATION 49+88.00
STATION 50+34.00 TO STATION 53+00.00

STATE PROJECT NUMBER	SHEET NO.
1442-01-73	2.4

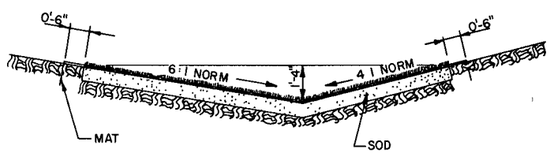
CONSTRUCTION DETAILS



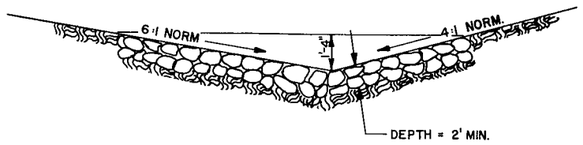
CONCRETE FLUME
IN RADII AT C.T.H. UU INTERSECTION

NOTE : WELDED STEEL WIRE FABRIC TO BE PLACED FROM PAVEMENT EDGE TO END OF CURB RADIUS. REMAINING PORTION OF OPEN CONCRETE FLUME TO BE REINFORCED WITH # 4 BARS AS SHOWN IN SECTIONS "A-A" AND "B-B".

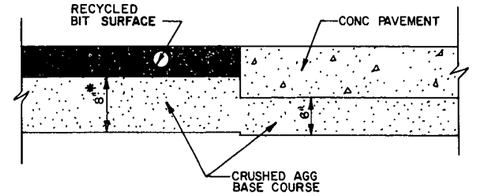
CONCRETE FLUME SHALL BE PAID FOR AS PROVIDED IN THE STANDARD SPECIFICATIONS FOR CONCRETE SURFACE DRAINS,



DETAIL PLACEMENT OF SOD AND EROSION MAT IN DITCH

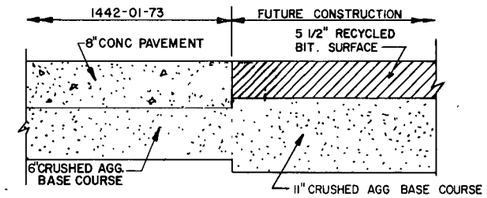


DETAIL PLACEMENT OF RIPRAP IN DITCH

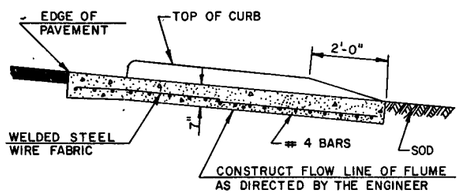


*11" AT S.T.H. 23 STA. 208+00

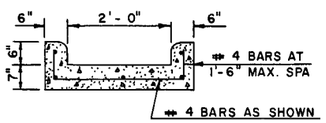
BUTT JOINT DETAIL-A
OELKE DR.
C.T.H. UU
S.T.H. 23, STA. 206+00



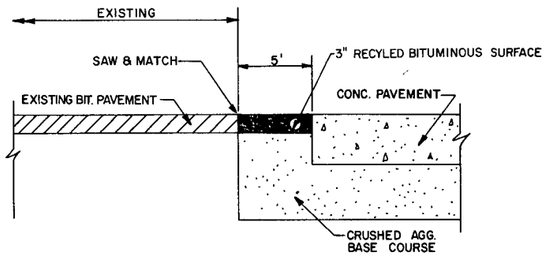
BUTT JOINT DETAIL
S.T.H. 23
STA. 206+24



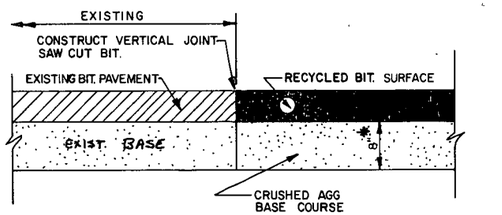
SECTION A-A



SECTION B-B



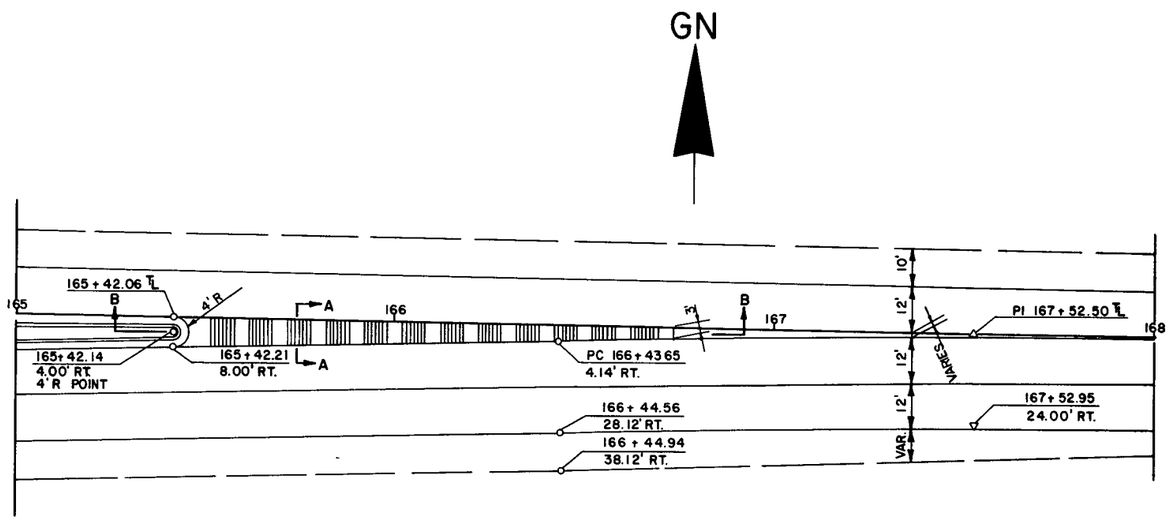
BUTT JOINT DETAIL
MARYHILL PARK DRIVE



*11" AT STH 23 STA. 211+00

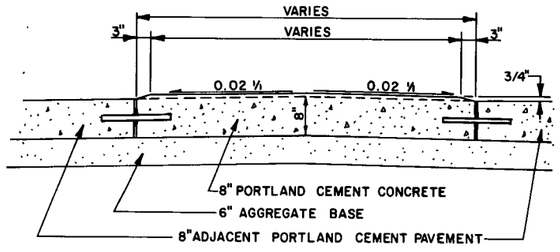
BUTT JOINT DETAIL-B
OELKE DR.
C.T.H. UU
S.T.H 23, STA. 211+00

STATE PROJECT NUMBER	SHEET NO.
1442-01-73	2.5
CONCRETE CORRUGATED MEDIAN S.T.H. 23	

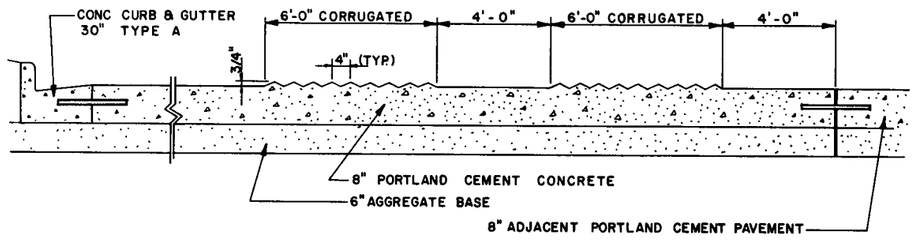


PLAN VIEW
SCALE 1" = 20'

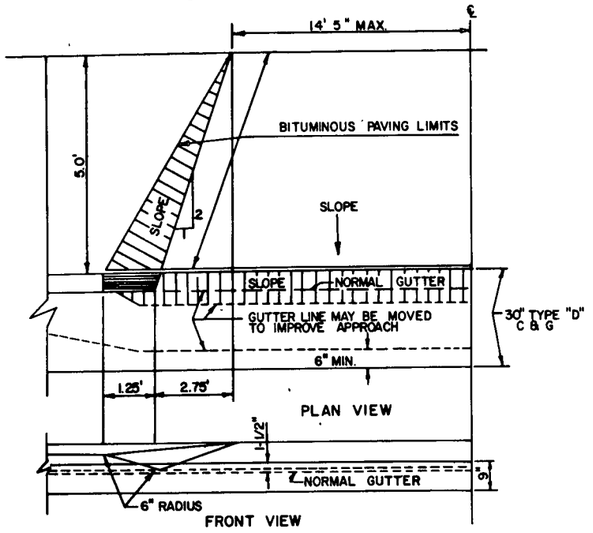
NOTE:
ALSO SEE 20 SCALE DETAIL SHEET.

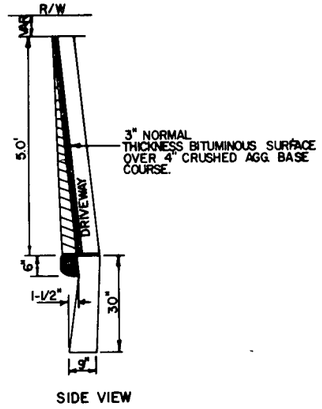


SECTION A-A
SCALE 3/4" = 1'-0"

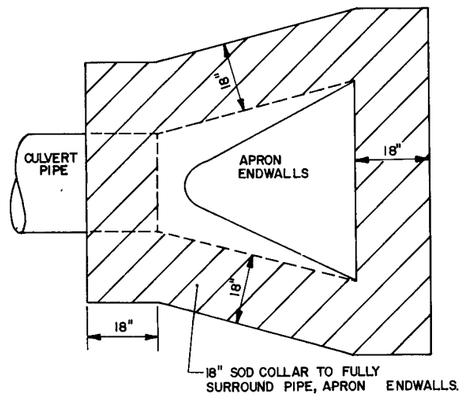


SECTION B-B
SCALE 3/4" = 1'-0"



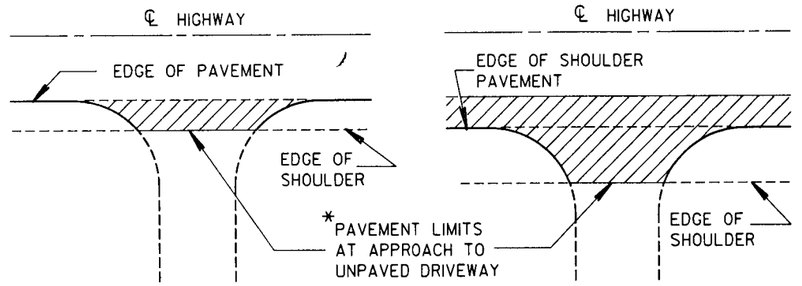


BITUMINOUS DRIVEWAY DETAIL



NOTE· SOD COLLAR IS NOT REQ'D. ON STORM SEWER OUTLET.

SOD COLLAR DETAIL

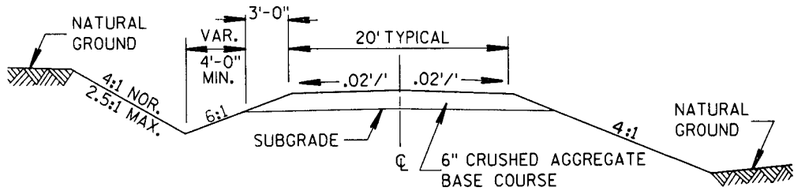


*WHERE DRIVEWAY IS PAVED, APPROACH PAVEMENT SHOULD BE EXTENDED TO MATCH DRIVEWAY PAVEMENT.

PLAN VIEW

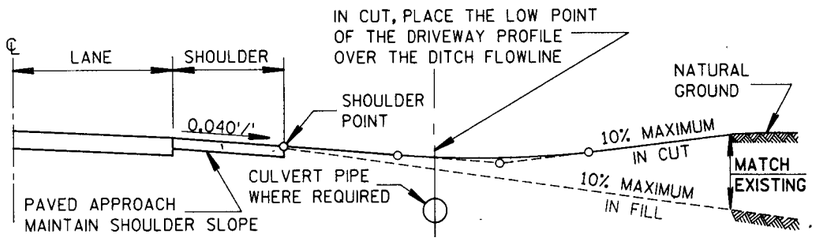
PLAN VIEW (PAVED SHOULDER ON HIGHWAY)

RURAL DRIVEWAY INTERSECTION DETAIL



IN CUT IN FILL

TYPICAL CROSS SECTION FOR PRIVATE DRIVE OR FIELD ENTRANCE

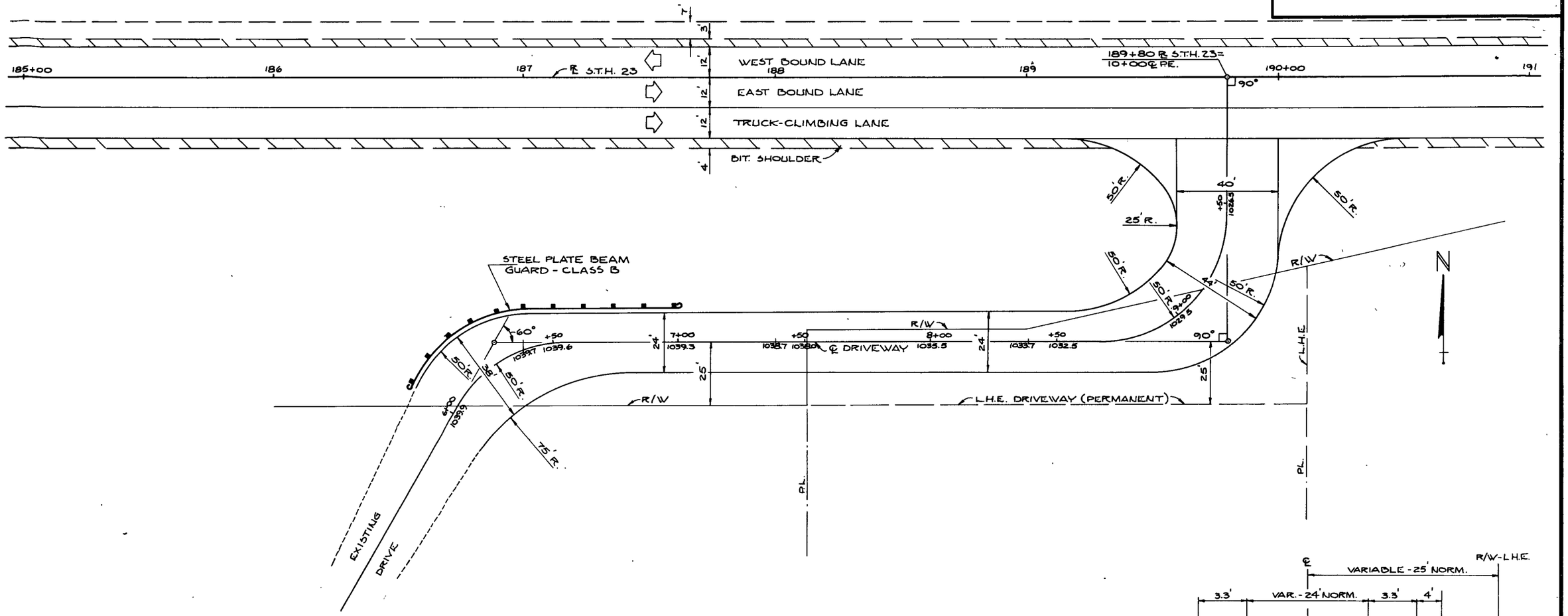


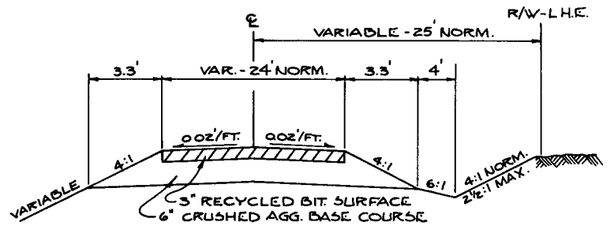
TYPICAL DRIVEWAY PROFILES

LEVELS ON - 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63

STATE PROJECT NUMBER	SHEET NO.
1442 - 01 - 73	2.7

CONSTRUCTION DETAILS

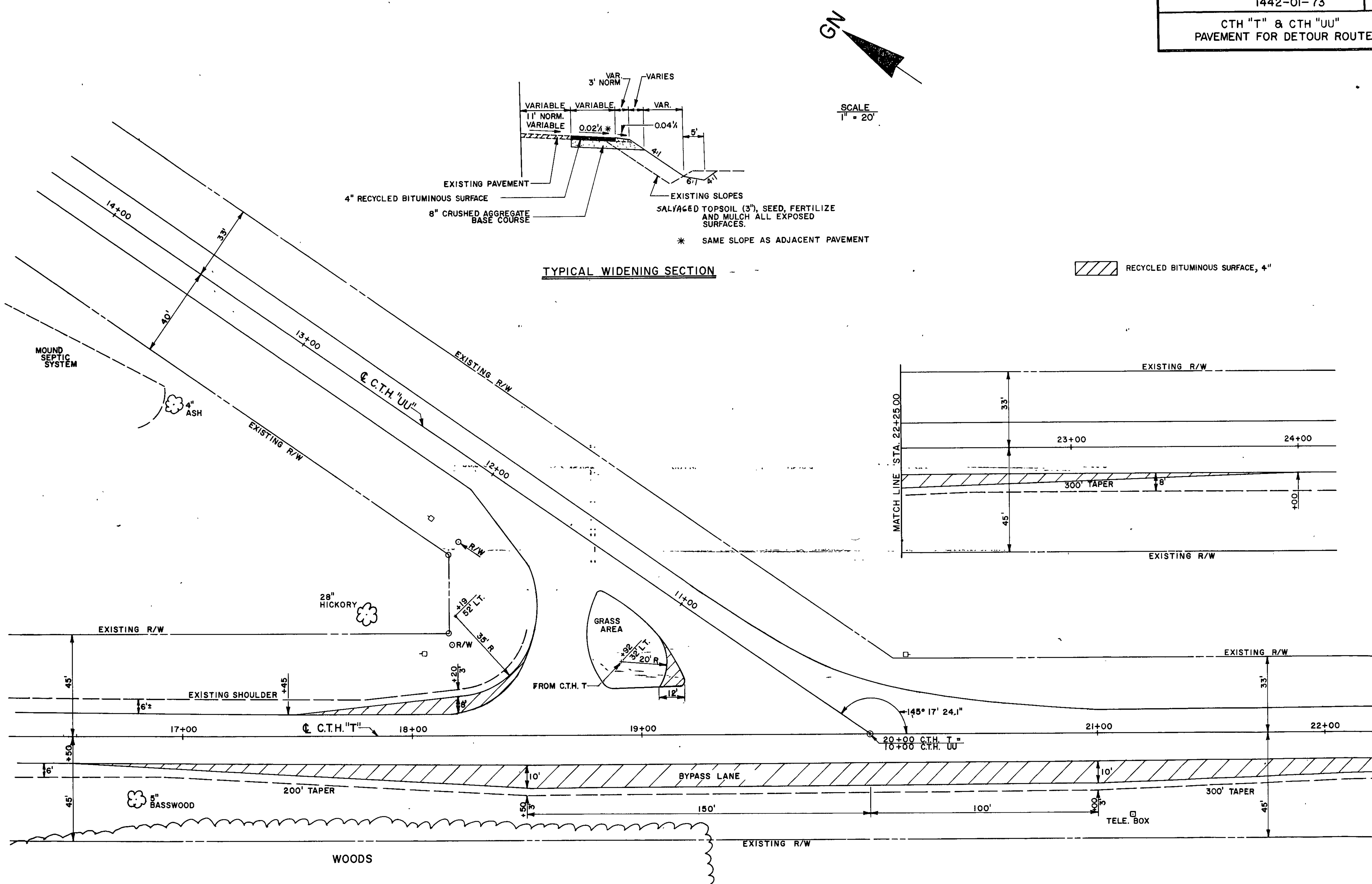




TYPICAL SECTION
DRIVEWAY

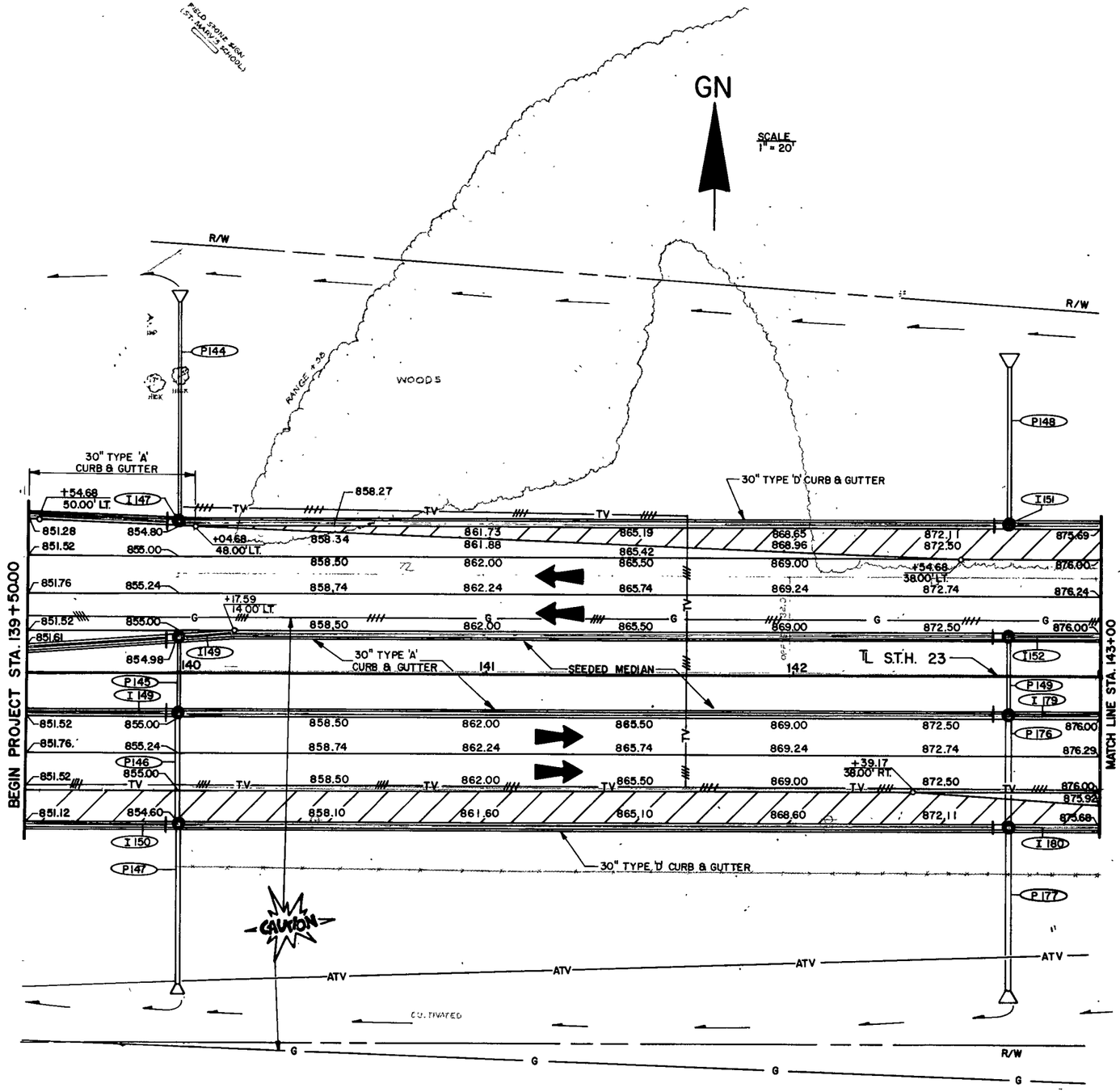
STATE PROJECT NUMBER	SHEET NO.
1442-01-73	2.8

CTH "T" & CTH "UU"
PAVEMENT FOR DETOUR ROUTE



STATE PROJECT NUMBER	SHEET NO.
1442-01-73	2.9

PAVING DETAILS
S.T.H. 23 & C.T.H. "K"

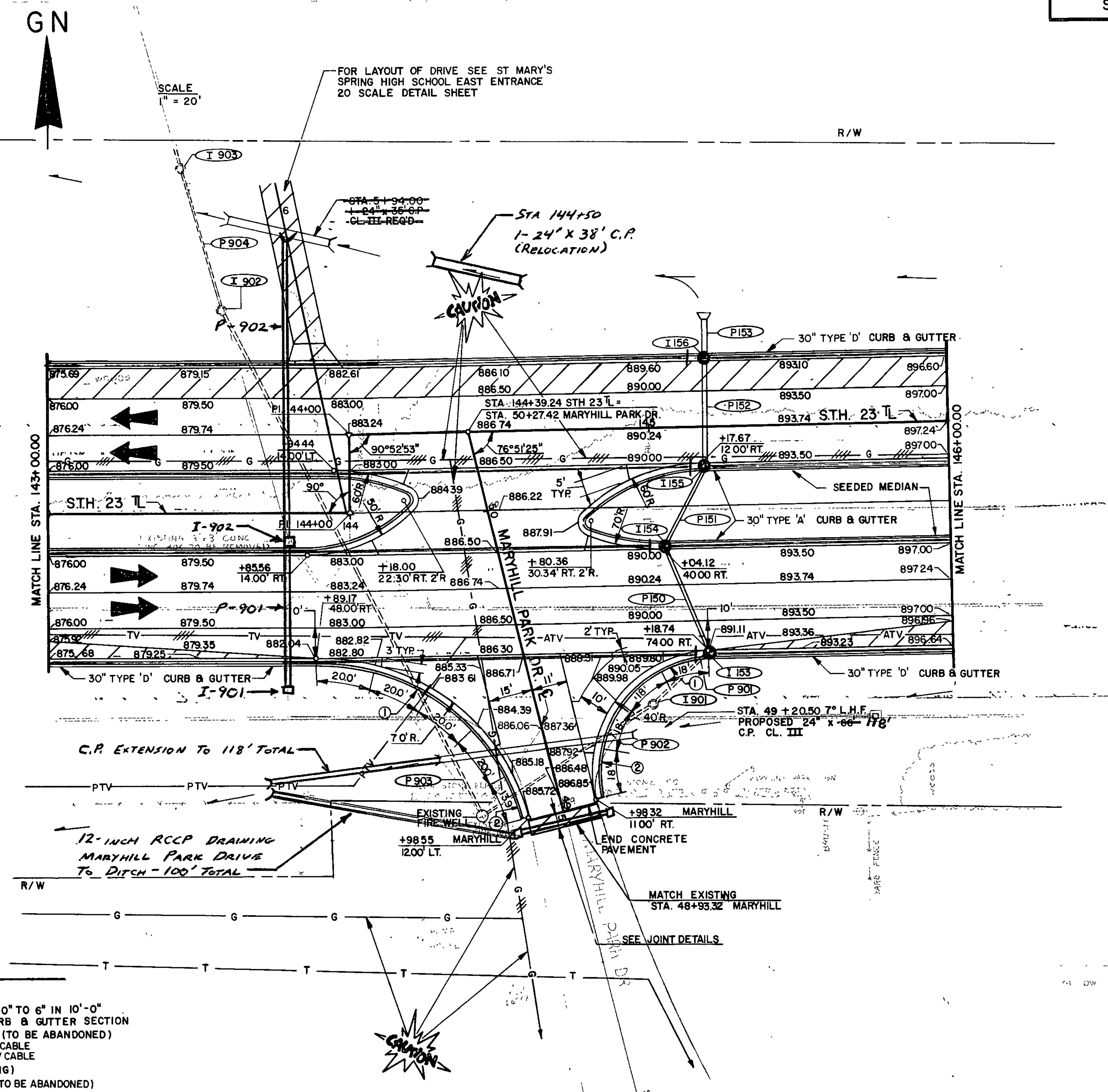


— 6" WRAPPED UNDERDRAIN
⊢ END CAP
● DISCHARGE INTO INLET

LEGEND
- TV AERIAL TV CABLE (TO BE ABANDONED)
- ATV PROPOSED AERIAL TV CABLE
- G EXISTING GAS MAIN (TO BE ABANDONED)
- G PROPOSED 4" GAS MAIN
- RECYCLED BITUMINOUS SURFACE

STATE PROJECT NUMBER	SHEET NO.
1442-01-73	2.10

PAVING DETAILS
S.T.H. 23 AND MARYHILL PARK DR.



— 6" WRAPPED UNDERDRAIN
⊢ END CAP
⊖ DISCHARGE INTO INLETS

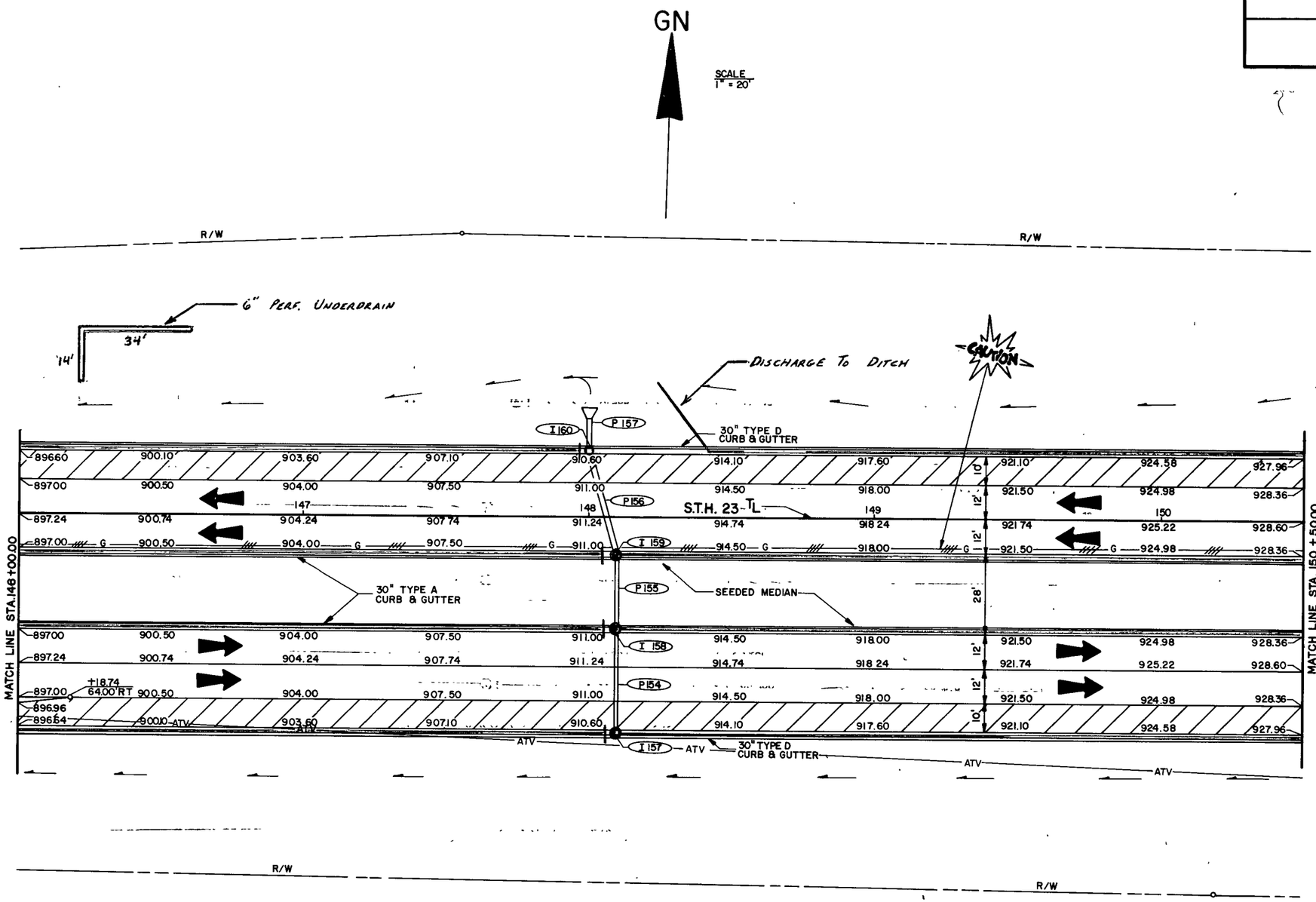
NOTE.
CONSTRUCTION OF THE 900 SERIES INLETS AND PIPES ALONG WITH THEIR INVERTS SHALL BE DETERMINED BY THE FIELD ENGINEER. QUANTITIES HAVE BEEN INCLUDED IN QUANTITIES ESTIMATE.

LEGEND
① TYPE A - 30" CURB & GUTTER
② TAPER CURB HEIGHT 0" TO 6" IN 10'-0" LENGTH AT ENDS OF CURB & GUTTER SECTION
—TV/// AERIAL TV CABLE (TO BE ABANDONED)
—ATV— EXISTING AERIAL TV CABLE
-PTV— PROPOSED AERIAL TV CABLE (TO TIE INTO EXISTING)
///G — EXISTING GAS MAIN (TO BE ABANDONED)
—G— PROPOSED 8" GAS MAIN
—T— EXISTING UNDERGROUND TELEPHONE CABLE
▨ RECYCLED BITUMINOUS SURFACE

Cat. No 2130 - D14?

STATE PROJECT NUMBER	SHEET NO.
1442-01-73	2.11

PAVING DETAILS - S.T.H. 23



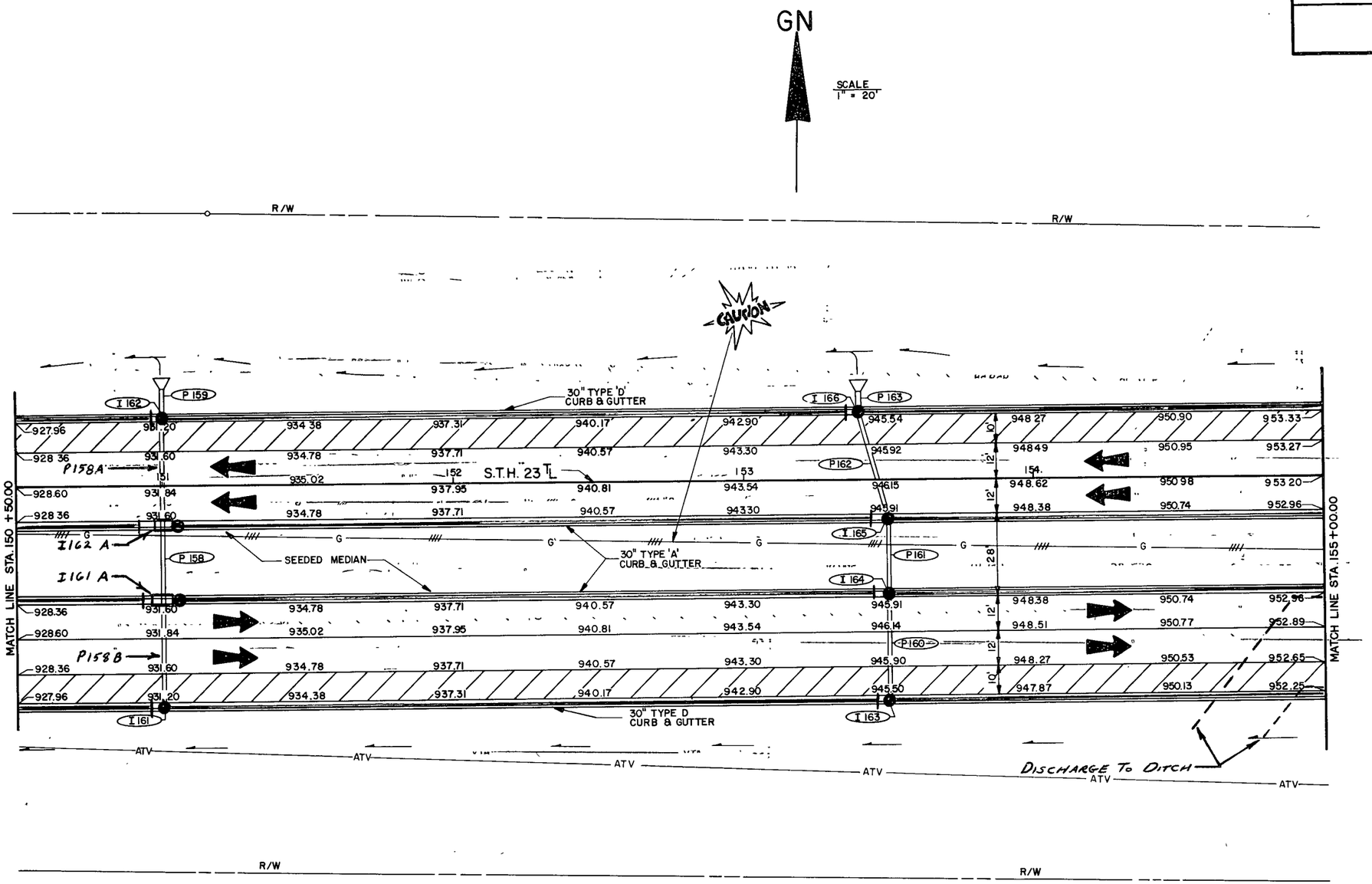
LEGEND

—ATV— EXISTING AERIAL TV CABLE
—G— EXISTING GAS MAIN (TO BE ABANDONED)
RECYCLED BITUMINOUS SURFACE

6" WRAPPED UNDERDRAIN
END CAP
DISCHARGE INTO INLET

STATE PROJECT NUMBER	SHEET NO.
1442-01-73	2.12

PAVING DETAILS - S.T.H. 23



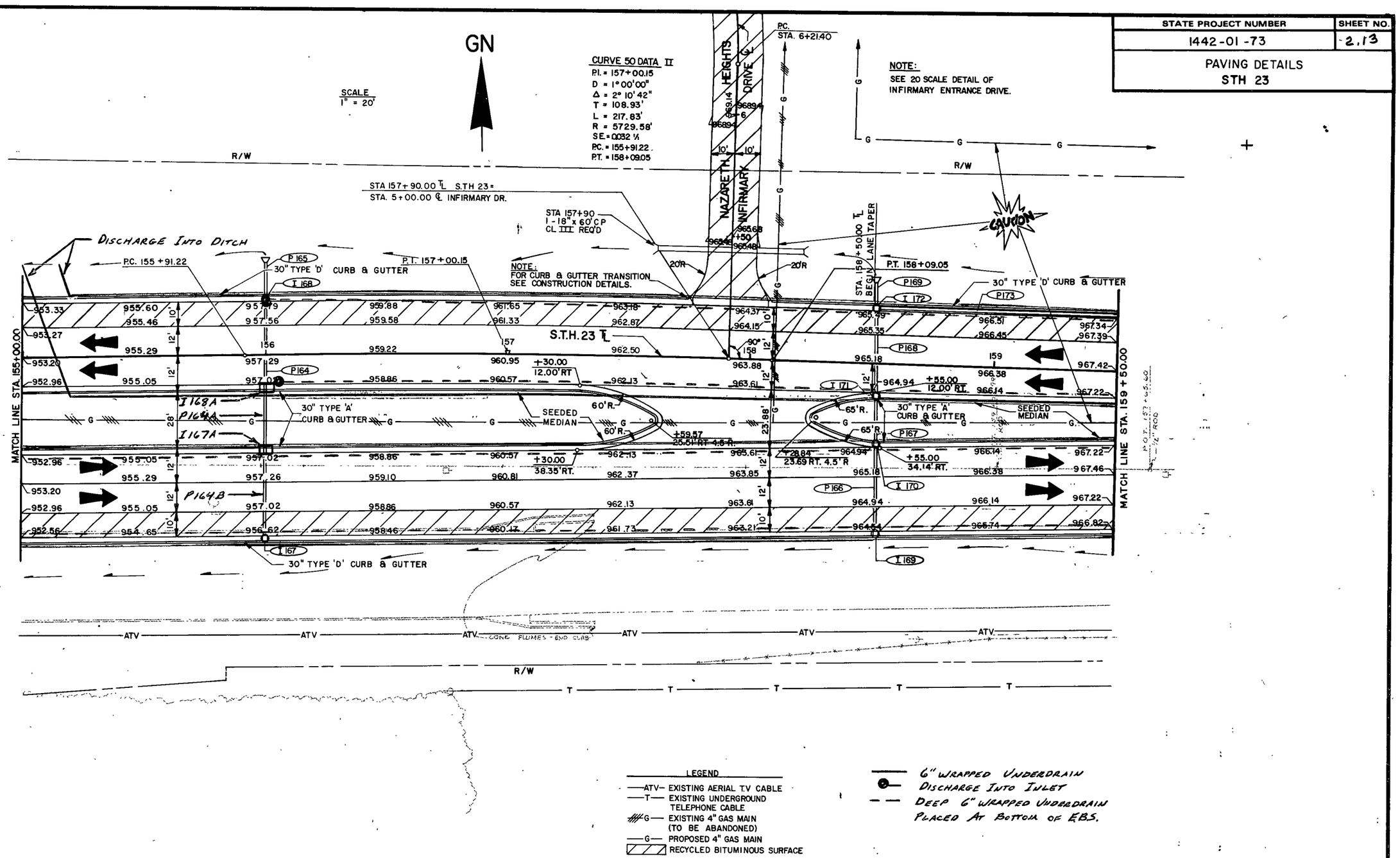
LEGEND

—ATV— EXISTING AERIAL TV CABLE
-###-G— EXISTING GAS MAIN (TO BE ABANDONED)
RECYCLED BITUMINOUS SURFACE

6" WRAPPED UNDERDRAIN
END CAP
DISCHARGE INTO INLET
DEEP 6" WRAPPED UNDERDRAIN PLACED AT BOTTOM OF EBS.

STATE PROJECT NUMBER	SHEET NO.
1442-01-73	2.13

PAVING DETAILS
STH 23

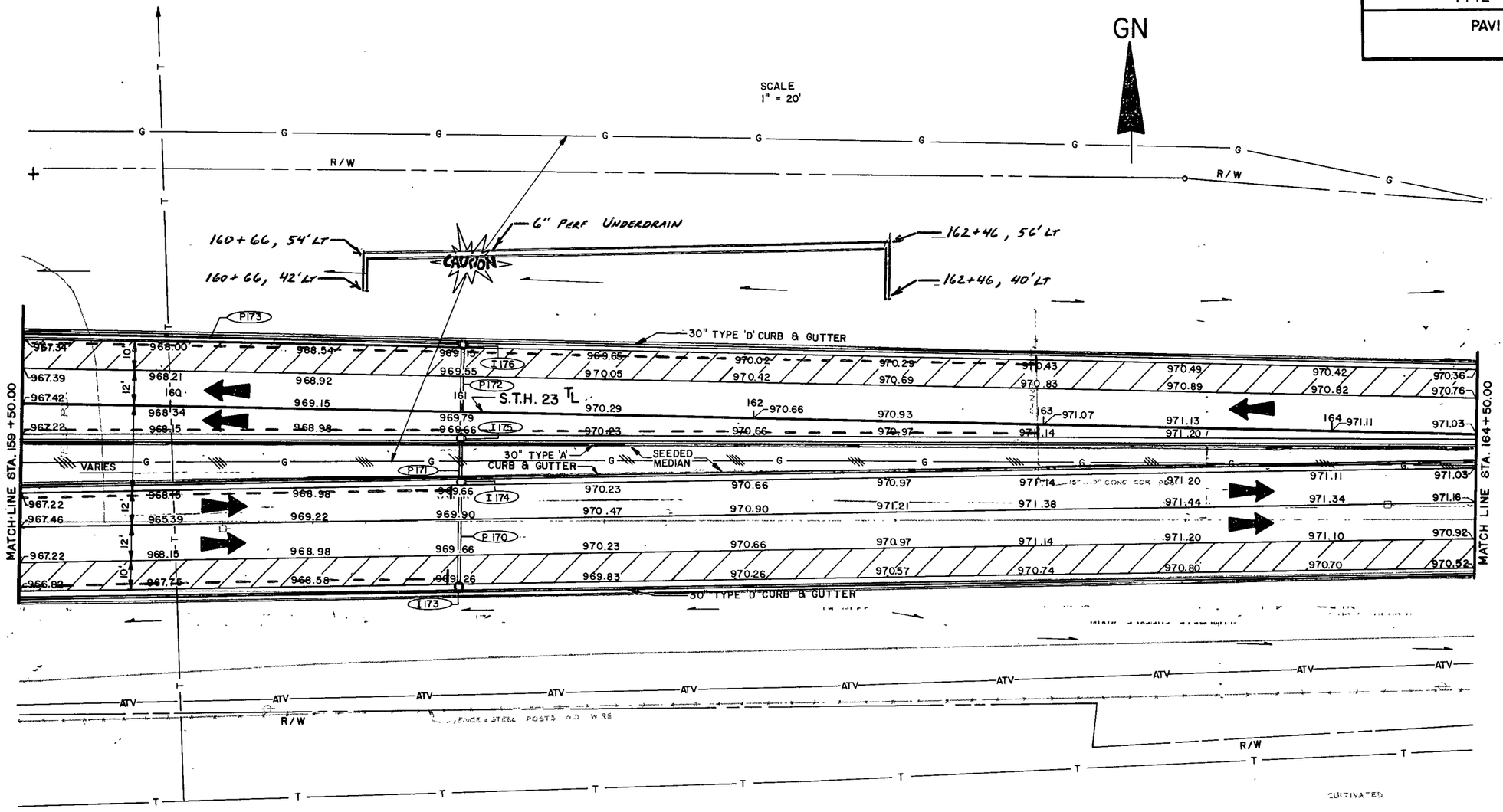


STATE PROJECT NUMBER	SHEET NO.
1442-01-73	2.14

PAVING DETAILS
S.T.H. 23

SCALE
1" = 20'

GN



LEGEND

- —ATV— EXISTING AERIAL T.V CABLE
- —T— EXISTING UNDERGROUND TELEPHONE CABLE
- ###G— EXISTING GAS MAIN (TO BE ABANDONED)
- —G— PROPOSED 4" GAS MAIN
- RECYCLED BITUMINOUS SURFACE

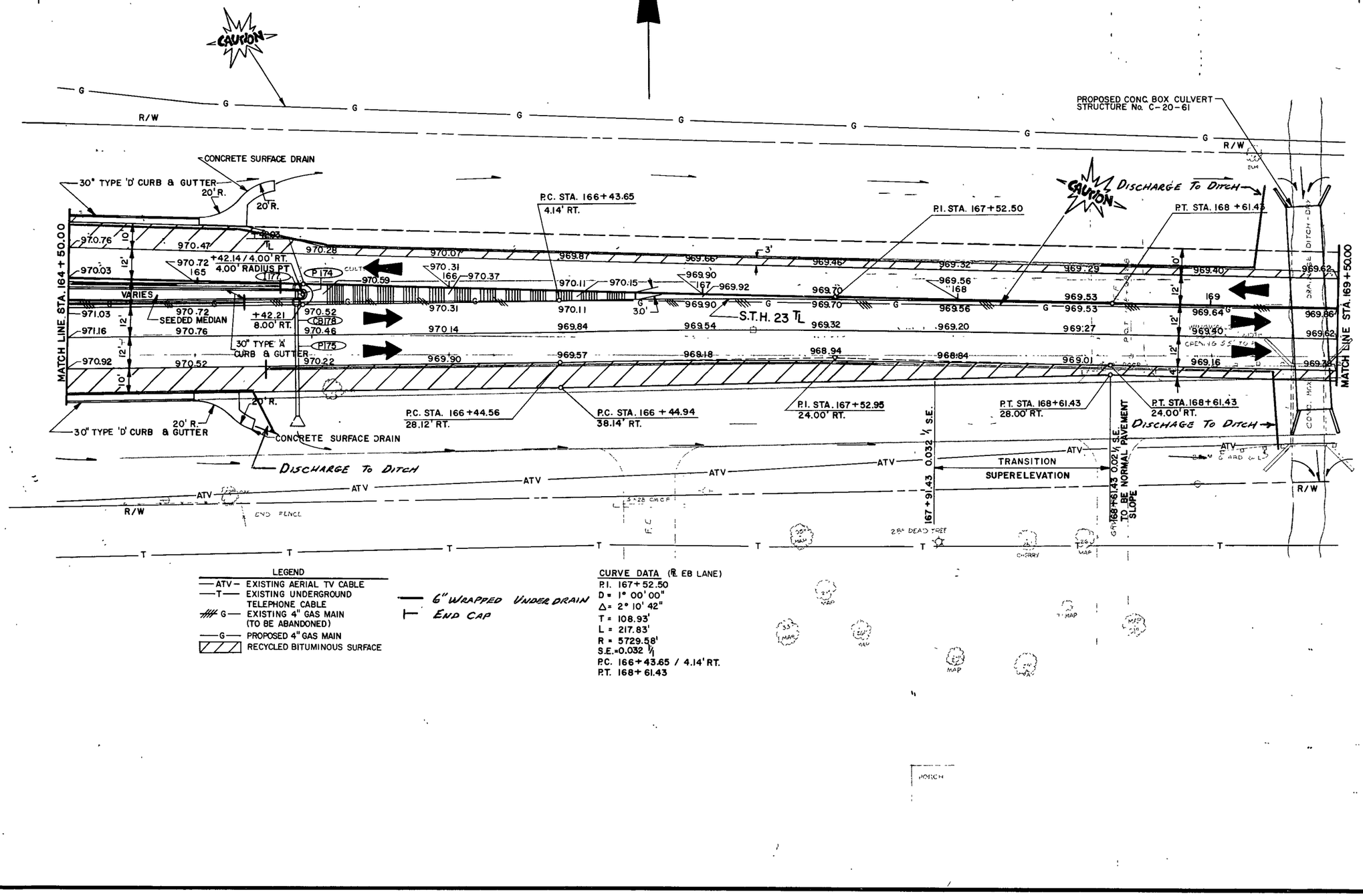
6" WRAPPED UNDERDRAIN
END CAP
DEEP 6" WRAPPED UNDERDRAIN PLACED AT BOTTOM OF EBS

STATE PROJECT NUMBER	SHEET NO.
1442-01-73	2.15

PAVING DETAILS
S.T.H. 23

GN

SCALE
1" = 20'



LEGEND

- —ATV— EXISTING AERIAL TV CABLE
- —T— EXISTING UNDERGROUND TELEPHONE CABLE
- ///G— EXISTING 4" GAS MAIN (TO BE ABANDONED)
- —G— PROPOSED 4" GAS MAIN
- RECYCLED BITUMINOUS SURFACE
- 6" WRAPPED UNDER DRAIN
- ⊢ END CAP

CURVE DATA (℄ EB LANE)
P.I. 167+52.50
D = 1° 00' 00"
Δ = 2° 10' 42"
T = 108.93'
L = 217.83'
R = 5729.58'
S.E.=0.032 ⅛
P.C. 166+43.65 / 4.14' RT.
P.T. 168+61.43

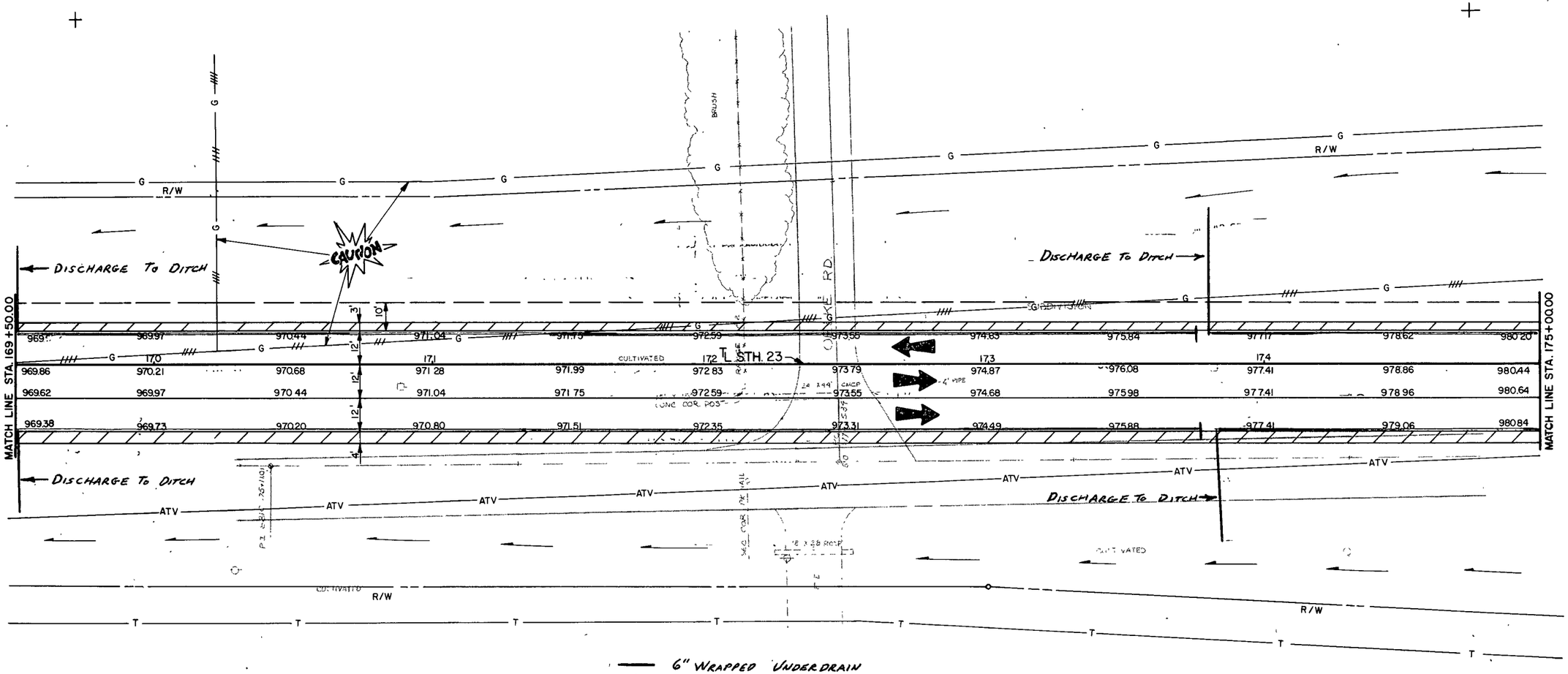
2.15

STATE PROJECT NUMBER	SHEET NO.
1442-01-73	2.16

PAVING DETAILS
S.T.H. '23

GN

SCALE 1"= 20'



LEGEND

—ATV—	EXISTING AERIAL T.V CABLE
—T—	EXISTING UNDERGROUND TELEPHONE CABLE
////G—	EXISTING 4" GAS MAIN (TO BE ABANDONED)
—G—	PROPOSED 4" GAS MAIN
▨	RECYCLED BITUMINOUS SURFACE

STATE PROJECT NUMBER	SHEET NO.
1442-01-73	2,17

PAVING DETAILS
S.T.H. 23 AND OELKE DRIVE

GN

CURVE DATA

P.I. = 176+38.20
D = 1°00'00"
Δ = 2°15'48"
T = 113.18'
L = 226.33'
R = 5729.58
S.E. = 0.032'
P.C. = 175+25.02
P.T. = 177+51.35

CAUTION

OELKE DR. ℄

EXISTING 4" GAS MAIN G

R/W

END CONCRETE PAVEMENT - SEE DETAIL 'A'

PROPOSED GAS MAIN G R/W

+64.60 OELKE 12.00' LT

+93.88 OELKE 12.00' RT.

STA. 50+65 PROPOSED 24" x 74' C.P. CL III REQ'D

DISCHARGE TO DITCH

+62.90 22.00' LT

+62.90 12.00' LT

+87.91 22.00' LT.

+37.91 12.00' LT.

MATCH LINE STA. 175+00.00

MATCH LINE STA. 179+50.00

PC 175+25.02

PI 176+38.20

177+15.91 STH 23 ℄ = 50+01.99 ℄ OELKE DR.

PT 177+51.34

S.T.H. 23 ℄

DISCHARGE TO DITCH

6" WRAPPED UNDERDRAIN

END CAP

LEGEND

- ATV— EXISTING AERIAL T.V. CABLE
- T — EXISTING UNDERGROUND TELEPHONE CABLE
- G — EXISTING GAS MAIN (TO BE ABANDONED)
- G — PROPOSED 4" GAS MAIN
- RECYCLED BITUMINOUS SURFACE

OELKE DR. ℄

S.T.H. 23 ℄

STA. 177+15.91 S.T.H. 23 ℄ = STA. 50+01.99 ℄ OELKE DR.

PT 177+51.34

89°57'04"

PI 176+38.20

AHEAD TANGENT

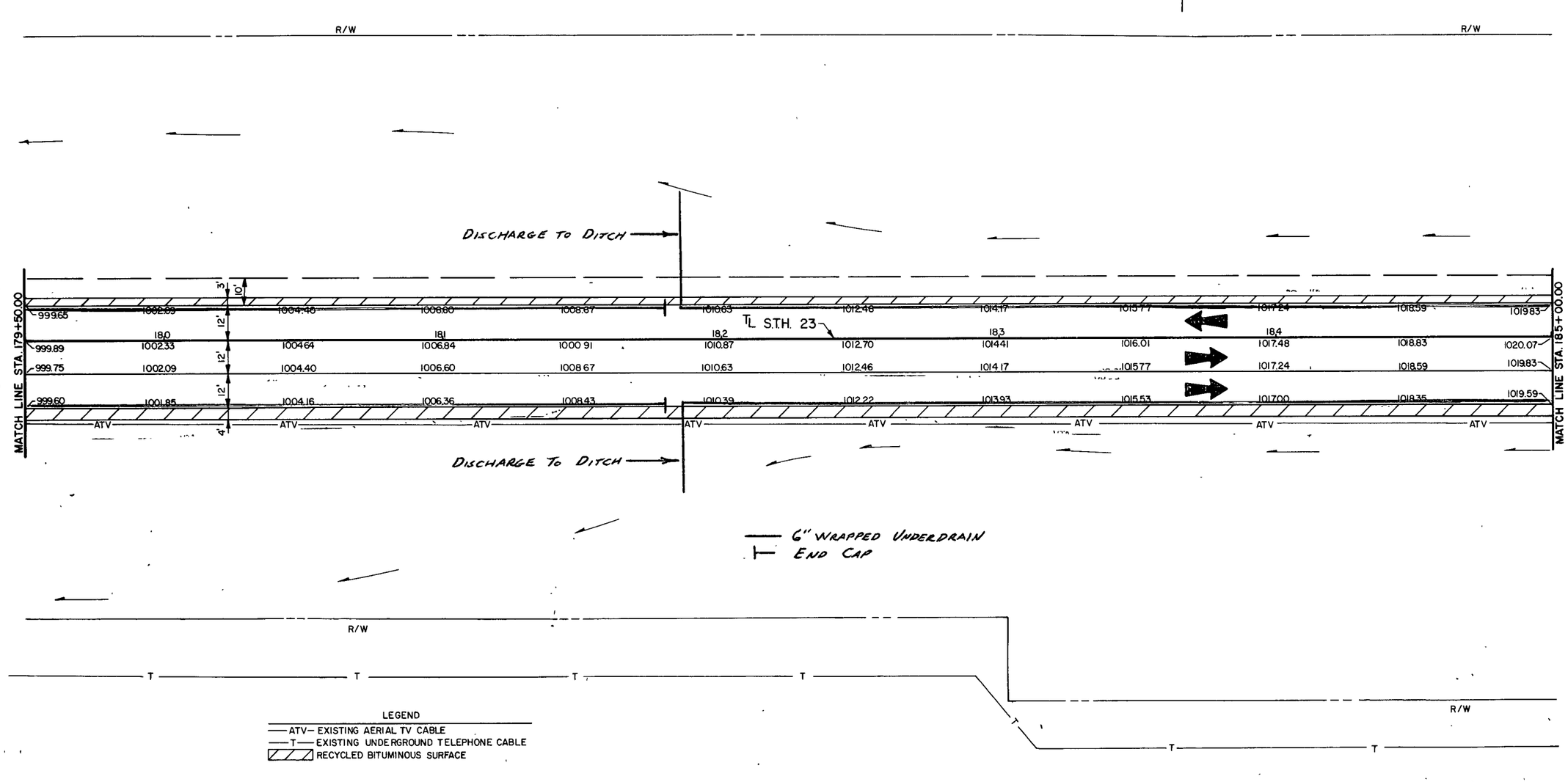
STA. 177+15.91 BACK ON AHEAD TANGENT STA. 50+01.88 ℄ OELKE DR.

STATE PROJECT NUMBER	SHEET NO.
1442-01-73	2.18

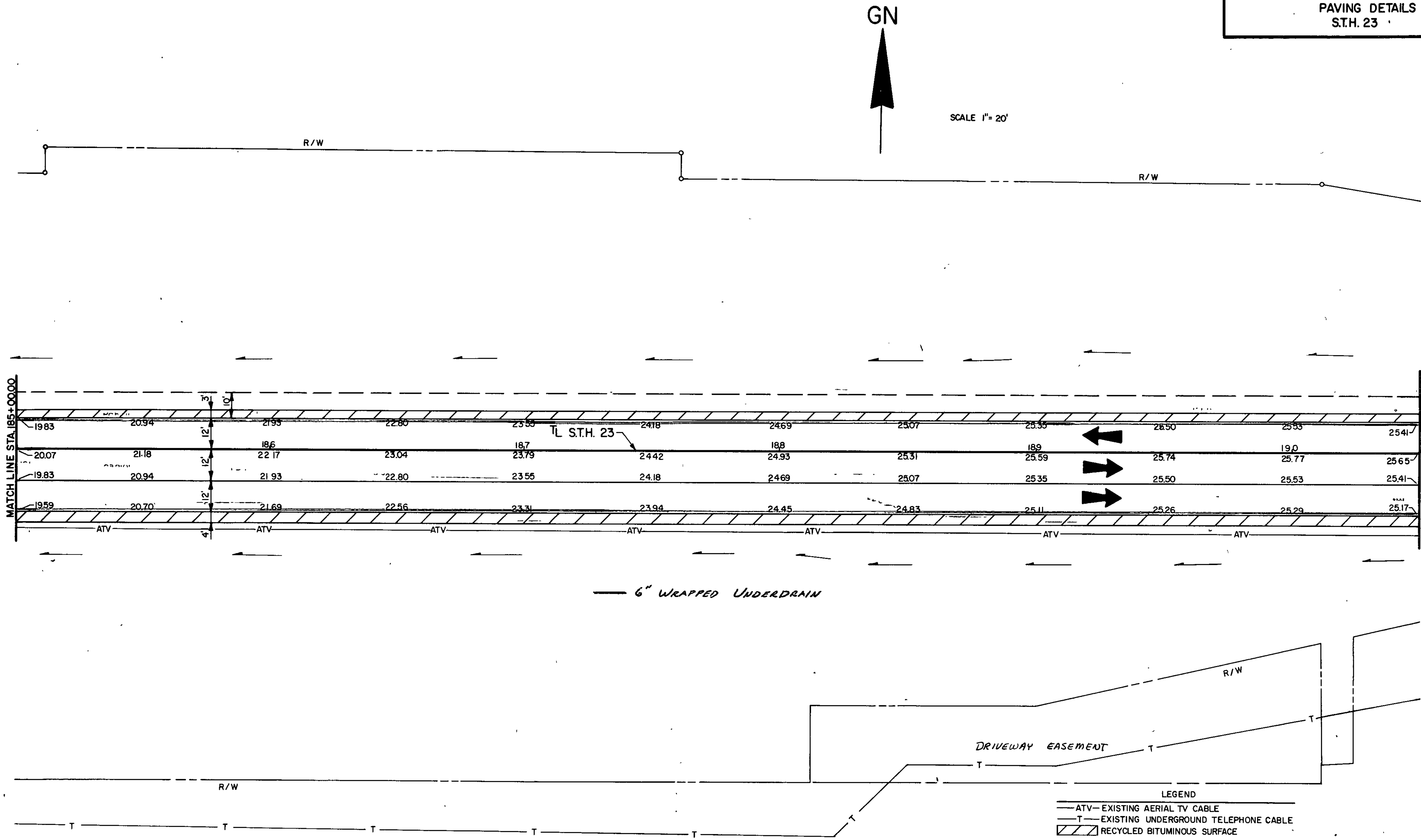
PAVING DETAILS
S.T.H. 23

GN

SCALE 1"=20'



STATE PROJECT NUMBER	SHEET NO.
1442 - 01 - 73	2.19
PAVING DETAILS S.T.H. 23	



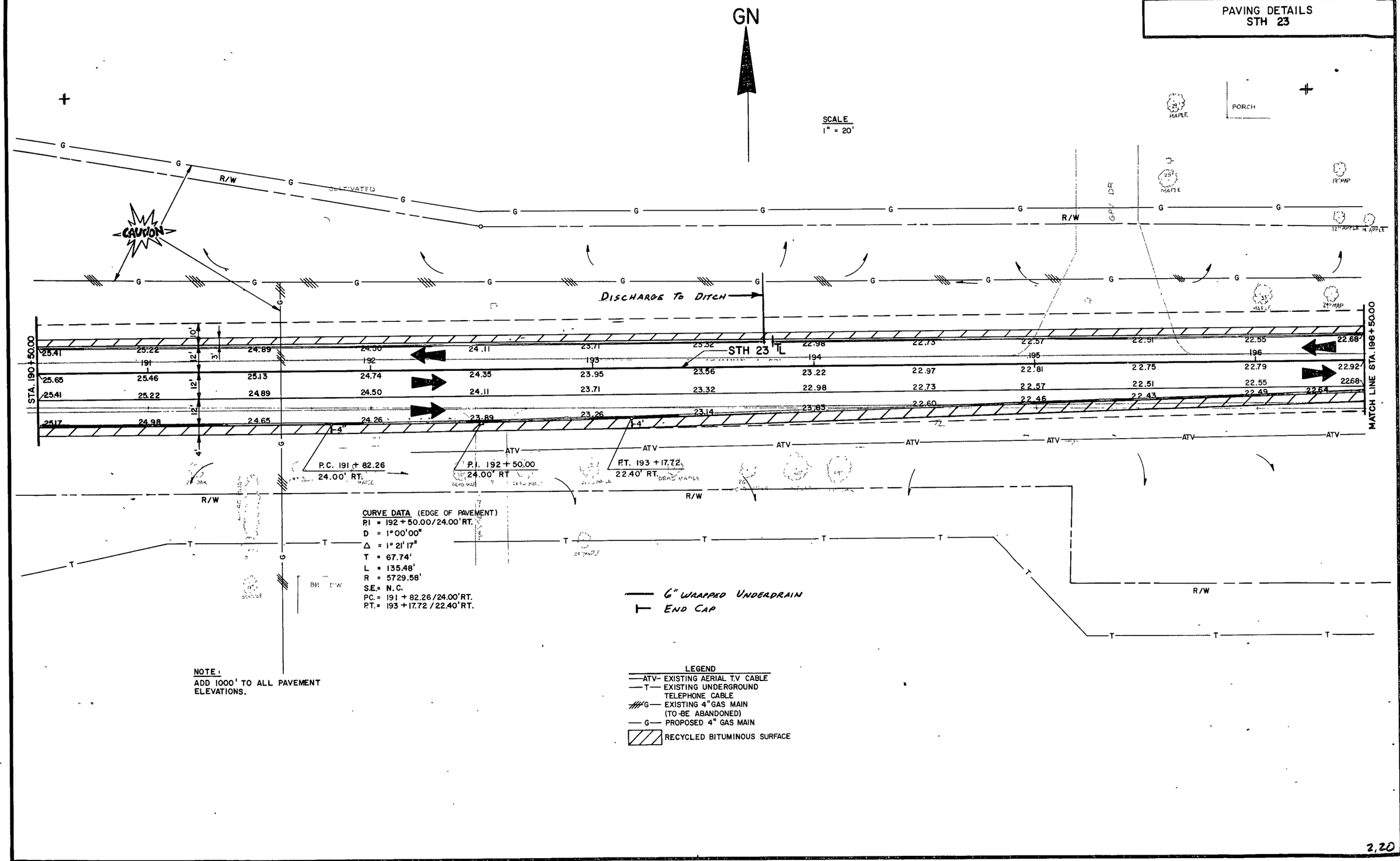
NOTE
ADD 1000 TO ALL PAVEMENT ELEVATIONS

STATE PROJECT NUMBER	SHEET NO.
1442-01-73	2.20

PAVING DETAILS
STH 23

GN

SCALE
1" = 20'



CURVE DATA (EDGE OF PAVEMENT)
PI = 192 + 50.00/24.00'RT.
D = 1°00'00"
Δ = 1° 21' 17"
T = 67.74'
L = 135.48'
R = 5729.58'
S.E.= N.C.
P.C.= 191 + 82.26/24.00'RT.
P.T.= 193 + 17.72 /22.40'RT.

6" WRAPPED UNDERDRAIN
END CAP

NOTE:
ADD 1000' TO ALL PAVEMENT ELEVATIONS.

LEGEND
ATV- EXISTING AERIAL T.V CABLE
T— EXISTING UNDERGROUND TELEPHONE CABLE
G— EXISTING 4" GAS MAIN (TO BE ABANDONED)
G— PROPOSED 4" GAS MAIN
RECYCLED BITUMINOUS SURFACE

2.20

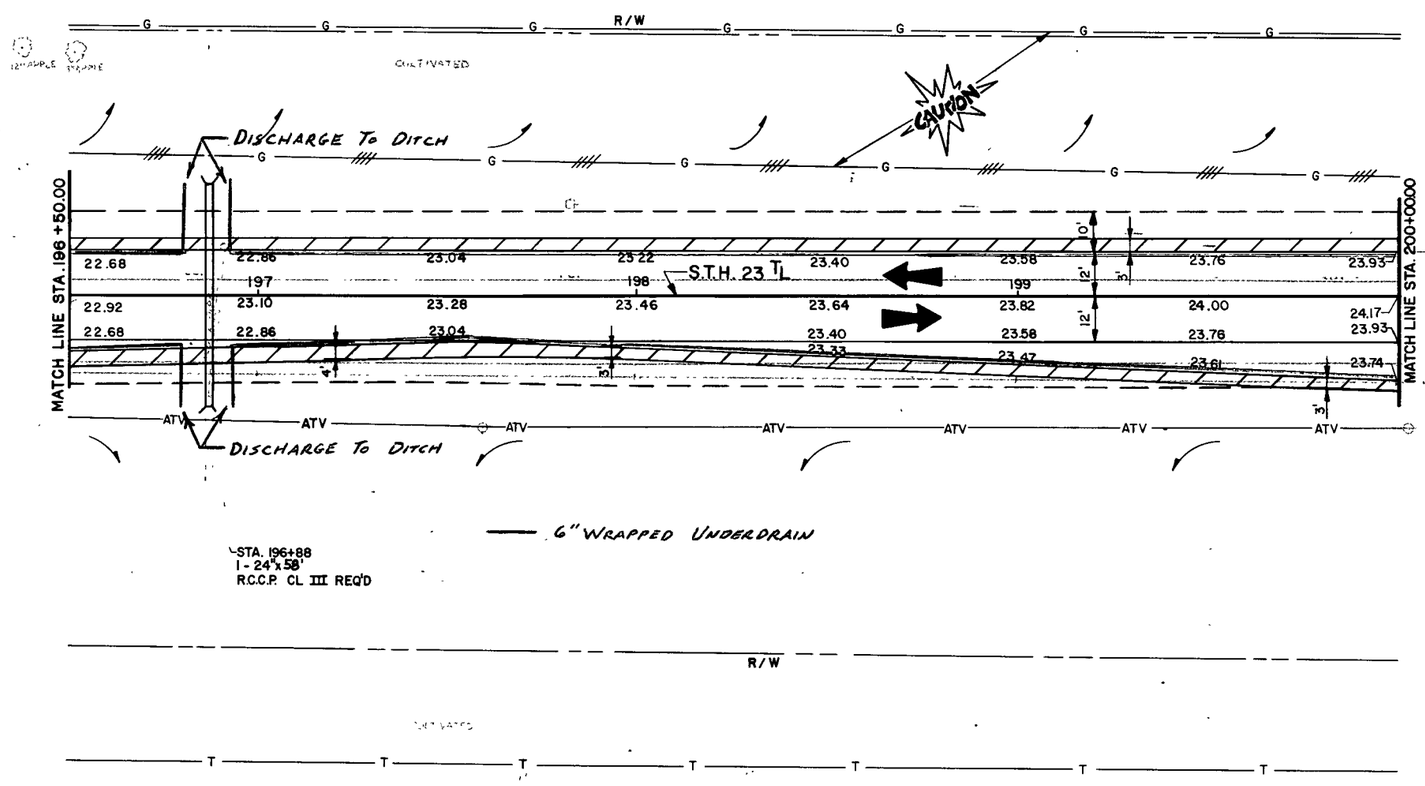
Cat No. 2130 – 0142

STATE PROJECT NUMBER	SHEET NO.
1442-01-73	2,21

PAVING DETAILS
S.T.H. 23 AND C.T.H. "UU"

GN

SCALE
1" = 20"



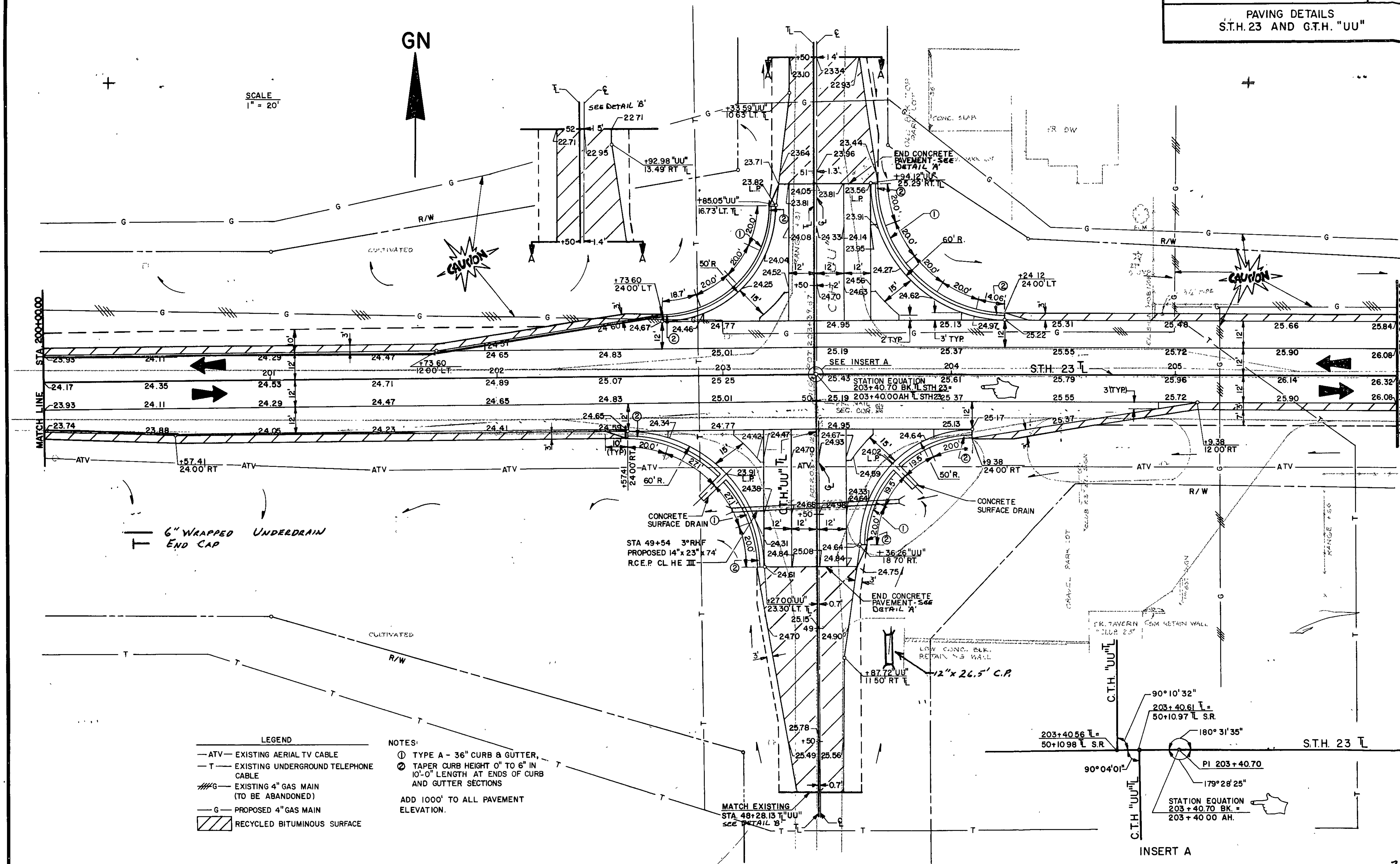
LEGEND

—ATV— EXISTING AERIAL T.V CABLE
—T— EXISTING UNDERGROUND TELEPHONE CABLE
—G— EXISTING 4" GAS MAIN
—G— PROPOSED 4" GAS MAIN
RECYCLED BITUMINOUS SURFACE

NOTE
ADD 1000' TO ALL PAVEMENT ELEVATIONS.

STATE PROJECT NUMBER	SHEET NO
1442-01-73	2.22

PAVING DETAILS
S.T.H. 23 AND C.T.H. "UU"



LEGEND

- —ATV— EXISTING AERIAL TV CABLE
- —T— EXISTING UNDERGROUND TELEPHONE CABLE
- —G— EXISTING 4" GAS MAIN (TO BE ABANDONED)
- —G— PROPOSED 4" GAS MAIN
- RECYCLED BITUMINOUS SURFACE

NOTES:

① TYPE A - 36" CURB & GUTTER.
② TAPER CURB HEIGHT 0" TO 6" IN 10'-0" LENGTH AT ENDS OF CURB AND GUTTER SECTIONS

ADD 1000' TO ALL PAVEMENT ELEVATION.

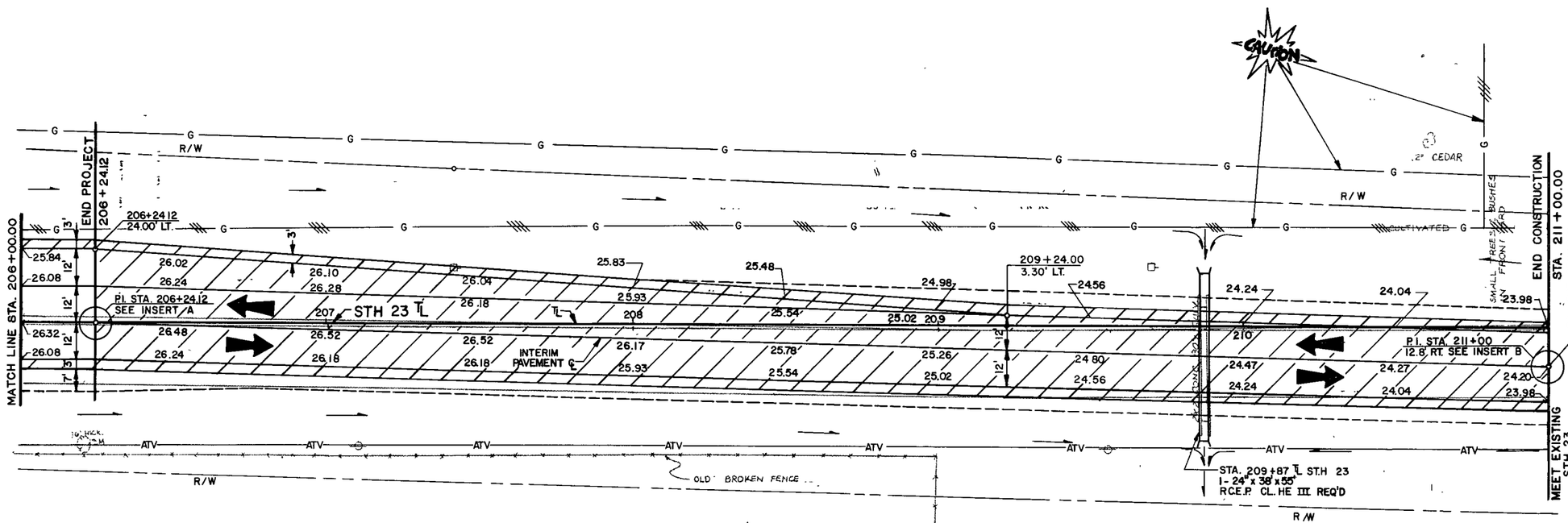
Cat No 2130 - 0142

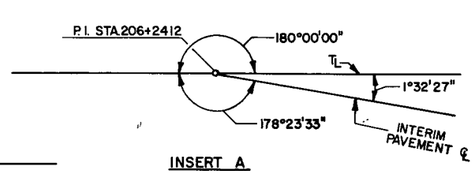
STATE PROJECT NUMBER	SHEET NO.
1442 - 01-73	2,23

PAVING DETAILS
INTERIM CONNECTION – S.T.H. 23

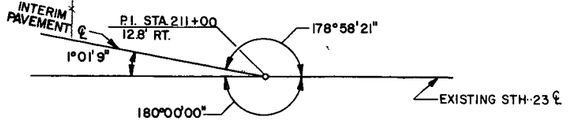
GN

SCALE
1" = 20'





INSERT A



INSERT B

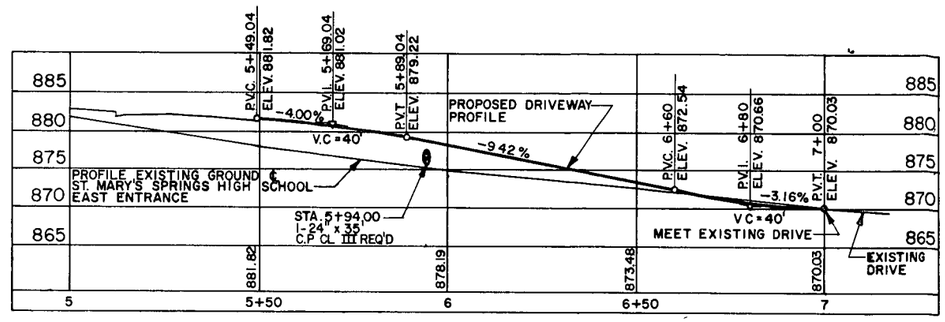
LEGEND
—ATV— EXISTING AERIAL T.V CABLE
—G— EXISTING 4" GAS MAIN (TO BE ABANDONED)
—G— PROPOSED 4" GAS MAIN
RECYCLED BITUMINOUS SURFACE

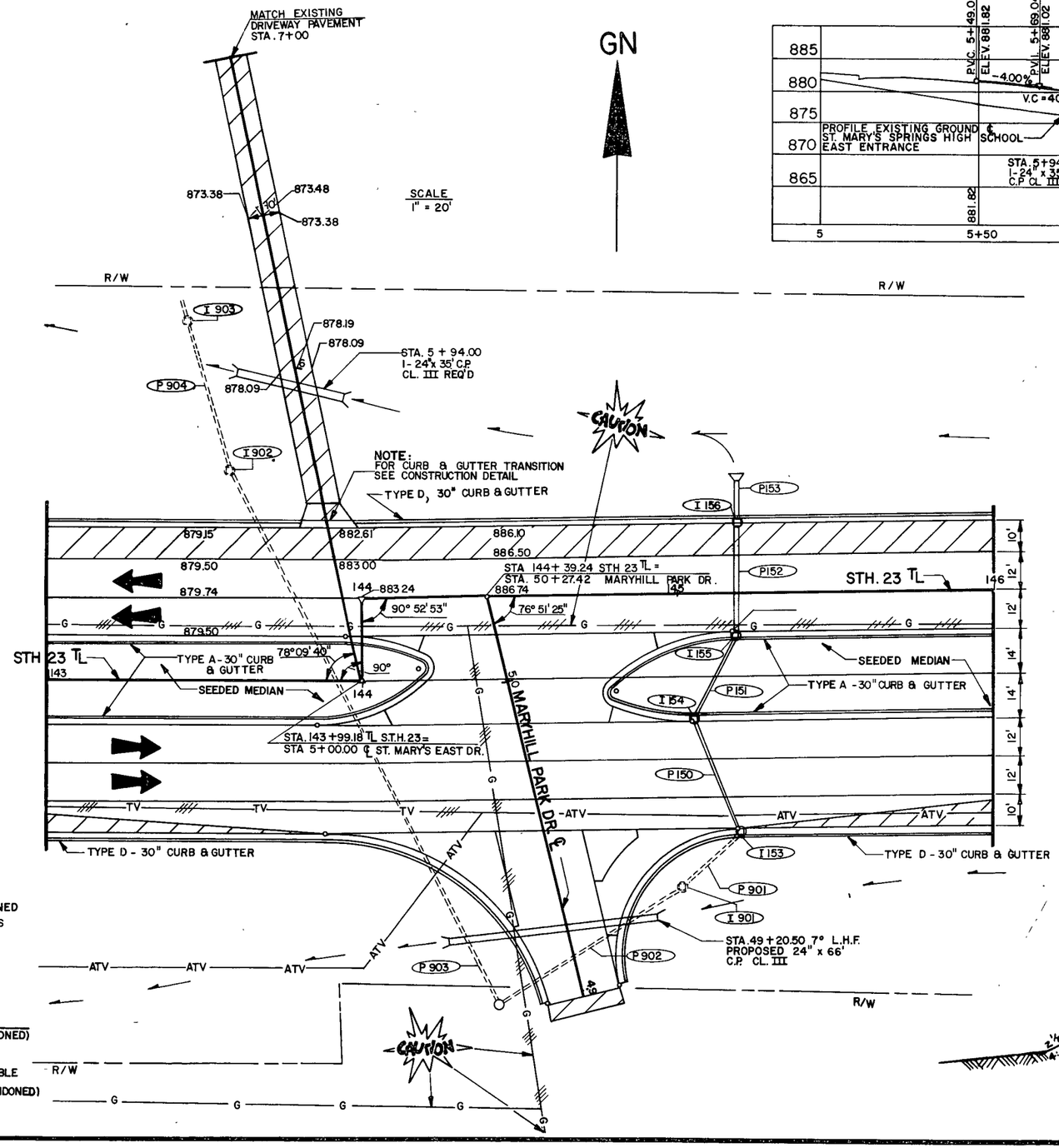
NOTE:
ADD 1000 TO ALL PAVEMENT ELEVATIONS.

STATE PROJECT NUMBER	SHEET NO.
1442 - 01 - 73	2.24

PAVING DETAILS

ST. MARY SPRINGS HIGH SCHOOL ENTRANCE

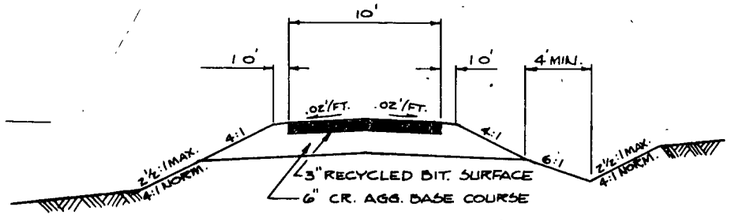




NOTE:
CONSTRUCTION OF THE 900 SERIES INLETS AND PIPES ALONG WITH THEIR INVERTS SHALL BE DETERMINED BY THE FIELD ENGINEER. QUANTITIES HAVE BEEN INCLUDED IN QUANTITIES ESTIMATE.

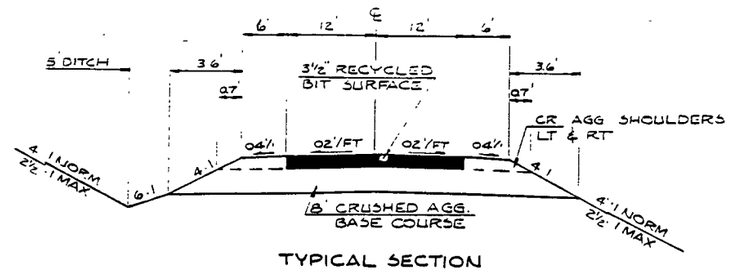
LEGEND

- TV — AERIAL TV CABLE (TO BE ABANDONED)
- ATV — EXISTING AERIAL TV CABLE
- TV — PROPOSED UNDERGROUND TV CABLE
- G — EXISTING GAS MAIN (TO BE ABANDONED)
- G — PROPOSED 8" GAS MAIN
- RECYCLED BITUMINOUS SURFACE



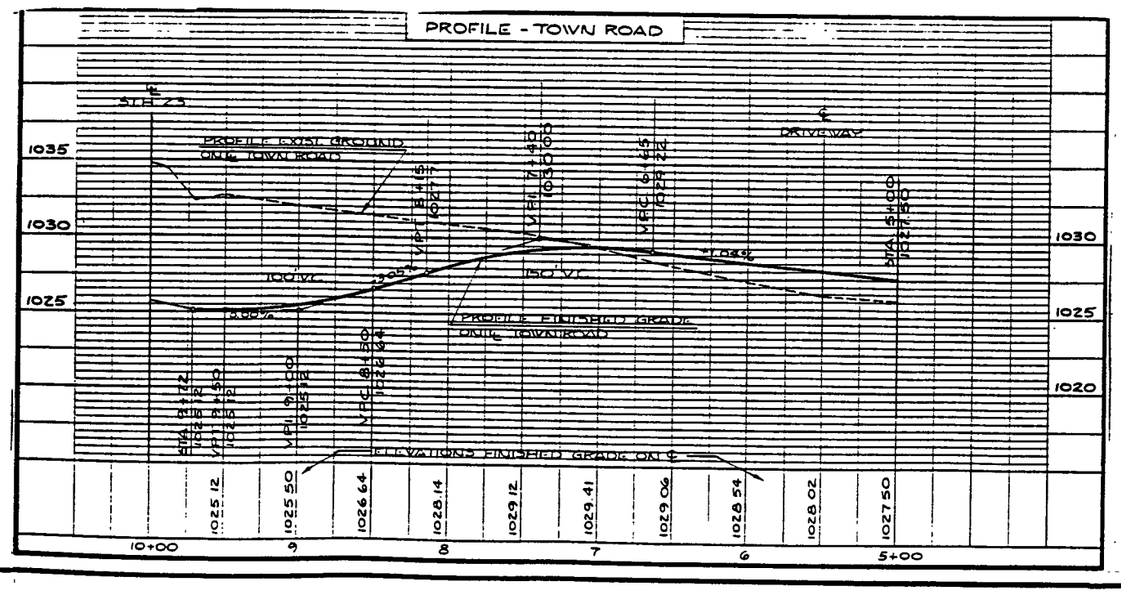
TYPICAL SECTION
DRIVEWAY LT.

STATE PROJECT NUMBER	SHEET NO
1442-01-73	2,24A
CONSTRUCTION DETAILS	



TYPICAL SECTION
TOWN ROAD

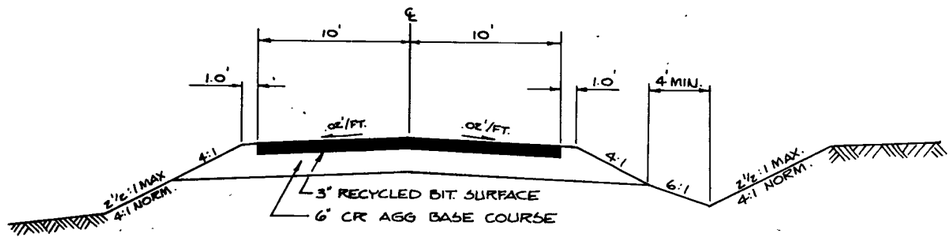
TYPICAL SECTION
CUL-DE-SAC



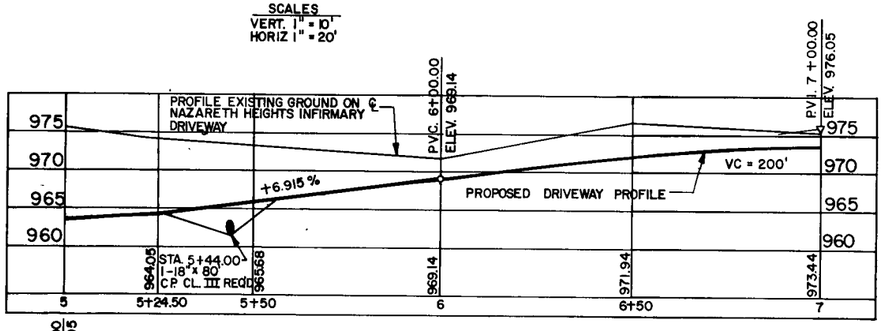
STATE PROJECT NUMBER	SHEET NO.
1442-01-73	7,25

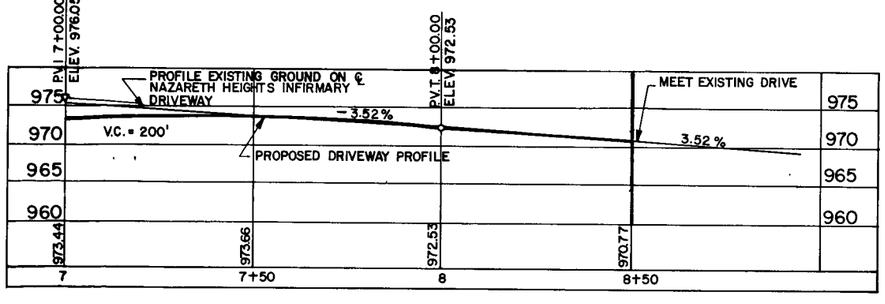
PAVING DETAILS
NAZARETH HEIGHTS INFIRMARY ENTRANCE

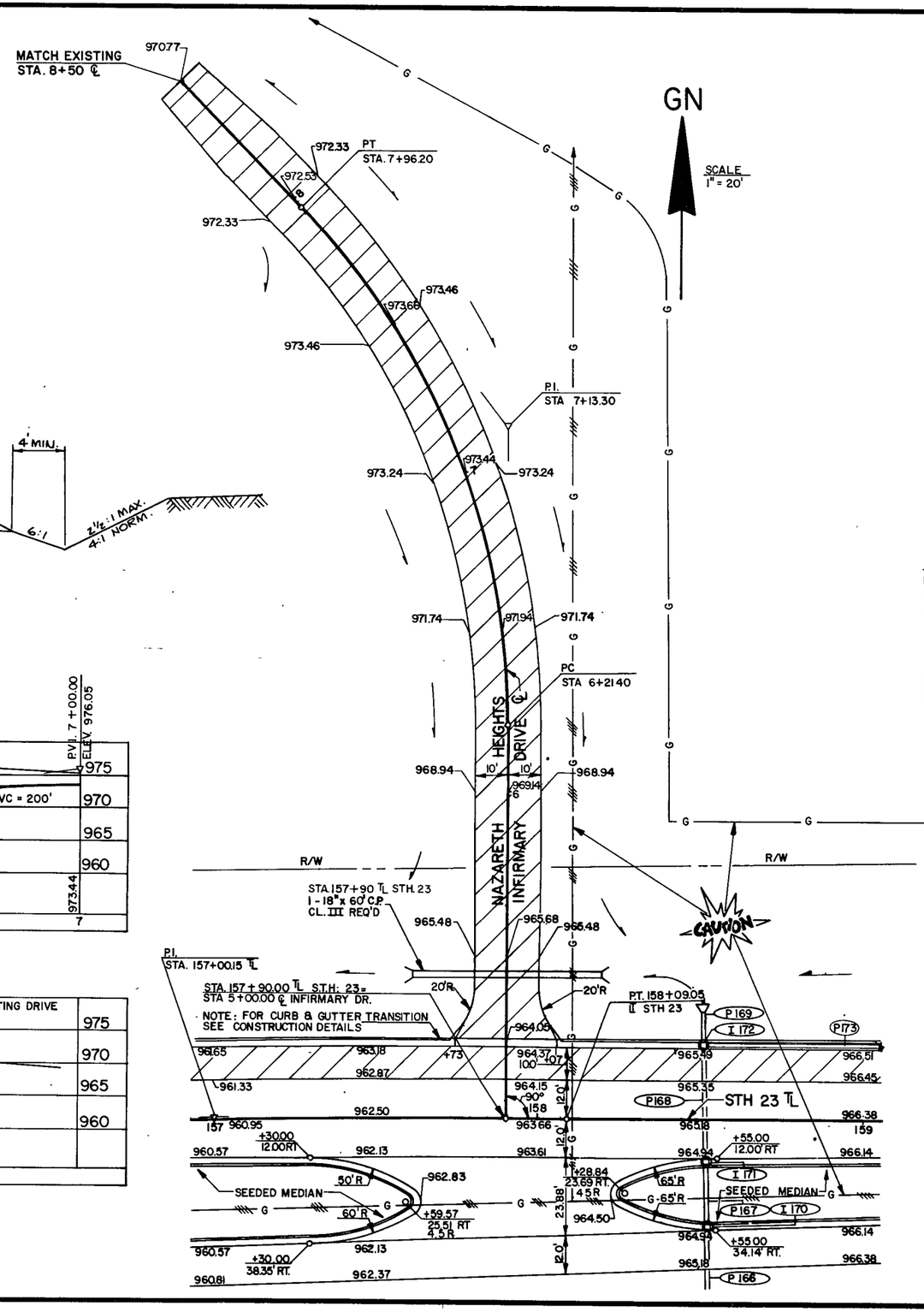
INFIRMARY DRIVE
CURVE DATA
P.I = 7+13.30
D = 25° 00' 00"
Δ = 43° 42' 00"
T = 91.90'
L = 174.80'
R = 229.18'
S.E.=N.C.
P.C.=6+21.40
P.T.=7+96.20



SCALES
VERT. 1" = 10'
HORIZ 1" = 20'







CURVE 50 DATA ℄ S.T.H. 23
P.I. = 157+00.15
D = 1°00'00"
Δ = 2°10'42"
T = 108.93'
L = 217.83'
R = 5729.58'
S.E.=0.032 ft.
P.C.=155+91.22
P.T.=158+09.05

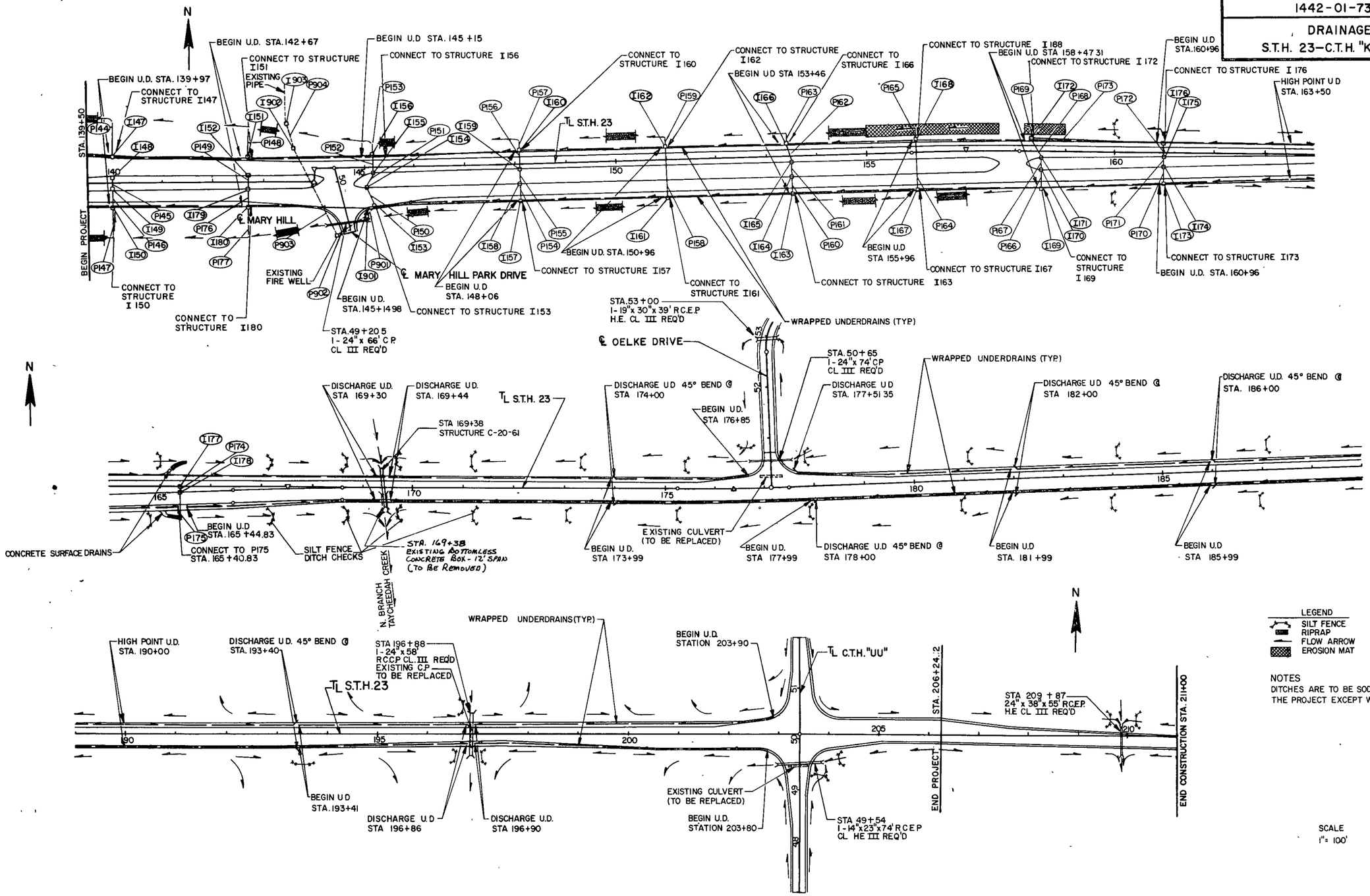
LEGEND
G — EXISTING 4" GAS MAIN (TO BE ABANDONED)
G — PROPOSED 4" GAS MAIN
RECYCLED BITUMINOUS SURFACE

TELEDYNE POST

Cat. No. 2130 – 0142

STATE PROJECT NUMBER	SHEET NO.
1442-01-73	2.26

DRAINAGE PLAN
S.T.H. 23–C.T.H. "K" TO C.T.H. "UU"



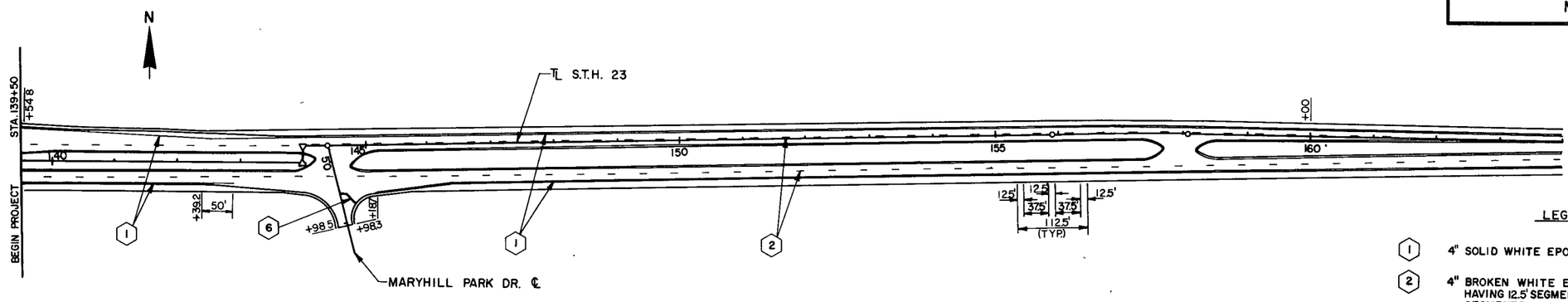
LEGEND
- SILT FENCE
- RIPRAP
- FLOW ARROW
- EROSION MAT

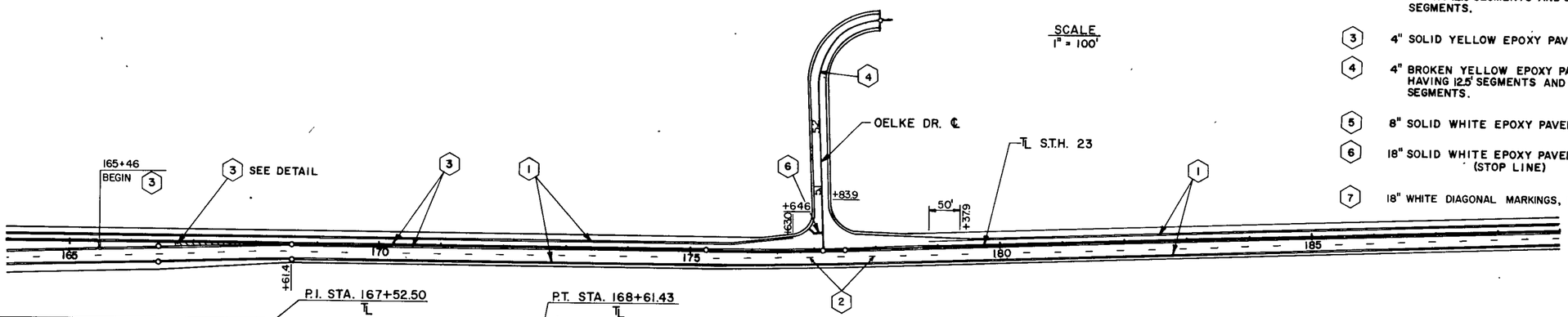
NOTES
DITCHES ARE TO BE SODDED THROUGHOUT THE PROJECT EXCEPT WHERE NOTED.

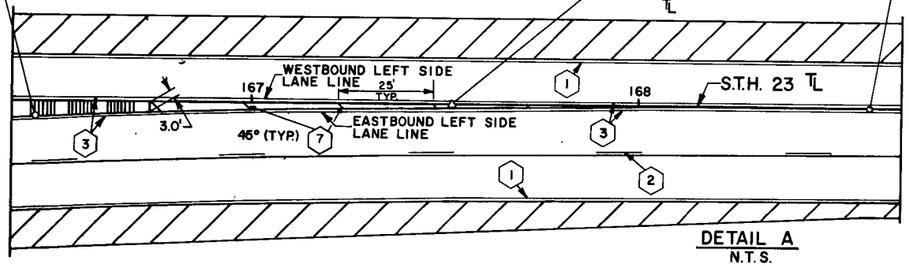
SCALE
1"= 100'

STATE PROJECT NUMBER	SHEET NO.
1442-01-73	2.27

PERMANENT PAVEMENT MARKING PLAN







DETAIL A
N.T.S.

LEGEND

1. 4" SOLID WHITE EPOXY PAVEMENT MARKING.
2. 4" BROKEN WHITE EPOXY PAVEMENT MARKING HAVING 12.5' SEGMENTS AND 37.5' GAPS BETWEEN SEGMENTS.
3. 4" SOLID YELLOW EPOXY PAVEMENT MARKING.
4. 4" BROKEN YELLOW EPOXY PAVEMENT MARKING HAVING 12.5' SEGMENTS AND 37.5' GAPS BETWEEN SEGMENTS.
5. 8" SOLID WHITE EPOXY PAVEMENT MARKING.
6. 18" SOLID WHITE EPOXY PAVEMENT MARKING. (STOP LINE)
7. 18" WHITE DIAGONAL MARKINGS, EPOXY

SCALE
1" = 100'

NOTE:

ALSO SEE STANDARD DETAIL SHEET S.D.D.

STATE PROJECT NUMBER	SHEET NO.
1442-01-73	2.28

S TH. 23
TRAFFIC CONTROL PLAN
TEMPORARY PAVEMENT MARKING
TEMPORARY SIGNING

STAGE I

GENERAL

1. The contractor shall provide and maintain access to all properties abuting the construction work throughout the life of the project.
2. All signs to be size 2.

TRAFFIC

1. Normal traffic pattern.

CONSTRUCT

1. Temporary pavement south side of S.T.H. 23 from Sta. 203 + 50 to Sta. 213 + 00.
2. Temporary pavement east side of C.T.H. "UU" from Sta. 47 + 25 to Sta. 49 + 40.
3. Temporary pavement west side of C.T.H. "UU" from Sta. 50 + 21 to Sta. 54 + 00.
4. Grade, shape & finish the intersection of C.T.H. 'T' & C.T.H. 'UU' on the detour.

STAGE IA

GENERAL

1. The contractor shall provide and maintain access to all properties abuting the construction work throughout the life of the project.
2. All signs to be size 2.

TRAFFIC

1. S.T.H. 23 westbound through traffic travels on south lane of existing pavement to intersection of C.T.H. "UU" where it is detoured to the south along existing east lane of C.T.H. "UU" to end of construction where it returns to existing west lane of C.T.H. "UU".
2. S.T.H. 23 eastbound through traffic will travel north on C.T.H. "UU" and then on newly constructed temporary pavement to intersection with S.T.H. 23; thence eastbound on temporary pavement to end of construction zone where it reverts to existing pavement eastbound.
3. C.T.H. "UU" southbound travels on temporary pavement to intersection of C.T.H. "UU" and S.T.H. 23 where it stops. It then proceeds south on existing north bound lane to end of construction zone or east on temporary pavement.
4. C.T.H. "UU" northbound travels north on newly constructed temporary pavement on east side of C.T.H. "UU"; through the intersection where it switches to the existing southbound lane of C.T.H. "UU"; thence north to end of construction zone where it reverts to existing northbound lane.

CONSTRUCT

1. Westbound S.T.H. 23 permanent pavement from Sta. 203 + 40 to Sta. 206 + 24.
2. Westbound bituminous pavement tie from Sta. 206 + 24 to Sta. 211 + 00.
3. C.T.H. "UU" northbound permanent pavement from Sta. 50 + 11 to Sta. 52 + 00.
4. S.T.H. 23 westbound from Sta. 202 + 25 to Sta. 203 + 00.
5. C.T.H. "UU" southbound permanent pavement from Sta. 48 + 28 to Sta. 49 + 50.
6. S.T.H. 23 temporary pavement widening on north side of newly constructed pavement from Sta. 206 + 24 to Sta. 211 + 80.
7. C.T.H. "UU" temporary pavement on west side of newly constructed southbound lane from Sta. 47 + 70 to Sta. 49 + 00.
8. C.T.H. "UU" temporary pavement on east side of newly constructed northbound lane from Sta. 51 + 35 to Sta. 54 + 20.

STAGE II

GENERAL

1. The contractor shall provide and maintain access to all properties abuting the construction work throughout the life of the project.
2. All signs to be size 2.

TRAFFIC

1. S.T.H. 23 westbound travel on newly constructed temporary pavement on north side of S.T.H. 23 to new permanent pavement; to intersection of S.T.H. 23 and C.T.H. "UU"; thence south on new temporary pavement on west side of C.T.H. "UU" to end of construction zone; thence south on existing southbound lane of C.T.H. "UU" to prescribed detour.
2. S.T.H. 23 eastbound travels north on newly constructed southbound land of C.T.H. "UU" to intersection of S.T.H. 23 and C.T.H. "UU"; thence east on south lane of newly constructed westbound lane to end of construction where it reverts to existing eastbound lane.
3. C.T.H. "UU" southbound travels south on newly constructed northbound pavement to intersection where it shall stop. Thence through intersection to temporary pavement through construction zone and thence to existing southbound pavement.
4. C.T.H. "UU" northbound travels north on newly constructed southbound lane of C.T.H. "UU" to intersection where it stops. Thence through intersection to temporary pavement on east side of C.T.H. "UU" northbound lane.

CONSTRUCT

1. S.T.H. 23 eastbound permanent pavement Sta. 203 + 40 to Sta. 206 + 24.
2. C.T.H. "UU" southbound lane from Sta. 50 + 50 to Sta. 53 + 00.
3. C.T.H. "UU" northbound lane from Sta. 48 + 28 to intersection.
4. Eastbound bituminous pavement tie from Sta. 206 + 24 to Sta. 211 + 00.
5. Remove temporary lane on east side of C.T.H. "UU" south of intersection.
6. Remove temporary lane on west side of C.T.H. "UU" north of intersection.
7. Remove temporary lane south side of S.T.H. 23 east of intersection.

STAGE IIA

GENERAL

1. The contractor shall provide and maintain access to all properties abuting the construction work throughout the life of the project.
2. All signs to be size 2.

TRAFFIC

1. S.T.H. 23 westbound travels on new westbound pavement and across temporary tie to existing S.T.H. 23; thence detoured south on C.T.H. "UU" newly constructed southbound lane to existing C.T.H. "UU".
2. C.T.H. "UU" northbound travels on newly constructed northbound lane to intersection where it will be channelized toward the easterly edge of pavement just south of the intersection where it will stop. Thence through intersection to newly constructed northbound lane of C.T.H. "UU".
3. S.T.H. 23 eastbound follows same route as C.T.H. "UU" northbound except it turns east at intersection and travels on newly constructed eastbound lanes of S.T.H. 23.
4. C.T.H. "UU" southbound travels on newly constructed southbound lanes of C.T.H. "UU" to Sta. 51 + 00 where it will be channelized to encroach upon northbound lane of C.T.H. "UU". Maximum encroachment 11'. Southbound traffic to stop at intersection. Thence travel south in westerly northbound lane of newly constructed intersection to Sta. 49 + 75 where it will be channelized to southbound lane of newly constructed C.T.H. "UU".

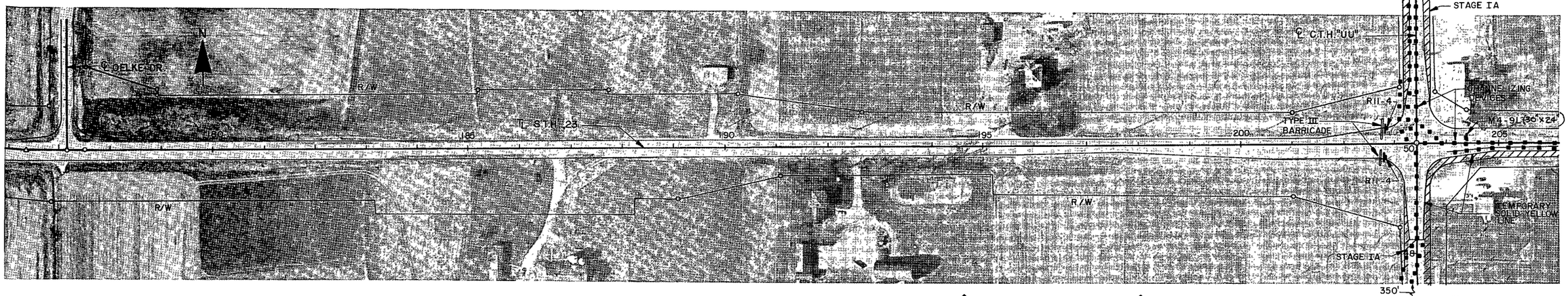
CONSTRUCT

1. S.T.H. 23 eastbound pavement from Sta. 202 + 25 to Sta. 203 + 41.
2. S.T.H. 23 westbound pavement from Sta. 203 + 00 to Sta. 203 + 41.
3. Remove all remaining temporary pavement, barricades, signs, lighted arrows, etc., and open reconstructed C.T.H. "UU" to traffic. S.T.H. 23 west of intersection will be open to local traffic only.

STATE PROJECT NUMBER	SHEET NO.
1442-01-73	2,29

S.T.H. 23
TRAFFIC CONTROL PLAN
TEMPORARY PAVEMENT MARKING
TEMPORARY SIGNING

STAGE I & STAGE IA



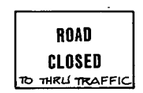
NOTE:
1. FLASHING OR STEADY BURN WARNING LIGHTS TO BE FURNISHED ON BARRICADES DRUMS, CHANNELIZING DEVICES, AS REQUIRED
2. CONTRACTOR TO FURNISH LIGHTED ARROWS BOARDS AS REQUIRED AND DIRECTED BY THE ENGINEER. (MINIMUM 3 REQUIRED)
3. CONTRACTOR TO FURNISH FLAGMEN IF REQUIRED AND AS DIRECTED BY THE ENGINEER.

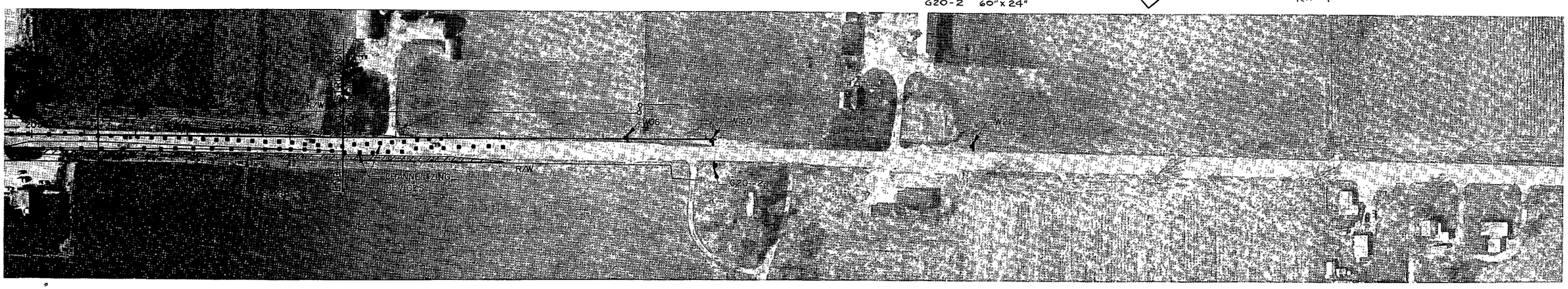
KEY:
- ■■ CHANNELIZING DEVICES
- ⊢⊣ TYPE II BARRICADE
- ▭ TYPE III BARRICADE
- ▪⚑ FLAGGER

SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE FEDERAL HIGHWAY ADMINISTRATION MANUAL OF STANDARD HIGHWAY SIGNS.

"WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED

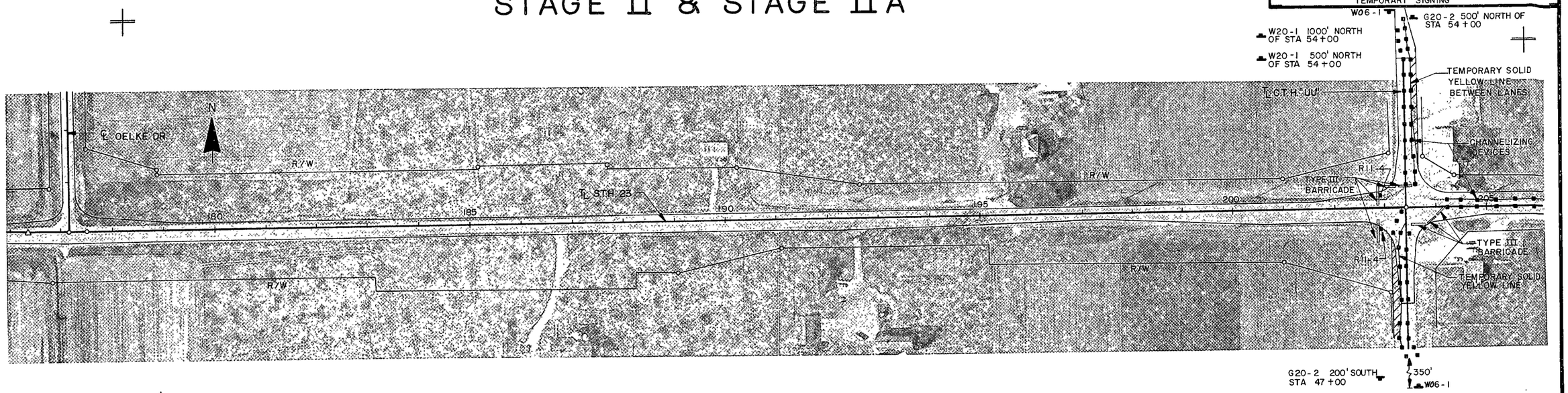




STATE PROJECT NUMBER	SHEET NO.
1442-01-73	2.30

S.T.H. 23
TRAFFIC CONTROL PLAN
TEMPORARY PAVEMENT MARKING
TEMPORARY SIGNING

STAGE II & STAGE II A



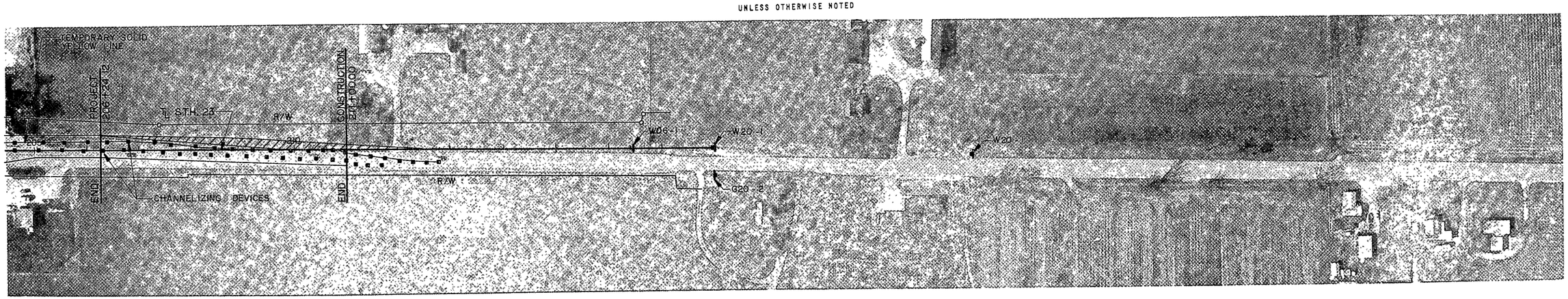
NOTE:
1. FLASHING OR STEADY BURN WARNING LIGHTS TO BE FURNISHED ON BARRICADES DRUMS, CHANNELIZING DEVICES, AS REQUIRED
2. CONTRACTOR TO FURNISH LIGHTED ARROWS BOARDS AS REQUIRED AND DIRECTED BY THE ENGINEER. (MINIMUM 3 REQUIRED)
3. CONTRACTOR TO FURNISH FLAGMEN IF REQUIRED AND AS DIRECTED BY THE ENGINEER.

KEY:
- CHANNELIZING DEVICES
- TYPE II BARRICADE
- TYPE III BARRICADE
- FLAGGER

SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE FEDERAL HIGHWAY ADMINISTRATION MANUAL OF STANDARD HIGHWAY SIGNS.

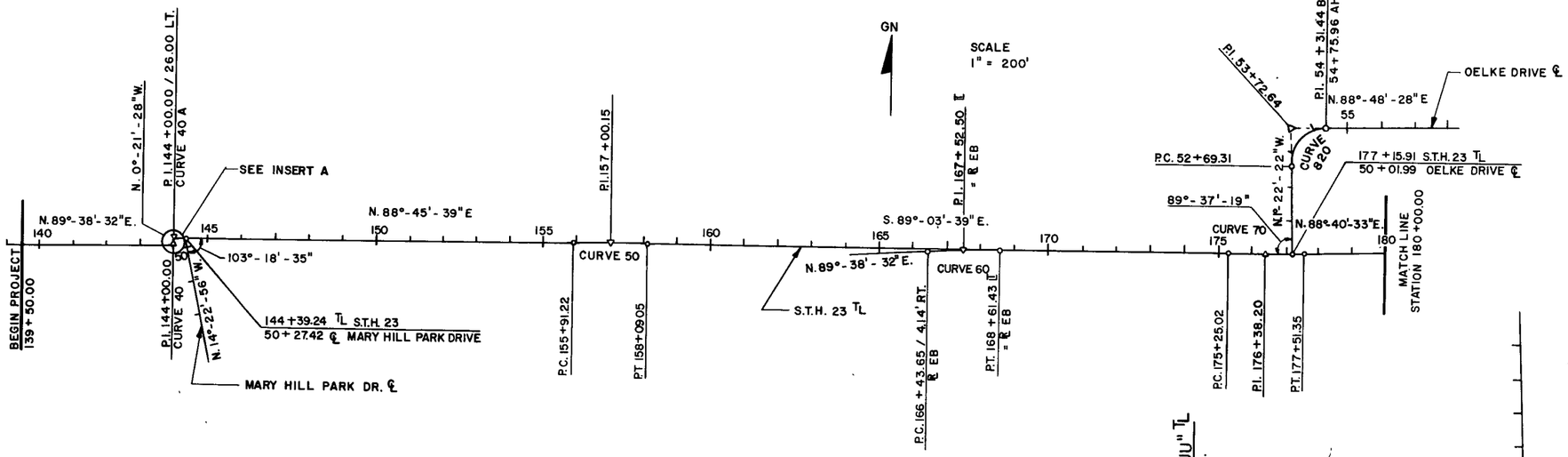
"W0" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

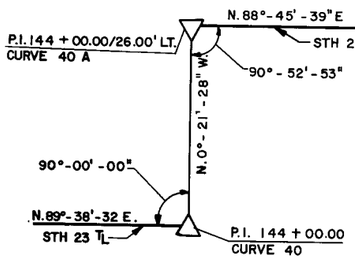
ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED



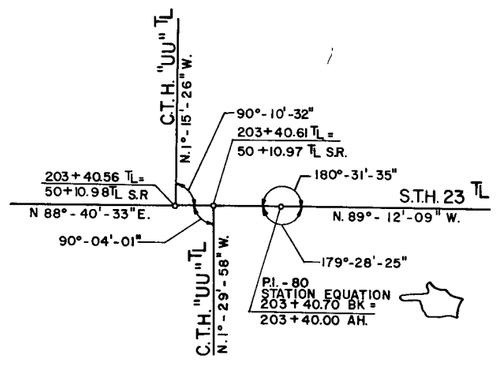
STATE PROJECT NUMBER	SHEET NO.
1442-01-73	2.31

S.T.H. 23 LINE LAYOUT

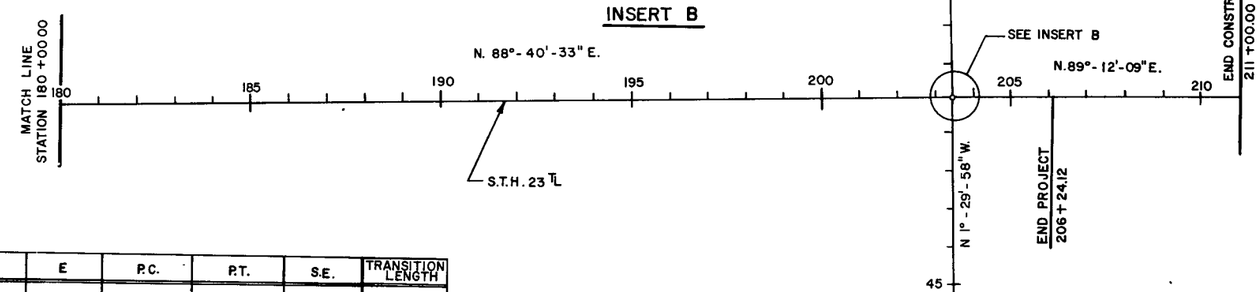




INSERT A



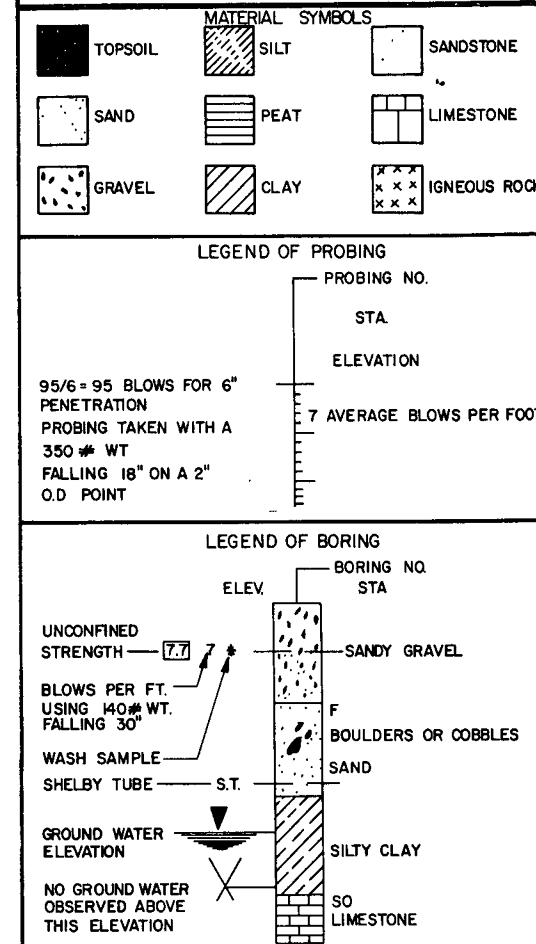
INSERT B



CURVE NUMBER	P.I.	NORTH COORDINATE	EAST COORDINATE	Δ	D	T	L	R	E	P.C.	P.T.	S.E.	TRANSITION LENGTH
S.T.H. 23													
40	144+00.00	654287.41	426875.89	90°-00'-00"	——	——	——	——	——	144+00.00	144+00.00	——	——
40A	144+00.00 26.00' LT.	654313.41	426875.73	89°-07'-07"	——	——	——	——	——	144+00.00 26.00' LT.	144+00.00 26.00' LT.	——	——
50	157+00.15	654341.53	428175.58	2° 10' 42"	1° 00' 00"	108.93'	217.83'	5729.58'	1.04'	155+91.22	158+09.05	0.032 1/1	310'
60	167+52.50	654324.28	429227.82	2° 10' 42"	1° 00' 00"	108.93'	217.83'	5729.58'	1.03'	166+43.65 4.14' RT.	168+61.43	0.032 1/1	310'
70	176+38.20	654309.76	430113.40	2° 15' 48"	1° 00' 00"	113.18'	226.33'	5729.58'	1.12'	175+25.02	177+51.33	0.032 1/1	310'
80	203+40.70BK	654372.21	432815.20	0° 31' 36"	——	——	——	——	——	——	——	——	——
	203+40.00AH	654372.21	432815.20	0° 31' 36"	——	——	——	——	——	203+40.70 BK	203+40.70 BK	——	——
OELKE DR.										203+40.00AH	203+40.00AH	——	——
820	53+72.64	654682.21	430182.23	90°10'50"	55°37'37"	103.32'	162.12'	103.00'	42.89'	52+69.32	54+31.44	——	——

STATE PROJECT NUMBER	SHEET NO.
1442 - 01 - 73	2.32

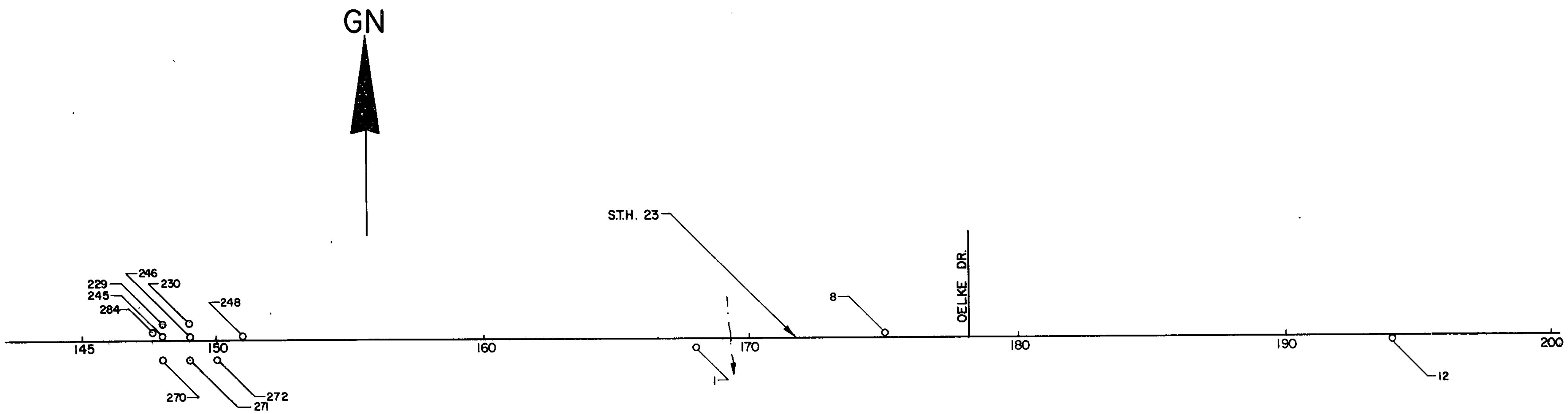
SUBSURFACE EXPLORATION
S.T.H. 23

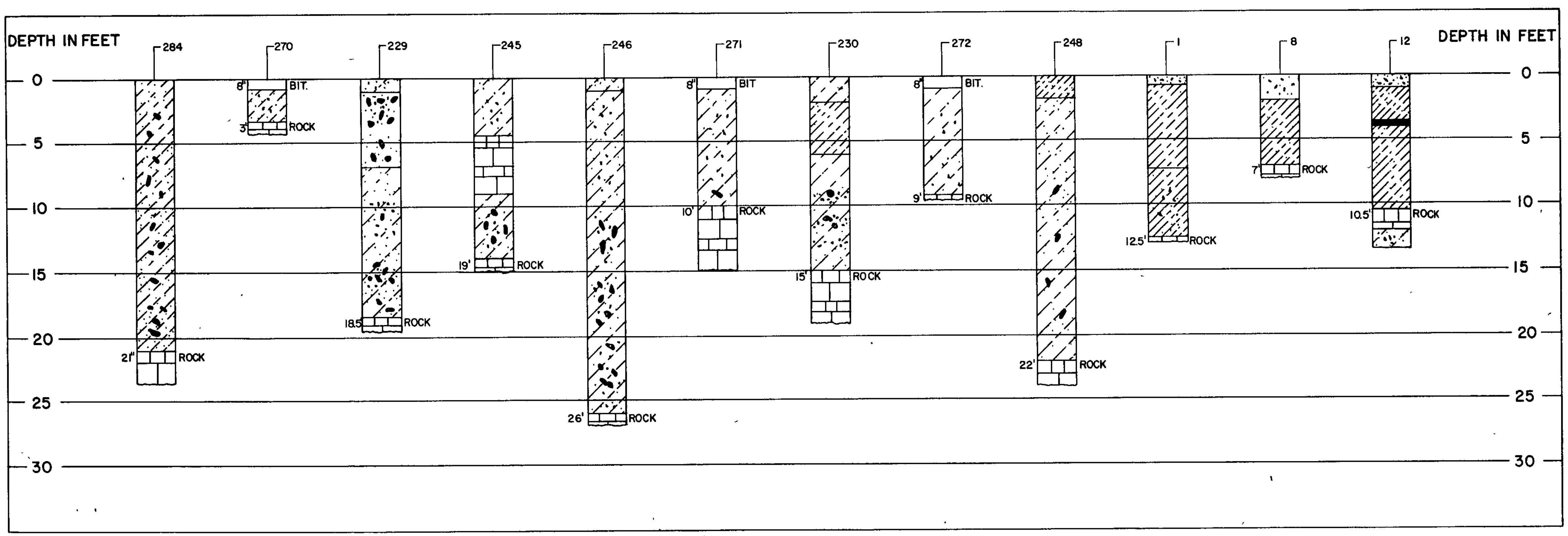


Unless otherwise specified, the blows per foot at the locations indicated are based on driving a 2" O.D. x 1.4" I.D. split spoon sampler with a 140# hammer having a free fall of 30". The blow count is taken in undisturbed soil immediately below a cased or open hole eliminating side friction on the drive pipe.

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

To obtain relative data concerning the character of material in and upon which the foundation might be built, borings and/or soundings were made at points approximately as indicated on this drawing. The data presented herein represents the findings of the subsurface explorations made. However, because the depths investigated are limited and the area of the borings and/or soundings is very small in relation to the entire area, the Division of Highways does not warrant conditions below the depths investigated or that the classification of material encountered in these investigations is necessary typical of the entire site.





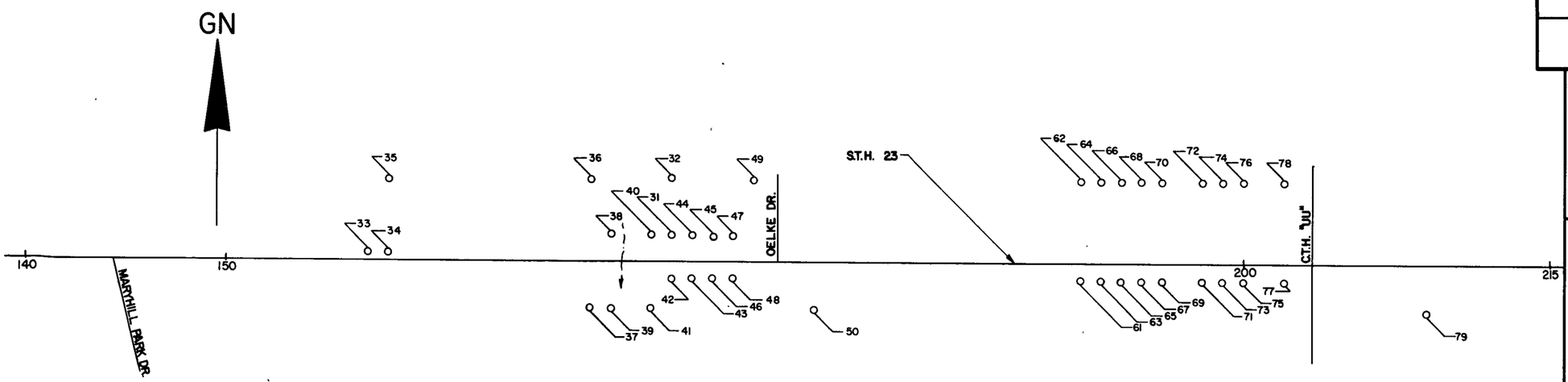
NOTE:

1. LIMESTONE WAS FOUND TO EXIST NEAR OR ABOVE GRADE LINE FROM STATION 146 TO 148.
2. HIGH VELOCITY MATERIAL ALSO EXISTS NEAR GRADE LINE IN CUT SECTION 181 TO 191.

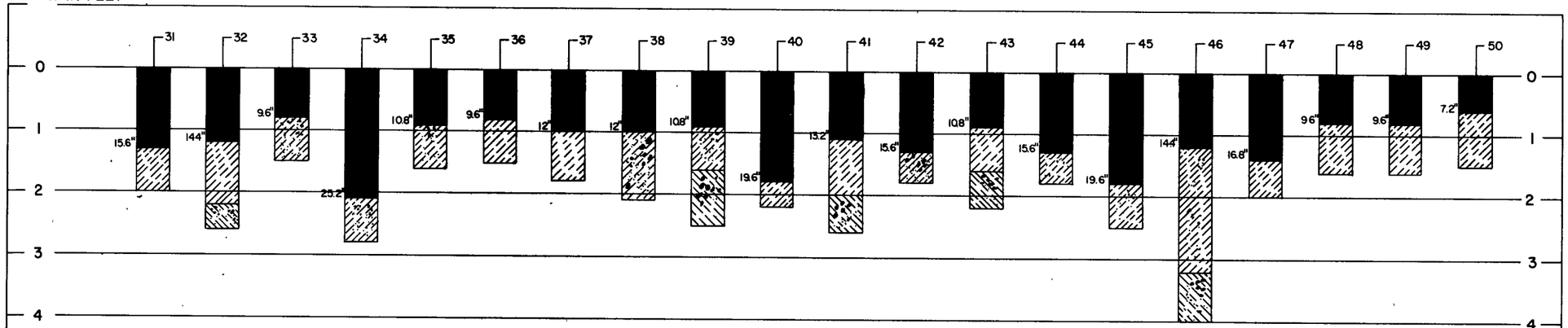
Cat. No. 2130 - 0142

STATE PROJECT NUMBER	SHEET NO.
1442 - 01 - 73	2.33

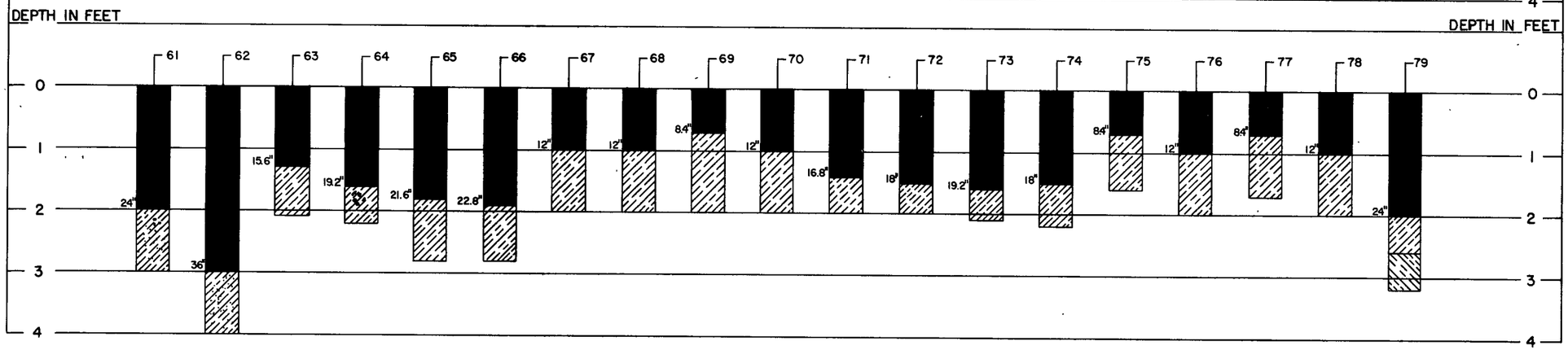
SUBSURFACE EXPLORATION
S.T.H. 23



DEPTH IN FEET



DEPTH IN FEET

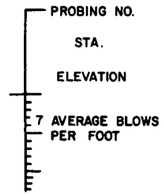


DEPTH IN FEET

MATERIAL SYMBOLS

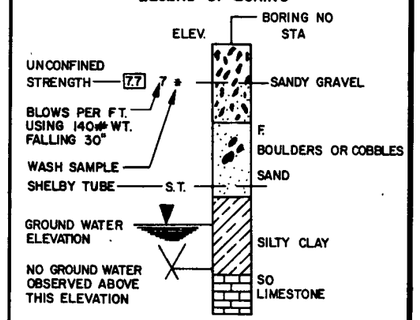
TOPSOIL · SILT · SANDSTONE
SAND · PEAT · LIMESTONE
GRAVEL · CLAY · IGNEOUS ROCK

LEGEND OF PROBING



95/6 = 95 BLOWS FOR 6" PENETRATION
PROBING TAKEN WITH A 350 # WT. FALLING 18" ON A 2" O.D. POINT.

LEGEND OF BORING



Unless otherwise specified, the blows per foot at the locations indicated are based on driving a 2" O.D. x 1.4" I.D. split spoon sampler with a 140# hammer having a free fall of 30". The blow count is taken in undisturbed soil immediately below a cased or open hole eliminating side friction on the drive pipe.

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

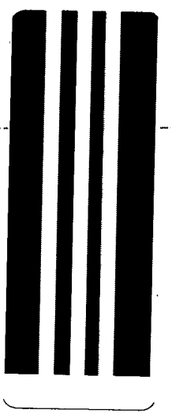
To obtain relative data concerning the character of material in and upon which the foundation might be built, borings and/or soundings were made at points approximately as indicated on this drawing. The data presented herein represents the findings of the subsurface explorations made. However, because the depths investigated are limited and the area of the borings and/or soundings is very small in relation to the entire area, the Division of Highways does not warrant conditions below the depths investigated or that the classification of material encountered in these investigations is necessary typical of the entire site.

ESTIMATE OF QUANTITIES

DATE 04/29/87

PROJECT ID: 1442-01-73
FOND DU LAC COUNTY
FOND DU LAC TO EAST COUNTY LINE ROAD
C.T.H. K TO C.T.H. UU
S.T.H. 23

ITEM	ITEM DESCRIPTION	UNIT	TOTAL	1442-01-73 QUANTITY
20101	CLEARING	STA.	11.00	11.00
20102	CLEARING	I.D.	415.00	415.00
20104	GRUBBING	STA.	12.00	12.00
20105	GRUBBING	I.D.	361.00	361.00
20301	REMOVING OLD CULVERT, STATION 169+32	L.S.	1.00	1.00
20302	REMOVING OLD CULVERT, STATION 209+87	L.S.	1.00	1.00
20401	REMOVING PAVEMENT	S.Y.	15,600.00	15,600.00
20401-1	Removing Pavement	S.Y.	5,600.00	5,600.00
20405	REMOVING CURB AND GUTTER	L.F.	4,069.00	4,069.00
20409	REMOVING SURFACE DRAINS	EACH	4.00	4.00
20411	REMOVING GUARDRAIL	L.F.	208.00	208.00
20415	REMOVING CATCH BASINS	EACH	2.00	2.00
20501	COMMON EXCAVATION	C.Y.	190,230.00	190,230.00
20502	ROCK EXCAVATION	C.Y.	1,000.00	1,000.00
20620	EXCAVATION FOR STRUCTURES, CULVERTS C-20-61	L.S.	1.00	1.00
21301	FINISHING ROADWAY	L.S.	1.00	1.00
30404	CRUSHED AGGREGATE BASE COURSE	TON	27,124.00	27,124.00
40204	BITUMINOUS MATERIAL FOR TACK COAT	GAL.	211.00	211.00
40501	BITUMINOUS MATERIAL FOR PLANT MIXES	TON	149.00	149.00
40908	CONCRETE PAVEMENT, 8-INCH	S.Y.	32,608.00	32,608.00
40934	CONCRETE SURFACE DRAINS	C.Y.	8.00	8.00
40918	High Early Strength Concrete Pavement 8-inch	S.Y.	2400.00	2400.00
41001	RECYCLED BITUMINOUS SURFACE	TON	3,668.00	3,668.00
41010	SALVAGED BITUMINOUS PAVEMENT	TON	6,397.00	6,397.00
50401	CONCRETE MASONRY, CULVERTS	C.Y.	98.00	98.00
50505	HIGH-STRENGTH BAR STEEL REINFORCEMENT, CULVERTS	LB.	11,140.00	11,140.00
52001	CULVERT PIPE, CLASS III, 12-INCH	L.F.	71.00	71.00
52003	CULVERT PIPE, CLASS III, 18-INCH	L.F.	369.00	369.00



5 of 13

DATE 04/29/87

ITEM	ITEM DESCRIPTION	UNIT	TOTAL	1442-01-73 QUANTITY
52005	CULVERT PIPE, CLASS III, 24-INCH	L.F.	318.00	318.00
52059	APRON ENDWALLS FOR CULVERT PIPE, 12-INCH	EACH	3.00	3.00
52061	APRON ENDWALLS FOR CULVERT PIPE, 18-INCH	EACH	20.00	20.00
52063	APRON ENDWALLS FOR CULVERT PIPE, 24-INCH	EACH	12.00	12.00
52205	REINFORCED CONCRETE CULVERT PIPE, CLASS III, 24-INCH	L.F.	58.00	58.00
52260	REINFORCED CONCRETE APRON ENDWALLS FOR CULVERT PIPE, 12-INCH	EACH	3.00	3.00
52262	REINFORCED CONCRETE APRON ENDWALLS FOR CULVERT PIPE, 18-INCH	EACH	1.00	1.00
52264	REINFORCED CONCRETE APRON ENDWALLS FOR CULVERT PIPE, 24-INCH	EACH	2.00	2.00
60123	CONCRETE CURB AND GUTTER, 30-INCH, TYPE A	L.F.	5,149.00	5,149.00
60133	CONCRETE CURB AND GUTTER, 30-INCH, TYPE D	L.F.	4,972.00	4,972.00
60160	CONCRETE CURB AND GUTTER, 36-INCH, TYPE A	L.F.	360.00	360.00
60601	RIPRAP	C.Y.	7,604.00	7,604.00
60602	HEAVY RIPRAP	C.Y.	52.00	52.00
60825	REINFORCED CONCRETE PIPE, CLASS III, STORM SEWER, 12-INCH	L.F.	930.00	930.00
60827	REINFORCED CONCRETE PIPE, CLASS III, STORM SEWER, 18-INCH	L.F.	636.00	636.00
61121	INLETS, TYPE 1	EACH	3.00	3.00
61122	INLETS, TYPE 3	EACH	34.00	34.00
61163	INLET COVERS, TYPE C	EACH	3.00	3.00
61167	INLET COVERS, TYPE H	EACH	34.00	34.00
61222	PIPE UNDERDRAIN, DRAIN TILE, 6-INCH	L.F.	1,200.00	1,200.00
61406	ANCHORAGES FOR STEEL PLATE BEAM GUARD	EACH	4.00	4.00
61408	STEEL PLATE BEAM GUARD, CLASS A	L.F.	290.00	290.00
61409	STEEL PLATE BEAM GUARD, CLASS B	L.F.	100.00	100.00
61801	MAINTENANCE AND REPAIR OF HAUL ROADS	L.S.	1.00	1.00

S.I.

DATE 04/29/87

ITEM	ITEM DESCRIPTION	UNIT	TOTAL	1442-01-73 QUANTITY
61910	MOBILIZATION	L.S.	1.00	1.00
62001	CONCRETE CORRUGATED MEDIAN	S.F..	735.00	735.00
62101	LANDMARK REFERENCE MONUMENTS	EACH	21.00	21.00
62301	CALCIUM CHLORIDE SURFACE TREATMENT	TON	36.00	36.00
62401	WATER	MGAL	200.00	200.00
62505	SALVAGED TOPSOIL	S.Y.	102,842.00	102,842.00
62702	MULCHING	S.Y.	96,865.00	96,865.00
62802	EROSION MAT	S.Y.	513.00	513.00
62810	EROSION BALES	EACH	50.00	50.00
62902	FERTILIZER, TYPE A	CWT.	33.90	33.90
62905	FERTILIZER, TYPE B	CWT.	38.30	38.30
63002	SEEDING	LB.	1,389.00	1,389.00
63101	SODDING	S.Y.	15,160.00	15,160.00
64202	FIELD OFFICE, TYPE B	L.S.	1.00	1.00
64210	FIELD LABORATORY	L.S.	1.00	1.00
64301	TRAFFIC CONTROL	L.S.	1.00	1.00
64406	PAVEMENT MARKING, EPOXY, 4-INCH	L.F.	24,530.00	24,530.00
64414	PAVEMENT MARKING, CHANNELIZING, EPOXY, 8-INCH	L.F.	400.00	400.00
64437	PAVEMENT MARKING, STOP LINE, EPOXY, 18-INCH	L.F.	112.00	112.00
64472	PAVEMENT MARKING, ARROWS, EPOXY, TYPE 2	EACH	4.00	4.00
64479	PAVEMENT MARKING, WORDS, EPOXY	EACH	4.00	4.00
64484	TEMPORARY PAVEMENT MARKING	L.F.	10,140.00	10,140.00
64491	PAVEMENT MARKING, DIAGONAL, EPOXY, 18-INCH	L.F.	12.00	12.00
90005	REINFORCED CONCRETE HORIZONTAL ELLIPTICAL PIPE, CLASS HE-III, 14X23-INCH	L.F.	74.00	74.00
90006	REINFORCED CONCRETE HORIZONTAL ELLEPTICAL APRON ENDWALLS, 14X23-INCH	EACH	2.00	2.00
90007	REINFORCED CONCRETE HORIZONTAL ELLIPTICAL APRON ENDWALLS, 19X30-INCH	EACH	2.00	2.00
90008	REINFORCED CONCRETE HORIZONTAL ELLIPTICAL APRON ENDWALLS, 24X38-INCH	EACH	2.00	2.00

SHEET 3.2

DATE 04/29/87

ITEM	ITEM DESCRIPTION	UNIT	TOTAL	1442-01-73 QUANTITY
90338	GRADING, SHAPING AND FINISHING INTERSECTION, DETOUR	L.S.	1.00	1.00
90377	BITUMINOUS SURFACING DETOUR	TON	30.00	30.00
90549	REINFORCED CONCRETE HORIZONTAL ELLIPTICAL PIPE CLASS HE-III, 19X30-INCH	L.F.	39.00	39.00
90550	REINFORCED CONCRETE HORIZONTAL ELLIPTICAL PIPE, CLASS HE-III, 24X38-INCH	L.F.	55.00	55.00
90598	DRAIN TILE EXPLORATION	L.F.	500.00	500.00
90582	GEOTEXTILE FABRIC TYPE "R"	S.Y.	7450.00	7450.00
90600	PIPE UNDERDRAIN, WRAPPED, 6-INCH	L.F.	18,000.00	18,000.00
90647	SILT FENCE	L.F.	594.00	594.00
90648	SILT FENCE MAINTENANCE	L.F.	594.00	594.00
90882	SAWING EXISTING PAVEMENT	L.F.	120.00	120.00
90009	CREDIT FOR SIKAFLEX	L.S.	1.00	1.00
90010	PROTECTIVE SURFACE TREATMENT	L.F.	10,000.00	10,000.00
90011	SPECIAL BACKFILL	TON	4400.00	4400.00
90600-1	PIPE UNDERDRAIN, WRAPPED, 6-INCH	L.F.	3446.00	3446.00

SHEET 3 OF 3

STATE PROJECT NUMBER	SHEET NO.
1442-01-73	3A

MISCELLANEOUS QUANTITIES

S.T.H. 23 FOND DU LAC CO.

CLEARING AND GRUBBING

LOCATION STA.-STA.	CLEARING I.D.	CLEARING STA.	GRUBBING I.D.	GRUBBING STA.
STH 23				
139+50 - 140+00	52		52	
140+00 - 148+00		8		8
148+00 - 149+00	8		8	
149+00 - 150+00	13		13	
150+00 - 151+00	8		8	
151+00 - 153+00	X		X	
153+00 - 154+00	20		20	
154+00 - 155+00	6		6	
155+00 - 156+00	7		7	
156+00 - 165+00	X		X	
165+00 - 166+00	50		50	
166+00 - 169+00	X		X	
169+00 - 170+00	20		20	
170+00 - 171+00	54			1
171+00 - 185+00	X		X	
185+00 - 186+00	11		11	
186+00 - 190+00	X		X	
190+00 - 191+00	24		24	
191+00 - 195+00		3		3
194+00 - 195+00	54		54	
195+00 - 196+00	X		X	
196+00 - 197+00	57		57	
197+00 - 206+00	X		X	
206+00 - 207+00	16		16	
207+00 - 211+00	X		X	
OELKE DRIVE				
51+00 - 52+00	15		15	
CTH "UU"				
48+00 - 51+00	X		X	
51+00 - 53+00	X		X	

CONCRETE CURB AND GUTTER, 30-INCH TYPE A

LOCATION STA.-STA.		L.F.
139+50 - 144+20	MEDIAN	950
144+75 - 157+60	MEDIAN	2583
158+20 - 165+45	MEDIAN	1450
MARYHILL PARK DRIVE		166

CONCRETE SURFACE DRAINS

LOCATION		C.Y.
165+00	LT. & RT.	4
CTH "UU" 49+70	LT. & RT.	4

CONCRETE CORRUGATED MEDIAN

LOCATION STA.-STA.	S.F.
165+42 - 166+80	735

REMOVING OLD CULVERTS

LOCATION		L.S.
169+38	12' SPAN BOTTOMLESS CONC. BOX CULV.	1
209+87	2' X 2' X 46' CONC. BOX CULV.	1

PIPE UNDERDRAIN, DRAIN TILE, 6-INCH

STA.-STA.	LOCATION	L.F.
145+00 - 165+00	SIDE SLOPES	1200

STEEL PLATE BEAM GUARD (CLASS A)* AND ANCHORAGE

LOCATION STA.-STA.		L.F.	ANCHORAGES EACH
STH 23			
168+65 - 170+10	LT.	145	2
168+70 - 170+15	RT.	145	2

* SEE POST FOOTING DETAIL ON SDD

CONCRETE CURB AND GUTTER, 30-INCH TYPE D

LOCATION STA.-STA.		L.F.
139+50 - 143+90	RT.	440
139+50 - 165+00	LT.	2550
145+18 - 165+00	RT.	1982

REMOVING PAVEMENT

LOCATION STA.-STA.	S.Y.
139+50 - 172+00	8000
180+00 - 211+00	7600

STEEL PLATE BEAM GUARD (CLASS B)

LOCATION STA.-STA.	L.F.
STH 23	
186+50 - 187+50 92' RT.	100

CONCRETE CURB AND GUTTER, 36-INCH TYPE A

LOCATION STA.-STA.	L.F.
CTH "UU"	360

CALCIUM CHLORIDE SURFACE TREATMENT

LOCATION	TON
UNDISTRIBUTED	36

REMOVING SURFACE DRAINS

LOCATION		EACH
157+13	LT. & RT.	2
183+60	LT. & RT.	2

PAVEMENT MARKING

LOCATION	EDGE LINE* SOLID WHITE 4-INCH L.F.	CENTERLINE* SOLID YELLOW 4-INCH L.F.	CHANNELIZING* SOLID WHITE 8-INCH L.F.	LANE LINE* DASHED WHITE 4-INCH L.F.	CENTERLINE* DASHED YELLOW 4-INCH L.F.	STOP LINE* SOLID WHITE 18-INCH L.F.	TEMPORARY PAVEMENT MARKING L.F.
STH 23	12,800	8,809	400	1,860			6,150
SIDE ROADS							
MARYHILL PARK DR.		125				33	
OELKE DRIVE					104	27	
CTH "UU"		832				52	3,990
					1		

*EPOXY

BITUMINOUS MATERIAL FOR PLANT MIXES AND TACK COAT; RECYCLED BITUMINOUS SURFACE; SALVAGED BITUMINOUS PAVEMENT

LOCATION STA.-STA.		BITUMINOUS MATERIAL FOR PLANT MIXES TON	BITUMINOUS MATERIAL FOR TACK COAT GAL.	RECYCLED BITUMINOUS SURFACE PAVEMENT TON	RECYCLED BITUMINOUS SURFACE SHOULDERS TON	SALVAGED BITUMINOUS PAVEMENT TON
139+50 - 143+00	E.B.	2.6	8		65	483
143+00 - 146+00	E.B.	0.5	6		12	414
146+00 - 164+50	E.B.	14.0	20		355	1664
164+50 - 169+50	E.B.	3.0	8		73	316
139+50 - 143+00	W.B.	1.3	4		33	
143+00 - 146+00	W.B.	2.3	7		58	
146+00 - 164+50	W.B.	14.0	20		355	
164+50 - 169+50	W.B.	1.6	4		40	
169+50 - 175+00		3.0	8		74	464
175+00 - 179+50		1.6	4		41	380
179+50 - 196+50		9.1	26		228	1433
196+50 - 203+40		2.9	8		72	630
203+40 - 206+24.12		1.9	5		48	279
206+24.12 - 211+00		19.0	29	423	55	334
ST. MARY'S SCHOOL EAST ENTRANCE		1.1	3	28		
NAZARETH HEIGHTS INFIRMARY DR.		5.0	14	125		
MARYHILL PARK DRIVE		0.1		2		
OELKE DRIVE		7.4	18	186		
CTH "UU"		8.0	19	200		
TEMPORARY ROADS & DETOUR, RT.		37.6		940		
PE, STA. 189+80 RT.		13.0		255		

SOD FOR STRUCTURES

LOCATION			SOD S.Y.	STRUCTURE
165+00	45'	RT.	10	CONC. SURFACE DRAIN
165+00	24'	LT.	10	CONC. SURFACE DRAIN
202+57	24'	RT.	8	CURB AND GUTTER
202+74	24'	LT.	8	CURB AND GUTTER
204+09	24'	RT.	8	CURB AND GUTTER
204+24	24'	LT.	8	CURB AND GUTTER
MARYHILL PARK DRIVE				
48+99	12'	LT.	8	CURB AND GUTTER
48+99	12'	RT.	8	CURB AND GUTTER
CTH "UU"				
49+27	23'	LT.	8	CURB AND GUTTER
49+36	19'	RT.	8	CURB AND GUTTER
49+68	40'	LT.	10	CONC. SURFACE DRAIN
49+72	36'	RT.	10	CONC. SURFACE DRAIN
50+85	17'	LT.	8	CURB AND GUTTER
50+94	25'	RT.	8	CURB AND GUTTER

SODDING, EROSION MAT, RIPRAP

LOCATION STA.-STA.		SODDING S.Y.	EROSION MAT S.Y.	RIPRAP C.Y.
139+50 - 145+00	LT.			1266
139+50 - 145+00	RT.			1266
145+00 - 155+00	LT.			2302
145+00 - 157+00	RT.			2762
155+00 - 159+00	LT.	667	513	
159+00 - 175+00	LT.	2667		
159+00 - 175+00	RT.	2667		
165+35	LT. & RT.			8
175+00 - 183+00	LT.	1333		
175+00 - 183+00	RT.	1333		
183+00 - 192+00	LT.	2333		
183+00 - 194+00	RT.	1833		
204+00 - 210+00	LT.	1000		
204+00 - 210+00	RT.	1000		
AT STRUCTURES (LISTED ELSEWHERE)		120		
SOD COLLARS (AT CULVERTS LISTED ELSEWHERE)		199		

SAWING EXISTING PAVEMENT

LOCATION	L.F.
STH 23 STA. 211+00	30
MARYHILL PARK DRIVE	24
OELKE DRIVE	22
CTH "UU"	44

TEMPORARY PAVEMENT MARKING

LOCATION	EDGE LINE SOLID WHITE 4-INCH L.F.	CENTERLINE SOLID YELLOW 4-INCH L.F.
STH 23	4100	2050
CTH "UU"	2600	1330

LEVELS ON: 11,12,13,14,15,16,17,18,19,20.

FILE NAME: HDGN:E42,3003144201300

PIPE UNDERDRAIN, WRAPPED, 6-INCH

LOCATION STA.-STA.		L.F. RT.	L.F. LT.	45° BEND EACH*
139+50 - 141+96	E.B.	246	246	
142+00 - 145+17	E.B.	317	317	
145+20 - 148+06	E.B.	286	286	
148+10 - 150+96	E.B.	286	286	
151+00 - 153+46	E.B.	246	246	
153+50 - 155+96	E.B.	246	246	
156+00 - 158+48	E.B.	248	248	
158+51 - 160+96	E.B.	245	245	
161+00 - 165+41	E.B.	441	441	
165+42 - 169+30	E.B.	388		
169+44 - 173+99	E.B.	455		
174+00 - 177+99	E.B.	421		1
178+00 - 181+99	E.B.	418		1
182+00 - 185+99	E.B.	415		1
186+00 - 193+40	E.B.	780		2
193+41 - 196+86	E.B.	345		
196+90 - 203+80	E.B.	690		
139+50 - 141+96	W.B.	246	246	
142+00 - 145+15	W.B.	315	315	
145+18 - 148+06	W.B.	288	288	
148+10 - 150+96	W.B.	286	286	
151+00 - 153+46	W.B.	246	246	
153+50 - 155+96	W.B.	246	246	
156+00 - 158+48	W.B.	248	248	
158+51 - 160+96	W.B.	245	245	
161+00 - 165+41	W.B.	441	441	
165+44 - 169+30	W.B.		386	
169+44 - 173+99	W.B.		455	
174+00 - 176+85	W.B.		307	1
177+51 - 181+99	W.B.		448	
182+00 - 185+99	W.B.		421	1
186+00 - 193+40	W.B.		782	2
193+41 - 196+86	W.B.		345	
196+90 - 203+90	W.B.		700	

*COST TO BE INCIDENTAL TO COST OF UNDERDRAIN.

WATER

LOCATION	M.GAL.
UNDISTRIBUTED	200

REMOVING GUARDRAIL

LOCATION STA.-STA.		L.F.
139+50 - 140+00	LT.	50
169+00 - 169+87	LT. & RT.	158

REMOVING CURB AND GUTTER

LOCATION STA.-STA.		L.F.
139+50 - 143+78	LT.	431
139+50 - 144+36	RT.	486
144+27 - 156+90	LT.	1265
144+95 - 156+90	RT.	1195
183+83 - 186+69	LT.	286
183+84 - 186+43	RT.	259
186+88 - 187+66	LT.	78
186+97 - 187+66	RT.	69

DRAIN TILE EXPLORATION

LOCATION	L.F.
UNDISTRIBUTED	500

REMOVING CATCH BASINS

LOCATION			EACH
143+78	10'	RT.	1
145+74	97'	RT.	1

LANDMARK REFERENCE MONUMENTS*

LOCATION STATION				TYPE A EACH
P.I.	144+00			1
P.I.	144+00	26'	LT.	1
SEC. CORNER	150+17.74	85.51'	RT.	5
P.I.	157+00.15			1
P.I.	167+52.50			1
P.I.	176+38.20			1
SEC. CORNER	176+83.00	8.05'	RT.	5
SEC. CORNER	203+40.60	11.97'	RT.	5
P.I.	203+40.70	B.K.		1

* MONUMENTS SHALL BE CAST-IN-PLACE AND SHALL BE 48-INCH MINIMUM DEPTH.

STATE PROJECT NUMBER	SHEET NO.
1442-01-73	3D

MISCELLANEOUS QUANTITIES

S.T.H. 23 FOND DU LAC CO.

CONCRETE PAVEMENT, 8-INCH

LOCATION STA.-STA.		S.Y.
STH 23		
139+50 - 141+00	E.B.	400
141+00 - 146+00	E.B.	1718
146+00 - 1155+00	E.B.	2402
155+00 - 159+50	E.B.	1302
159+50 - 164+50	E.B.	1334
164+50 - 165+42	E.B.	246
165+42 - 168+61	E.B.	852
139+50 - 141+00	W.B.	785
141+00 - 146+00	W.B.	1509
146+00 - 155+00	W.B.	2400
155+00 - 159+50	W.B.	1320
159+50 - 164+50	W.B.	1056
164+50 - 165+42	W.B.	123
165+42 - 168+61	W.B.	426
168+16 - 179+50		4605
179+50 - 191+82		4930
191+82 - 196+50		1625
196+50 - 200+00		1091
200+00 - 206+24.12		2833
MARYHILL PARK DRIVE		280
OELKE DRIVE		290
CTH "UU"		1081

CRUSHED AGGREGATE BASE COURSE

LOCATION STA.-STA.		BASE & SHOULDERS TON
139+50 - 141+00	E.B.	280
141+00 - 146+00	E.B.	878
146+00 - 155+00	E.B.	1666
155+00 - 159+50	E.B.	862
159+50 - 164+50	E.B.	926
164+50 - 165+42	E.B.	172
165+42 - 168+61	E.B.	464
139+50 - 141+00	W.B.	248
141+00 - 146+00	W.B.	938
146+00 - 155+00	W.B.	1666
155+00 - 159+50	W.B.	868
159+50 - 164+50	W.B.	834
164+50 - 165+42	W.B.	130
165+42 - 168+61	W.B.	402
168+61 - 179+50		2668
179+50 - 191+82		3098
191+82 - 196+50		1362
196+50 - 200+00		942
200+00 - 206+24		1480
206+24 - 211+00		1854
ST. MARY'S SCHOOL EAST ENTRANCE		114
MARYHILL PARK DRIVE		102
NAZARETH HEIGHTS INFIRMARY DRIVE		254
OELKE DRIVE		410
CTH "UU"		1082
TEMP. ROADS & DETOUR ROUTE		2294
DRIVEWAYS		564
PE @ 189+80 RT.		566

MISCELLANEOUS QUANTITIES

S.T.H. 23 FOND DU LAC CO.

LOCATION	SIZE IN.	TYPE	CLASS	THICKNESS (IN.) STEEL	THICKNESS (IN.) ALUMINUM	LENGTH (L.F.) NEW OR REPLACED	INLET ELEV.	DISCH. ELEV.	APRON ENDWALLS EACH	SOD COLLAR FOR ENDWALLS EACH	REMARKS
MAINLINE STH 23											
196+88	24	RCCP	III			58	1018.96	1018.81	2	6	
209+87	24 X 38	RCEP	HE-III			55	1020.25	1020.12	2	7	
SIDE ROADS											
MARYHILL PARK DR. 49+20.50	24	CP	III	.064	.075	66	885.30	877.30	2	5	SKEW 7° L.H.F.
OELKE DR. 50+65	24	CP	III	.064	.075	74	980.86	976.60	2	5	SKEW 3° R.H.F.
OELKE DR. 53+00	19 X 30	RCEP	HE-III			39	979.94	979.48	2	6	SKEW 8° R.H.F.
CTH "UU" 49+54	14 X 23	RCEP	HE-III			74	1021.49	1021.36	2	5	
PRIVATE ENTRANCES											
143+80 LT.	24	CP	III	.064	.075	35			2	5	
157+90 LT.	18	CP	III	.064	.060	60			2	4	
166+80 RT.	18	CP	III	.064	.060	58			2	4	
168+61 RT.	24	CP	III	.064	.075	53			2	5	
168+63 LT.	18	CP	III	.064	.060	58			2	4	
170+19 RT.	24	CP	III	.064	.075	57			2	5	
170+20 LT.	24	CP	III	.064	.075	33			2	5	
177+05 RT.	18	CP	III	.064	.075	64			2	4	
192+59 RT.	18	CP	III	.064	.060	20			2	4	
195+37 LT.	18	CP	III	.064	.060	34			2	4	
206+00 LT.	18	CP	III	.064	.060	24			2	4	
207+00 LT.	18	CP	III	.064	.060	24			2	4	

LOCATION STA.-STA.	SALVAGED TOPSOIL S.Y.	SEEDING LB.	FERTILIZER TYPE B CWT.	MULCHING S.Y.	FERTILIZER TYPE A CWT.
139+50 - 140+00	1,269	17**		1,136	8.0
140+00 - 145+00	10,728	145	7.0	10,045	
145+00 - 150+00	11,406	154**		8,979	7.2
150+00 - 155+00	11,067	149**		9,118	7.0
155+00 - 160+00	8,755	118**		8,755	5.5
160+00 - 165+00	7,732	104	4.9	7,563	
165+00 - 170+00	5,360	72	3.4	5,360	
170+00 - 175+00	5,445	74	3.4	5,445	
175+00 - 180+00	7,354	99	4.6	7,149	
180+00 - 185+00	7,372	100	4.6	7,285	
185+00 - 190+00	9,777	132**		9,777	6.2
190+00 - 195+00	3,013	41	1.9	2,788	
195+00 - 200+00	2,206	30	1.4	2,107	
200+00 - 205+00	2,640	36	1.7	2,640	
205+00 - 211+00	3,478	47	2.2	3,478	
NAZARETH HTS. INFIRMARY DR.	2,074	28	1.3	2,074	
ST. MARY'S SCHOOL EAST DR.	692	9	0.4	692	
OELKE DRIVE	858	12	0.5	858	
CTH "UU"	1,283	17	0.8	1,283	
*DETOUR ROUTE	333	5	0.2	333	

* SHOWN FOR INFORMATION ONLY.
** NO. 3 SEED REQUIRED, ALL OTHER NO. 1.

SILT FENCE

LOCATION STA.-STA.		L.F.
167+20	LT.	16
167+20	RT.	16
168+70	LT.	16
168+70	RT.	16
169+70	LT.	16
169+70	RT.	16
171+20	LT.	16
171+20	RT.	16
160+00	LT. & RT.	32
165+00	LT. & RT.	32
173+00	LT. & RT.	32
176+00	LT. & RT.	32
178+00	LT. & RT.	32
50+75	LT. OELKE DRIVE	16
181+00	LT. & RT.	32
184+00	LT. & RT.	32
187+00	LT. & RT.	32
49+50	RT. CTH "UU"	32
204+00	RT.	16
210+00	LT.	32
193+50	RT.	32
197+00	LT. & RT.	32
UNDISTRIBUTED		50

EROSION BALES

LOCATION	EACH
UNDISTRIBUTED	50

STATE PROJECT NUMBER	SHEET NO.
1442-01-73	3F

DETAIL SUMMARY OF MISCELLANEOUS QUANTITIES

STORM SEWER LIST

STRUCTURE NO.	STATION & LOCATION	STRUCTURE TYPE	COVER	GRATE ELEV.	DEPTH (FT.)	PIPE NO.	LOCATION	SIZE (IN.)	LENGTH (FT.)	TYPE	THICKNESS IN.		INLET ELEV.	DISCH. ELEV.	APRON ENDWALLS EACH	JOINT * TIES	REMARKS
		INLET	INLET								STEEL	ALUMINUM					
INLET 147	140+00.00 / 50.19' LT.	3	H	854.80	3.50												
						P 144	I 147 TO DITCH	12	70	R.C.P. SS. CL. III			831.63	831.19	1	2	2 45° ELBOWS REQUIRED
INLET 148	140+00.00 / 10.8' LT.	3	H	854.98	3.50												
						P 145	I 148 TO I 149	12	20	R.C.P. SS. CL. III			851.81	851.75			
INLET 149	140+00.00 / 12' RT.	3	H	855.00	2.75												
						P 146	I 149 TO I 150	12	34	R.C.P. SS. CL. III			851.75	851.65			
INLET 150	140+00.00 / 50' RT.	3	H	854.60	2.45												
						P 147	I 150 TO DITCH	12	50	R.C.P. S.S. CL. III			851.65	838.50	1	2	2 45° ELBOWS REQUIRED
INLET 151	142+70.00 / 50' LT.	3	H	873.54	3.50												
						P 148	I 151 TO DITCH	12	50	R.C.P. SS. CL. III			869.54	856.10	1	2	2 45° ELBOWS REQUIRED
INLET 152	142+70.00 / 12' LT.	3	H	873.90	4.17												
						P 149	I 152 TO I 179	12	20	R.C.P. SS. CL. III			870.73	870.67			
INLET 153	145+20.08 / 76' RT.	3	H	891.20	3.50												
						P 150	I 153 TO I 154	12	35	R.C.P. SS. CL. III			887.20	877.00			
INLET 154	145+05.43 / 38' RT.	3	H	890.38	3.38												
						P 151	I 154 TO I 155	18	25	R.C.P. SS. CL. III			886.50	886.38			
INLET 155	145+18.98 / 14' RT.	3	H	891.33	4.48												
						P 152	I 155 TO I 156	18	37	R.C.P. SS. CL. III			886.38	886.13			
INLET 156	145+18.98 / 24' LT.	3	H	890.93	2.97												
						P 153	I 156 TO DITCH	18	14	C.P. CL. III	.064	.060	886.13	886.05	1		
INLET 157	148+10.00 / 76' RT.	3	H	911.30	2.70												
						P 154	I 157 TO I 158	12	34	R.C.P. SS. CL. III			908.10	907.11			
INLET 158	148+10.00 / 38' RT.	3	H	911.70	3.79												
						P 155	I 158 TO I 159	18	20	R.C.P. SS. CL. III			907.41	907.29			
INLET 159	148+10.00 / 14' RT.	3	H	911.70	3.91												
						P 156	I 159 TO I 160	18	36	R.C.P. SS. CL. III			907.29	907.11			
INLET 160	148+00.00 / 24' LT.	3	H	910.60	2.99												
						P 157	I 160 TO DITCH	18	13	C.P. CL. III	.064	.060	907.11	907.04	1		
INLET 161	151+00.00 / 76' RT.	3	H	931.20	2.50	P 158A	I 162A - I 162	12	35								
INLET 161A	151+00 / 38' RT	3	H			P 158	I 161 ATO I 162A	12	~~96~~ 22	R.C.P. SS. CL. III			928.20	927.69			
INLET 162	151+00.00 / 24' LT.	3	H	931.20	3.01	P 158B	I 161 - I 161A	12	35								
INLET 162A	151+00 / 14' RT					P 159	I 162 TO DITCH	12	12	C.P. CL. III	.064	.060	927.69	927.62	1		
INLET 163	153+50.00 / 76' RT.	3	H	945.51	2.50												
						P 160	I 163 TO I 164	12	34	R.C.P. SS. CL. III			942.51	942.30			
INLET 164	153+50.00 / 38' RT.	3	H	945.91	3.11												
						P 161	I 164 TO I 165	12	20	R.C.P. SS. CL. III			942.30	942.16			
INLET 165	153+50.00 / 14' RT.	3	H	945.91	3.75												
						P 162	I 165 TO I 166	18	36	R.C.P. SS. CL. III			941.66	941.45			
INLET 166	153+40.00 / 24' LT.	3	H	946.39	3.44												
						P 163	I 166 TO DITCH	18	9	C.P. CL. III	.064	.060	941.45	941.39	1		
INLET 167	156+00.00 / 76' RT.	3	H	956.62	3.69	P 164A	I 167A - I 168A	12	22								
INLET 167A	156+00 / 38' RT	3	H			P 164	I 168A - I 168	12	~~96~~ 34	R.C.P. SS. CL. III			953.93	953.64			
INLET 168	156+00.00 / 24' LT.	3	H	956.62	2.49	P 164B	I 167 - I 167A	12	34								
INLET 168A	156+00 / 14' RT	3	H			P 165	I 168 TO DITCH	12	11	C.P. CL. III	.064	.060	953.64	953.60	1		
INLET 179	142+70.00 / 12' RT.	3	H	873.90	2.73												
						P 176	I 179 TO I 180	18	34	R.C.P. SS. CL. III			870.67	870.57			
INLET 180	142+70.00 / 50' RT.	3	H	873.54	2.47												
						P 177	I 180 TO DITCH	18	51	R.C.P. S.S. CL. III			870.57	856.57	1	2	2 45° ELBOWS REQUIRED

NOTE : GRATE ELEVATION IS FLANGE OF CURB & GUTTER.
DRAINAGE STRUCTURE LOCATIONS MEASURED TO FACE OF CURB

* PIPE JOINT CRITERIA

PIPE DIAMETER (IN.)	NO. OF JOINTS TO BE TIED.
12 - 18	END WALL

STATE PROJECT NUMBER	SHEET NO
1442-01-73	36

DETAIL SUMMARY OF MISCELLANEOUS QUANTITIES

STORM SEWER LIST CONTINUED

STRUCTURE NO.	STATION & LOCATION	STRUCTURE TYPE		COVER		GRATE ELEV.	DEPTH (FT.)	PIPE NO.	LOCATION	SIZE (IN.)	LENGTH (FT.)	TYPE	THICKNESS (IN.)		INLET ELEV.	DISCH. ELEV.	APRON ENDWALLS EACH		REMARKS
			INLET		INLET								STEEL	ALUMINUM					
INLET 169	158+51.31 / 76' RT.		3		H	964.57	2.17												
								P 166	I 169 TO I 170	12	34	RCP SS CL III			962.00	961.73			
INLET 170	158+51.31 / 38' RT.		3		H	964.97	2.74												
								P 167	I 170 TO I 171	18	20	RCP SS CL III			961.73	961.57			
INLET 171	158+51.31 / 14' RT.		3		H	964.97	2.9												
								P 168	I 171 TO I 172	18	39	RCP SS CL III			961.57	961.26			
INLET 172	158+51.31 /24' LT.		3		H	964.41	2.65												
								P 169	I 172 TO DITCH	18	9	CP CL III	.064	.060	961.26	961.20	1		
INLET 173	161 +00.00/60.82' RT.		3		H	969.26	2.50												
								P 170	I 173 TO I 174	18	34	R.C.P. SS CL III			966.26	966.04			
INLET 174	161 +00.00/22.82' RT.		3		H	969.66	3.12												
								P 171	I 174 TO I 175	18	12	R.C.P. SS CL III			966.04	965.96			
INLET 175	161 +00.00/ 9.6' RT.		3		H	969.66	3.20												
								P 172	I 175 TO I 176	18	22	R.C.P. SS CL III			965.96	965.81			
INLET 176	161 +00.00/16.33' LT.		3		H	969.26	2.95												
								P 173	I 176 TO I 172	18	270	R.C.P. SS CL III			965.81	961.26			
INLET 177	165+40 83/2' LT.		3		H	970.55	3.50												
								P 174	I 177 TO I 178	12	6	RCP SS CL III			966.55	966.43			
INLET 178	165+40.83/ 6' LT.		3		H	970.55	3.62												
								P 175	I 178 TO DITCH	12	48	CP CL III	.064	.060	966.43	965.10	1		
									I901 – I902		7								
								*P901	~~I 153 TO I 901~~	12	~~26~~	RCP SS CL III							
* INLET 901	145+00/92' RT		1		C				I902 – Lr. Ditch		87								
								*P902	~~I 901 TO EXISTING FIREWELL~~	12	~~67~~	RCP SS CL III							
* EXIST FIREWELL	144+41/128' RT ——	EXISTING STRUCTURE ——																	
								*P903	EXISTING FIREWELL TO I 902	12	190	RCP SS CL III							
* INLET 902	143+58/67' LT		1		C														
								*P904	I 902 TO I 903	12	49'	RCP SS CL III							
* INLET 903	143+44/105' LT		1		C														

NOTES:
GRATE ELEVATION IS FLANGE OF CURB & GUTTER UNLESS NOTED OTHERWISE.

DRAINAGE STRUCTURE LOCATIONS MEASURED TO FACE OF CURB UNLESS NOTED OTHERWISE

DRAINAGE STRUCTURE LOCATION IS TO CENTER OF STRUCTURE

*INVERT AND/OR GRATE ELEVATIONS ARE TO BE DETERMINED BY THE FIELD ENGINEER.

EARTHWORK QUANTITIES

STATE PROJECT NUMBER	SHEET NO.
1442-01-73	3H
EARTHWORK	

S.T.H. 23

C.T.H. "K" TO C.T.H. "UU"

STATION	END AREAS COMMON FILL SQ. FT.		EARTHWORK VOLUMES COMMON FILL CU. YDS.		ACCUMULATED E/W VALUES COMMON FILL CU. YDS.	
139 + 50	52.	1,847.				
			149.	3,585.	149.	4,302.
140 + 00	109.	2,025.				
			257.	7,496.	406.	13,297.
141 + 00	30.	2,023.				
			130.	6,850.	536.	21,522.
142 + 00	40.	1,678.				
			137.	5,522.	673.	28,148.
143 + 00	34.	1,304.				
			233.	2,833	906.	31,548.
144 + 00	92.	226.				
			1,759.	481.	2,665.	32,125.
145 + 00	858.	34.				
			3,944.	144.	6,609.	32,298.
146 + 00	1,272.	44.				
			5,467.	256.	12,076.	32,605.
147 + 00	1,680.	94.				
			7,241.	256.	19,317.	32,912.
148 + 00	2,230.	44.				
			7,128.	222.	26,445.	33,178.
149 + 00	1,619.	76.				
			6,154.	291.	32,599.	33,528.
150 + 00	1,704.	81.				
			6,541.	261.	39,140.	33,841.
151 + 00	1,828.	60.				
			6,907.	254.	46,047.	34,146.
152 + 00	1,902.	77.				
			6,981.	198.	53,028.	34,383.
153 + 00	1,868.	30.				
			6,204.	65.	59,232.	34,461.
154 + 00	1,482.	5.				
			5,524.	9.	64,756.	34,472.
155 + 00	1,501.	0.				
			6,289.	0.	71,045.	34,472.
156 + 00	1,895.	0.				
			6,304.	0.	77,349.	34,472.
157 + 00	1,509.	0.				
			6,133.	0.	83,482.	34,472.
158 + 00	1,803.	0.				
			7,731.	0.	91,213.	34,472.
159 + 00	2,372.	0.				
			5,738.	0.	96,951.	34,472.
159 + 65	2,395.	0.				
			3,010.	0.	99,961.	34,472.
160 + 00	2,249.	0.				
			7,846.	0.	107,807.	34,472.
161 + 00	1,988.	0.				
			6,831.	0.	114,638.	34,472.
162 + 00	1,701.	0.				
			4,963.	0.	119,601.	34,472.
163 + 00	979.	0.				
			2,589.	0.	122,190.	34,472.
164 + 00	419.	0.				
			1,028.	17.	123,218.	34,492.
165 + 00	136.	9.				
			528.	211.	123,746.	34,745.
166 + 00	149.	105.				
			509.	493.	124,255.	35,337.
167 + 00	126.	161.				
			502.	541.	124,757.	35,986.
168 + 00	145.	131.				
			444.	731.	125,201.	36,863.
169 + 00	95.	264.				
			109.	303.	125,310.	37,227.
169 + 30.98	95.	264.				
			68.	273.	125,378.	37,555.
169 + 45.02	74.	295.				
			83.	264.	125,461.	37,871.
169 + 70	74.	295.				
			219.	746.	125,680.	38,767.
170 + 00	75.	181.				
			109.	969.	125,789.	39,929.
171 + 00	43.	222.				
			81.	1,270.	125,870.	41,453.
172 + 00	16.	301.				
			85.	1,726.	125,995.	43,525.
173 + 00	28.	385.				
			70.	2,359.	126,025.	46,355.
174 + 00	18.	547.				
			76.	2,781.	126,101.	49,693.
175 + 00	20.	727.				
			67.	2,287.	126,168.	52,437
176 + 00	21.	775.				

S.T.H. 23

C.T.H. "K" TO C.T.H. "UU"

STATION	END AREAS COMMON FILL SQ. FT.		EARTHWORK VOLUMES COMMON FILL CU. YDS.		ACCUMULATED E/W VALUES COMMON FILL CU. YDS.	
177 + 00	15.	460.				
			52.	1,320.	126,220.	54,021.
177 + 70	25.	558.				
			31.	629.	126,251.	54,776.
178 + 00	30.	575.				
			109.	2,441.	126,360.	57,705.
179 + 00	29.	743.				
			87.	2,818.	126,447.	61,087.
180 + 00	18.	779.				
			72.	2,439.	126,519.	64,014.
181 + 00	21.	538.				
			169.	1,133.	126,688.	65,373.
182 + 00	70.	74.				
			985.	137.	127,673.	65,538.
183 + 00	462.	0.				
			4,044.	0.	131,717.	65,538.
184 + 00	1,722.	0.				
			7,828.	0.	139,545.	65,538.
185 + 00	2,505.	0.				
			10,081.	0.	149,626.	65,538.
186 + 00	2,939.	0.				
			10,853.	0.	160,479.	65,538.
187 + 00	2,922	0.				
			9,865.	0.	170,344.	65,538.
188 + 00	2,405.	0.				
			7,817.	0.	178,161.	65,538.
189 + 00	1,816.	0.				
			5,219.	0.	183,380.	65,538.
190 + 00	1,002.	0.				
			2,193.	4.	185,573.	65,543.
191 + 00	182.	2.				
			406.	172.	185,979.	65,749.
192 + 00	37.	91.				
			69.	415.	186,048.	66,247.
193 + 00	0.	133.				
			0.	498.	186,048.	66,845.
194 + 00	0.	136.				
			0.	306.	186,048.	67,212.
194 + 75	0.	84.				
			0.	68.	186,048.	67,294.
195 + 00	0.	62.				
			0.	207.	186,048.	67,542.
196 + 00	0.	50.				
			0.	224.	186,048.	67,811.
197 + 00	0.	71.				
			0.	293.	186,048.	68,162.
198 + 00	0.	87.				
			0.	331.	186,048.	68,560.
199 + 00	0.	92.				
			0.	365.	186,048.	68,998.
200 + 00	0.	105.				
			0.	413.	186,048.	69,493.
201 + 00	0.	118.				
			0.	472.	186,048.	70,060.
202 + 00	0.	137.				
			6.	622.	186,054.	70,806.
203 + 00	3.	199.				
			43.	213.	186,097.	71,062.
203 + 40	55.	89.				
			83.	224.	186,180.	71,330.
204 + 00	20.	113.				
			194.	365.	186,374.	71,768.
205 + 00	85.	84.				
			217.	339.	186,591.	72,175.
206 + 00	32.	99.				
			198.	374.	186,789.	72,624.
207 + 00	75.	103.				
			174.	324.	186,963.	73,013.
208 + 00	19.	78.				
			59.	233.	187,022.	73,292.
209 + 00	13.	48.				
			146.	119.	187,168.	73,433.
210 + 00	66.	16.				
			181.	30.	187,349*	73,471.
211 + 00	32.	0.				

* NOTE:
ABOVE TOTAL INCLUDES 1000 CUBIC YARDS OF ROCK EXCAVATION.

SEE PLAN AND PROFILE SHEETS FOR APPROXIMATE LOCATIONS OF ROCK EXCAVATION.

S.T.H. 23

OELKE DRIVE

STATION	END AREAS COMMON FILL SQ. FT.		EARTHWORK VOLUMES COMMON FILL CU. YDS.		ACCUMULATED E/W VALUES COMMON FILL CU. YDS.	
50 + 50	0.	0.				
			0.	137.	0.	164.
51 + 00	0.	148.				
			9.	315.	9.	542.
52 + 00	5.	22.				
			105.	46.	114.	598.
53 + 00	52.	3.				
			148.	13.	262.	613.
53 + 66	28.	4.				
			98.	7.	360.	622.
54 + 31.43	25.	0.				

S.T.H. 23

C.T.H. "UU"

STATION	END AREAS COMMON FILL SQ. FT.		EARTHWORK VOLUMES COMMON FILL CU. YDS.		ACCUMULATED E/W VALUES COMMON FILL CU. YDS.	
48 + 28.13	32.	0.				
			21.	0.	21.	0.
48 + 50	20.	0.				
			53.	7.	74.	8.
49 + 00	37.	8.				
			44.	22.	118.	35.
51 + 00	3.	12.				
			91.	0.	209.	35.
52 + 00	21.	0.				
53 + 00	28.	0.				

S.T.H. 23

ST. MARY'S HIGH SCHOOL - EAST ENTRANCE
STA. 144+00 LT.

STATION	END AREAS COMMON FILL SQ. FT.		EARTHWORK VOLUMES COMMON FILL CU. YDS.		ACCUMULATED E/W VALUES COMMON FILL CU. YDS.	
5 + 50	0.	100.				
			0.	272.	0.	326.
6 + 00	0.	194.				
			45.	208.	45.	576.
6 + 50	49.	31.				
			55.	29.	100.	611.
7 + 00	10.	0.				

S.T.H. 23

NAZARETH HEIGHTS INFIRMARY ENTRANCE
STA. 157+90 LT.

STATION	END AREAS COMMON FILL SQ. FT.		EARTHWORK VOLUMES COMMON FILL CU. YDS.		ACCUMULATED E/W VALUES COMMON FILL CU. YDS.	
5 + 24.50	420.	0.				
			594.	0.	594.	0.
5 + 59	510.	0.				
			577.	0.	1,171.	0.
6 + 00	250.	0.				
			536.	0.	1,707.	0.
6 + 50	329.	0.				
			423.	0.	2,130.	0.
7 + 00	128.	0.				
			153.	3.	2,283.	4.
7 + 50	37.	3.				
			96.	10.	2,379.	16.
8 + 00	67.	8.				
			79.	7.	2,458.	24.
8 + 50	18.	0.				

S.T.H. 23

C.T.H. "K" TO C.T.H. "UU"

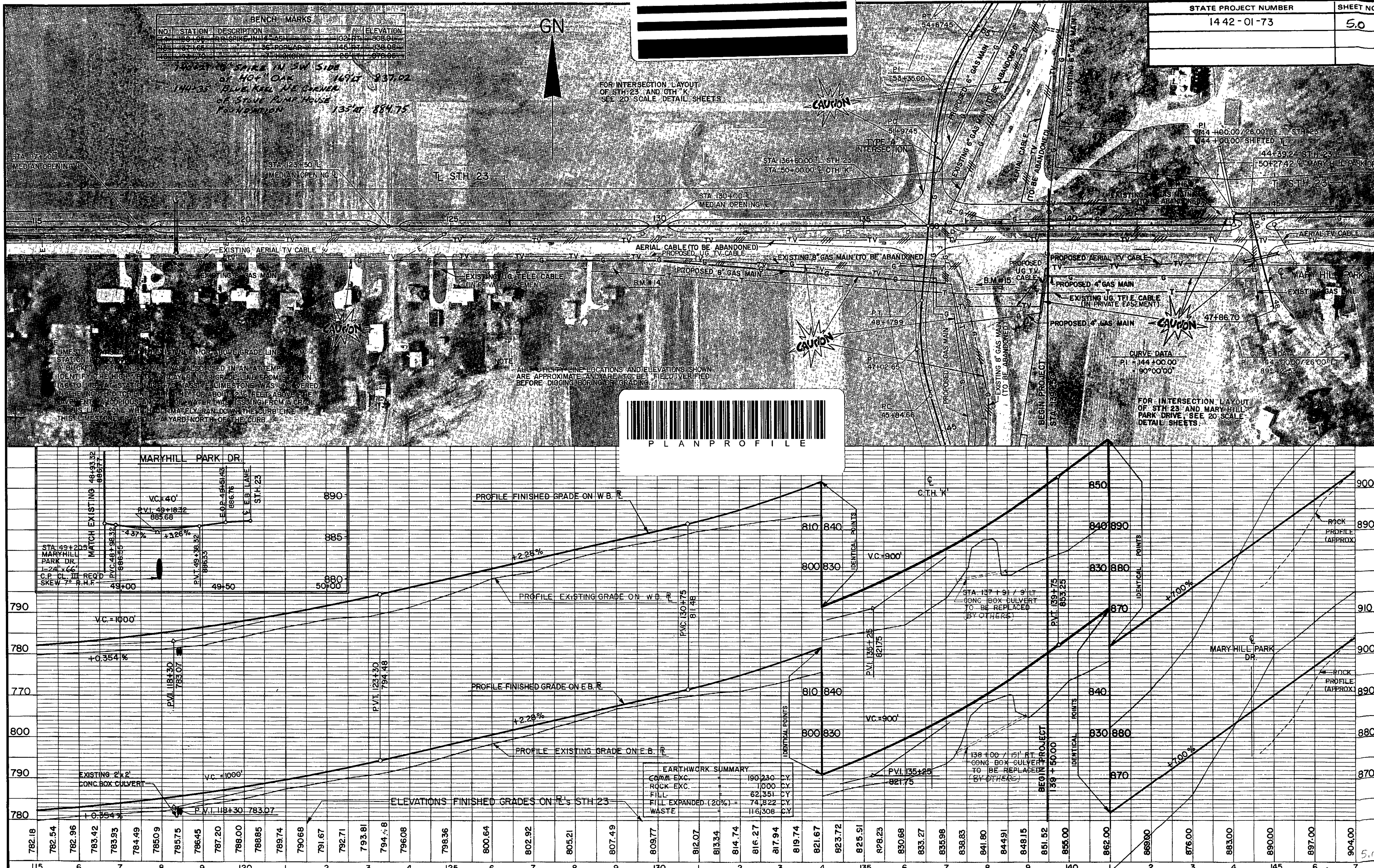
	EARTHWORK VOLUMES COMMON FILL CU. YDS.		ACCUMULATED E/W VOLUMES COMMON FILL CU. YDS.	
EARTHWORK FOR TEMPORARY ROADS AND DETOUR ROUTE	754	558	754	670

ROCK EXCAVATION

LOCATION	CY
146+00 - 148+00	1,000

[redacted]

STATE PROJECT NUMBER	SHEET NO.
1442-01-73	5.0



BENCH MARKS			
NO.	STATION	DESCRIPTION	ELEVATION
14	120+05	RR SPIKE IN 14" ASH 102' RT.	808.91
15	137+65	" " " 36" POPLAR 146' RT.	838.08
16	1??+70	" " " ?" HICKORY 26' LT.	876.??

140+21 +0" SPIKE IN SW SIDE OF 40+" OAK 169' LT 837.02
144+35 BLUE KELL NE CORNER OF STONE PUMP HOUSE FOUNDATION 135' RT 884.75

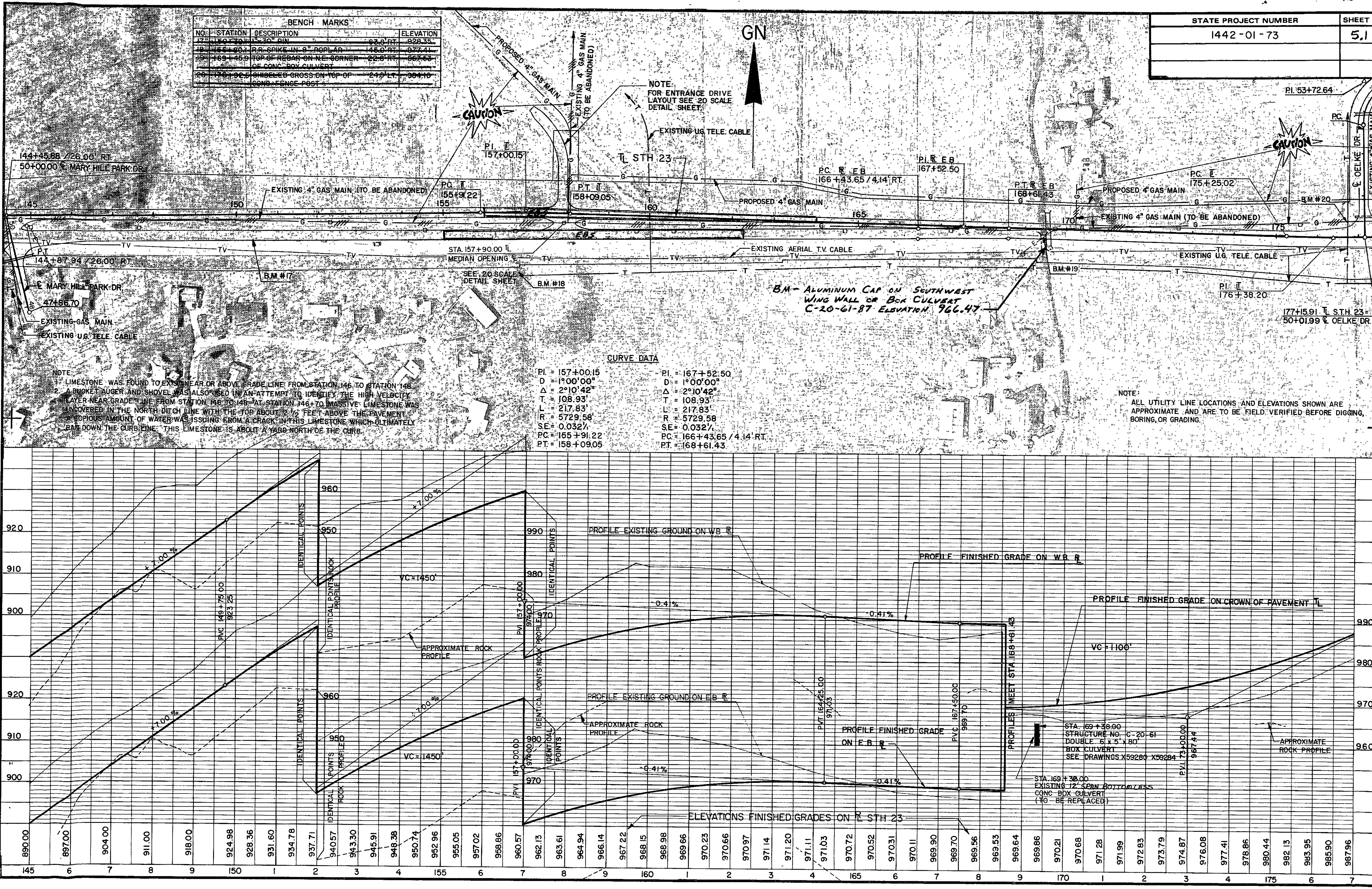
EARTHWORK SUMMARY			
COMM. EXC.	=	190,230	C.Y.
ROCK EXC.	=	1,000	C.Y.
FILL	=	62,351	C.Y.
FILL EXPANDED (20%)	=	74,822	C.Y.
WASTE	=	116,308	C.Y.

Catalog No. 2130-D142

STATE PROJECT NUMBER	SHEET NO.
1442-01-73	5.1

BENCH MARKS

NO.	STATION	DESCRIPTION		ELEVATION
17	150+30.1	1" x 30" PIN	63.8' RT.	928.35
18	166+80.1	R.R. SPIKE IN 8" POPLAR	145.0' RT.	977.41
19	169+45.9	TOP OF REBAR ON N.E. CORNER OF CONC. BOX CULVERT	22.8' RT.	967.63
20	176+92.5	CHISELED CROSS ON TOP OF CONC. FENCE POST	24.0' LT.	984.10



NOTE:
1. LIMESTONE WAS FOUND TO EXIST NEAR OR ABOVE GRADE LINE FROM STATION 146 TO STATION 148.
2. A BUCKET AUGER AND SHOVEL WAS ALSO USED IN AN ATTEMPT TO IDENTIFY THE HIGH VELOCITY LAYER NEAR GRADE LINE FROM STATION 146 TO 148. AT STATION 146+70 MASSIVE LIMESTONE WAS UNCOVERED IN THE NORTH DITCH LINE WITH THE TOP ABOUT 2 1/2 FEET ABOVE THE PAVEMENT. A COPIOUS AMOUNT OF WATER WAS ISSUING FROM A CRACK IN THIS LIMESTONE WHICH ULTIMATELY RAN DOWN THE CURB LINE. THIS LIMESTONE IS ABOUT A YARD NORTH OF THE CURB.

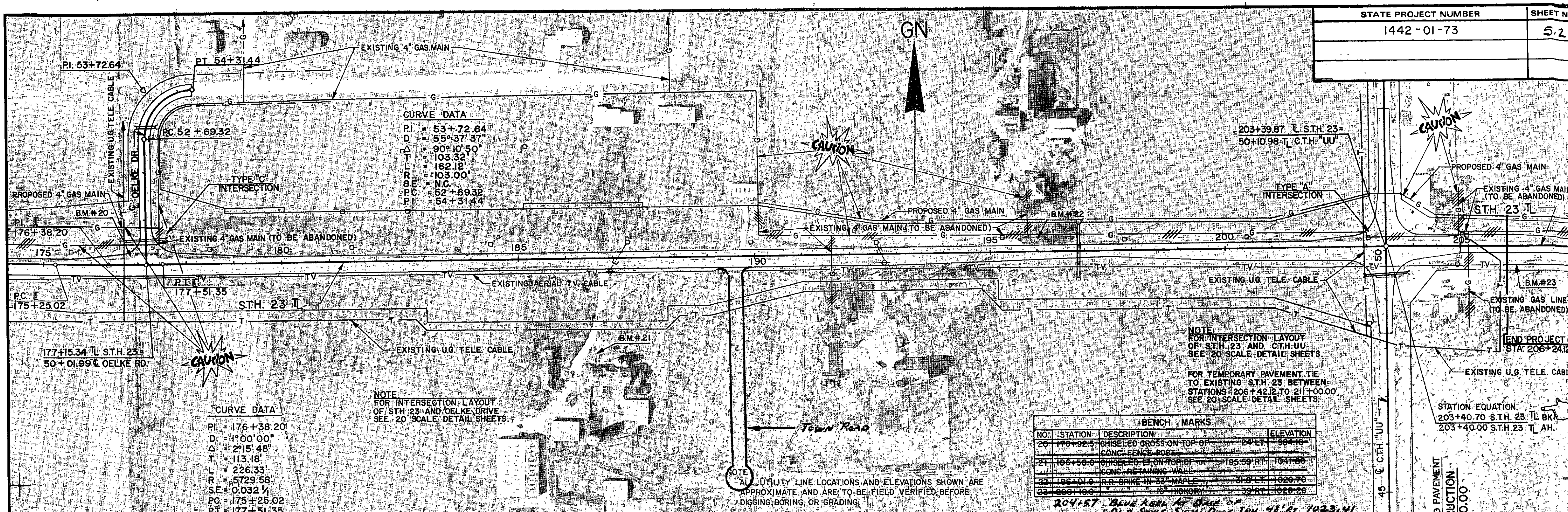
CURVE DATA

P.I. = 157+00.15	P.I. = 167+52.50
D = 1°00'00"	D = 1°00'00"
Δ = 2°10'42"	Δ = 2°10'42"
T = 108.93'	T = 108.93'
L = 217.83'	L = 217.83'
R = 5729.58'	R = 5729.58
S.E. = 0.032'/'	S.E. = 0.032'/'
P.C. = 155+91.22	P.C. = 166+43.65 / 4.14' RT.
P.T. = 158+09.05	P.T. = 168+61.43

NOTE:
ALL UTILITY LINE LOCATIONS AND ELEVATIONS SHOWN ARE APPROXIMATE AND ARE TO BE FIELD VERIFIED BEFORE DIGGING, BORING, OR GRADING.

Catalog No. 2130-D142

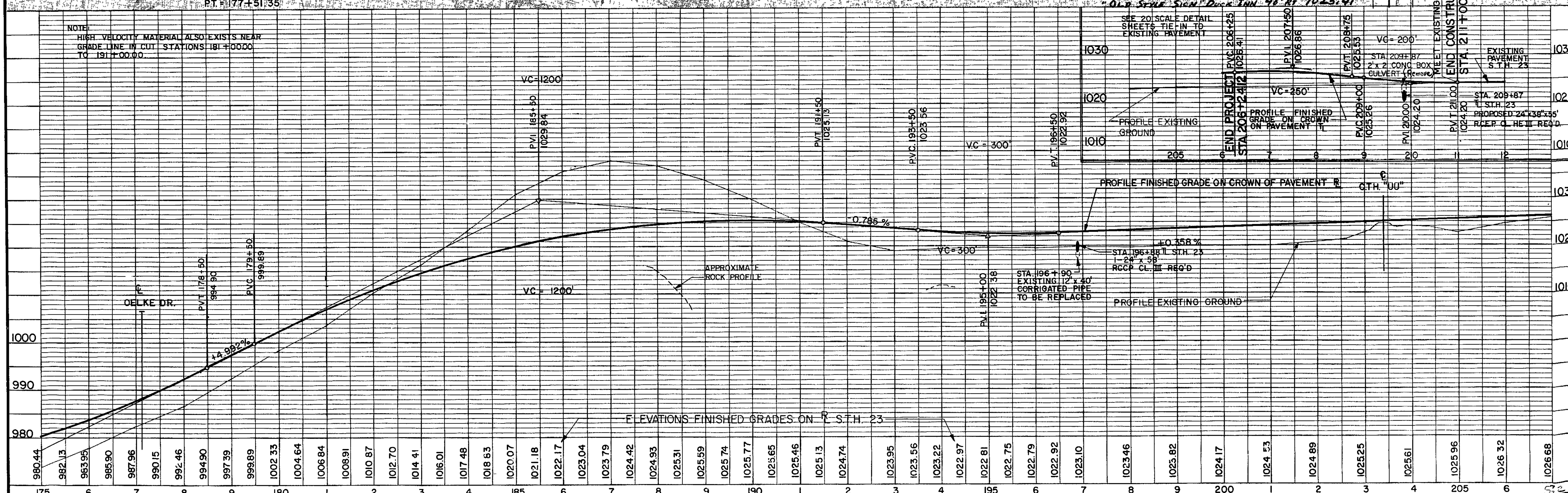
STATE PROJECT NUMBER	SHEET NO
1442-01-73	5.2



BENCH MARKS

NO.	STATION	DESCRIPTION		ELEVATION
20	176+92.5	CHISELED CROSS ON TOP OF CONC. FENCE POST	24' LT.	984.16
21	186+58.6	CHISELED ☐ ON TOP OF CONC. RETAINING WALL	195.59' RT.	1041.86
22	196+01.9	R.R. SPIKE IN 33" MAPLE	31.8' LT.	1020.70
23	206+19.0	" " " 16" HICKORY	39' RT.	1028.26

204+57 BLUE KEEL AT BASE OF "OLD STYLE SIGN" DUCK INN 48' RT 1023.41



5.2

Catalog No. 2130-D142

STATE PROJECT NUMBER	SHEET NO
1442-01-73	5.3

BENCH MARKS			
NO.	STATION	DESCRIPTION	ELEVATION
20	176+92.5	CHISELED CROSS ON TOP OF CONC. FENCE POST 24' LT.	984.10
23	206+19	RR SPIKE IN 16" HICKORY 39' RT.	1026.26

SCALES
HORIZ. 1" = 100'
VERT. 1" = 10'

CURVE DATA
P.I. = 53+72.64
D = 55°37'37"
Δ = 90°10'50"
T = 103.32'
L = 162.12'
R = 103.00'
SE = N.C.
P.C. = 52+69.32
P.T. = 54+31.44

NOTE:
FOR INTERSECTION LAYOUT OF STH 23 AND OELKE DRIVE SEE 20 SCALE DETAIL SHEETS.

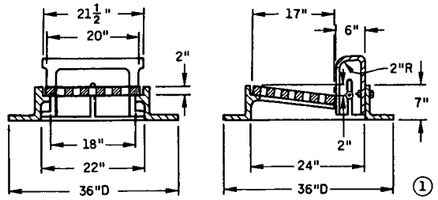
NOTE:
FOR INTERSECTION LAYOUT OF STH 23 AND CTH "UU" SEE 20 SCALE DETAIL SHEETS.

NOTE:
ALL UTILITY LINE LOCATIONS AND ELEVATIONS SHOWN ARE APPROXIMATE AND ARE TO BE FIELD VERIFIED BEFORE DIGGING, BORING, OR GRADING.

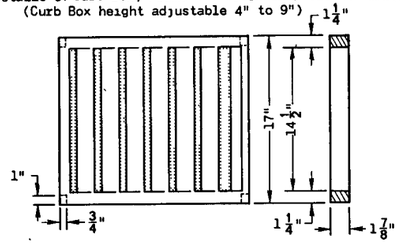
ELEVATION FINISHED GRADES ON ℄ SIDE ROADS

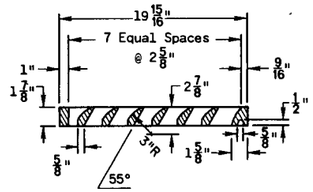
987.53 986.46 985.24 984.02 983.31 983.20 983.67 984.61 | 1025.78 1025.15 1023.96 1023.34 1022.95 1022.79 1022.86

Catalog No. 2130-D142



Details of Curb Box, Frame and Diagonally Slotted Grate
(Curb Box height adjustable 4" to 9")

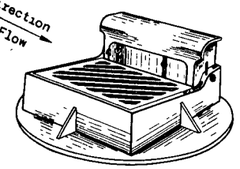




SPECIAL GRATE NO. 1 FOR TYPE "A" COVER

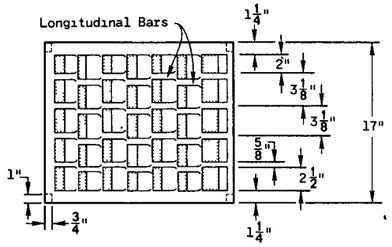
(Approximate Weight 70 lbs)

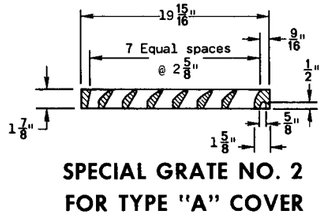
1" Diagonal Bars
with 1½" Openings



TYPE "A"

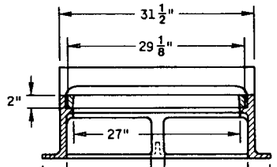
(Approximate Weight 405 lbs.)
Frame Weight 250 lbs.
Grate Weight 85 lbs.
Box Weight 70 lbs.

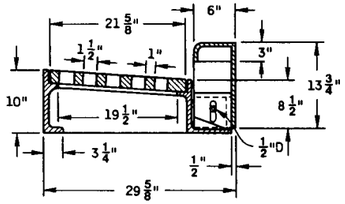




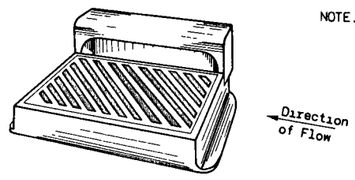
SPECIAL GRATE NO. 2 FOR TYPE "A" COVER

(Approximate Weight 84 lbs.)





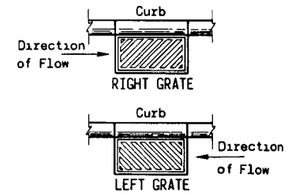
NOTE. Curb Box height adjustable 6" to 9"



TYPE "WM"

(Approximate Weight 670 lbs.)
Frame Weight 350 lbs.
Grate Weight 185 lbs.
Box Weight 135 lbs.

Diagonal Slots shall be oriented to the direction of flow. RIGHT and LEFT grates or grates that are manufactured to be reversible and can be used as either RIGHT or LEFT grates shall be furnished depending on direction of flow (See sketch below)



GENERAL NOTES

Details of construction, materials and workmanship not shown on this drawing shall conform to the pertinent requirements of the Standard Specifications and the applicable Special Provisions

Detail drawings for proposed alternate designs for Catch Basin, Manhole and Inlet Covers shall be submitted to the Engineer for approval providing that such alternate designs make provision for equivalent capacity and strength.

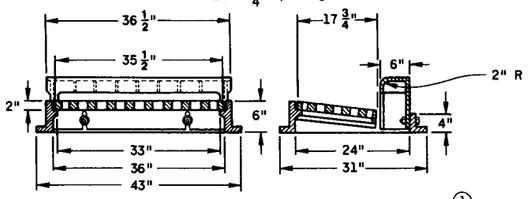
All Catch Basin, Manhole and Inlet Covers which are placed in vehicular traffic areas shall be "Non-Rocking" type

Adjustment of the cover to grade may be accomplished by the use of mortar and brick, or by precast concrete grade rings. Precast concrete grade rings shall conform to the specifications for Precast Reinforced Concrete Manhole Sections, AASHTO Designation M199, except that when such units are wet cast, they shall be made with air-entraining portland cement. Maximum adjustment shall be 8 inches.

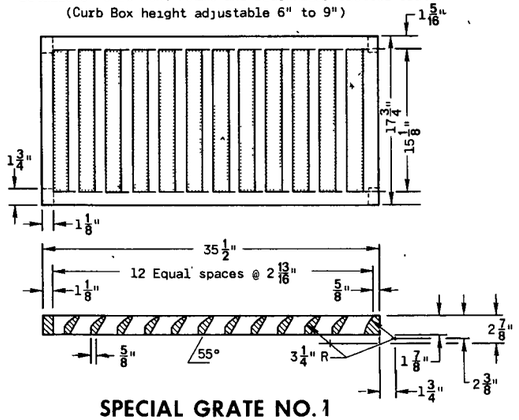
The actual weight of covers may vary within 5 percent, plus or minus, of the approximate weight.

① TYPES "A" AND "H" COVERS SHALL BE FURNISHED WITH DIAGONALLY SLOTTED GRATES UNLESS OTHERWISE SPECIFIED IN THE CONTRACT

1⅜" Diagonal Bars
with 1¼" Openings



Details of Curb Box, Frame and Diagonally Slotted Grate ①
(Curb Box height adjustable 6" to 9")



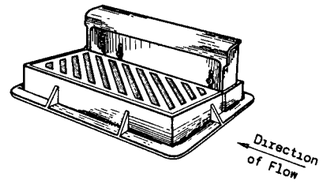
SPECIAL GRATE NO. 1 FOR TYPE "H" COVER

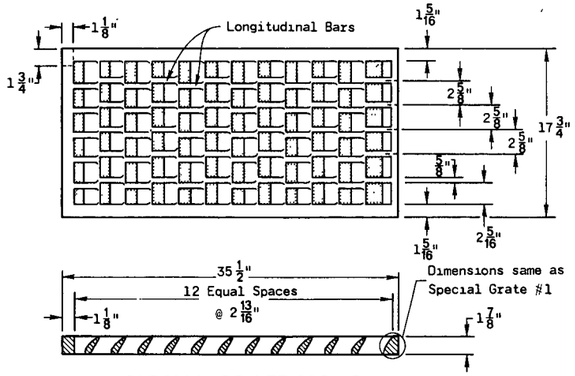
(Approximate Weight 140 lbs.)

MOUNTABLE CURB BOX FOR TYPES "A" & "H" COVERS

TYPE "H"

(Approximate Weight 510 lbs.)
Frame Weight 220 lbs.
Grate Weight 175 lbs.
Box Weight 115 lbs.

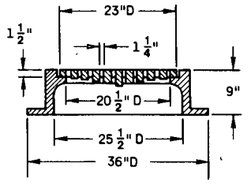


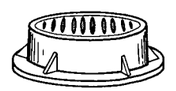


SPECIAL GRATE NO. 2 FOR TYPE "H" COVER

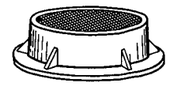
(Approximate Weight 165 lbs.)

CAUTION DO NOT USE GRATES WITH LONGITUDINAL SLOTS WHERE BICYCLE TRAFFIC IS PERMITTED.





TYPE "C"
Slotted Grate



TYPE "J"
Solid Cover

TYPE "C" - TYPE "J"

Frame Weight 250 lbs.
Slotted Grate Weight 125 lbs.
Solid Cover Weight 150 lbs.

STDDETAIL

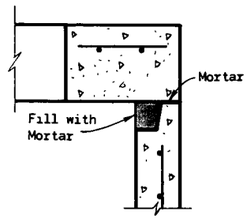
CATCH BASIN
MANHOLE AND
INLET COVERS

State of Wisconsin
Department of Transportation
Division of Highways

APPROVED 11-23-77 DATE — SUPERVISING DEVELOPMENT ENGINEER
APPROVED 11-25-77 DATE — CHIEF OF FACILITIES DEVELOPMENT
FHWA

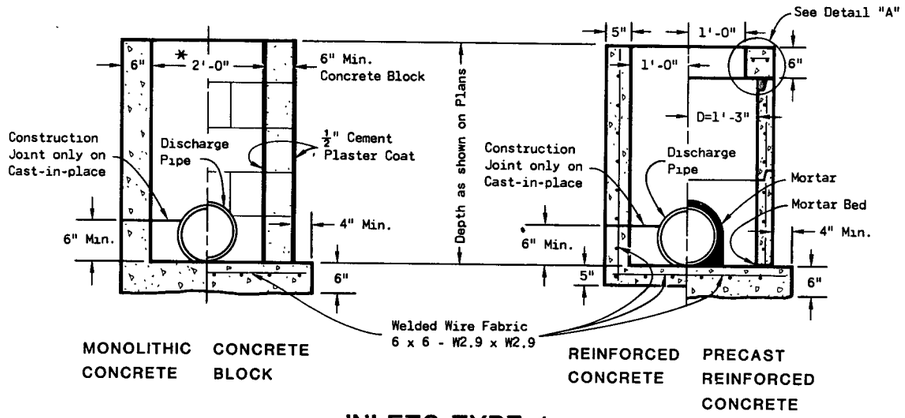
S.D.D. 8 A5-3a

S.D.D 8 A5-3a



DETAIL "A"

*Selection of square or circular design will be based on the pipe sizes and the Inlet Cover being utilized.



MONOLITHIC CONCRETE CONCRETE BLOCK

REINFORCED CONCRETE PRECAST REINFORCED CONCRETE

INLETS TYPE 1

GENERAL NOTES

Details of construction, materials and workmanship not shown on this drawing shall conform to the pertinent requirements of the Standard Specifications and the applicable Special Provisions.

Detailed drawings for proposed alternate designs for underground drainage structures shall be submitted to the Engineer for approval providing that such alternate designs make provision for equivalent capacity and strength.

All Precast Inlet units shall conform to the pertinent requirements of AASHTO Designation M 199.

All drainage structures are designated on the plans as "Manholes 1-C", "Catch Basins 1-B", "Inlets 3-H", etc. The first digit designates the masonry portion of the structure, and the following letter designates the type of cover to be used to comprise the complete unit.

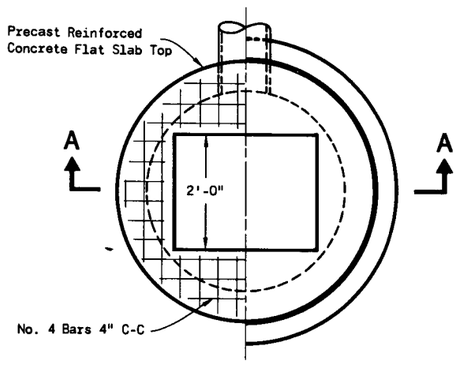
Precast Reinforced Bases shall be placed on a bed of material at least 6 inches in depth, which meets the requirements for Granular Backfill. This bedding shall be compacted and provide uniform support for the entire area of the base.

Precast Reinforced Concrete Flat Slab Tops may be used on the structures. The Tops shall be installed on a bed of mortar.

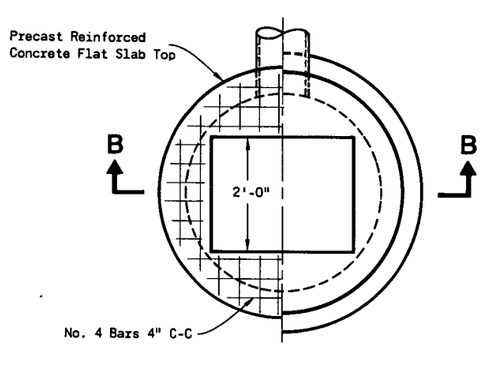
All Bar Steel reinforcement shall be embedded 2 inches clear unless otherwise shown or noted.

Precast Reinforced Concrete Risers shall be placed with tongue down.

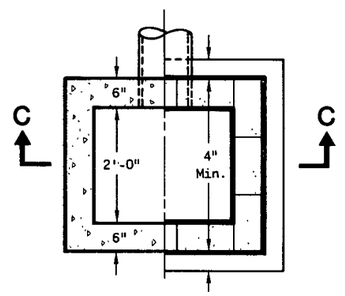
(1) Use 2'-6" opening for Type 2 Inlets and 3'-0" opening for Type 3 Inlets.



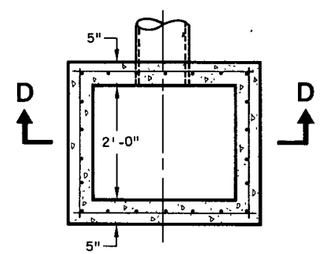
PLAN VIEW



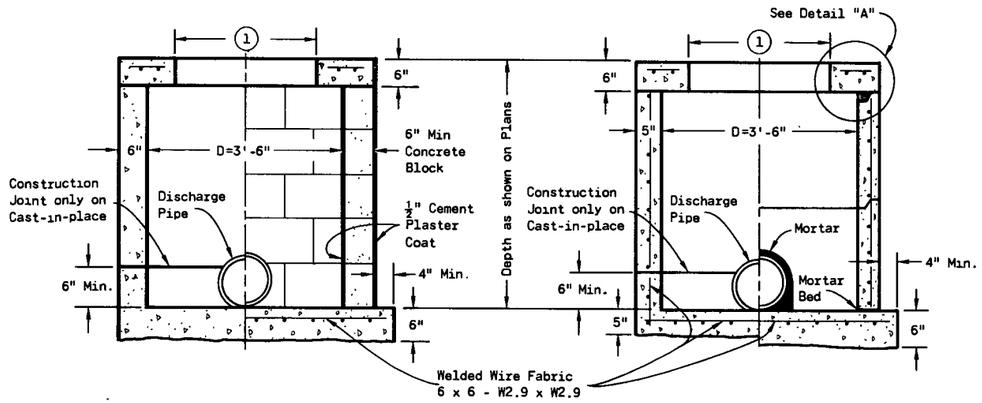
PLAN VIEW



PLAN VIEW



PLAN VIEW

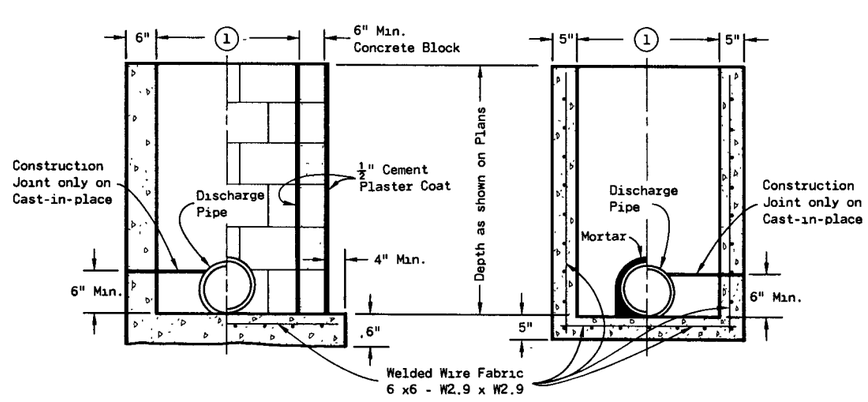


MONOLITHIC CONCRETE CONCRETE BLOCK

REINFORCED CONCRETE PRECAST REINFORCED CONCRETE

SECTION A–A

SECTION B–B



MONOLITHIC CONCRETE CONCRETE BLOCK

PRECAST REINFORCED CONCRETE REINFORCED CONCRETE

SECTION C–C

SECTION D–D

INLETS TYPE 2 & 3

INLETS TYPE 1, 2 & 3

State of Wisconsin
Department of Transportation

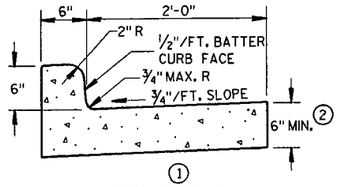
APPROVED 4-13-82 DATE

CHIEF DESIGN ENGINEER

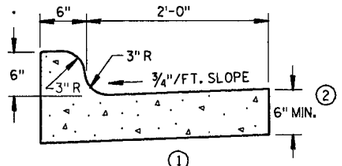
FHWA

S.D.D. 8 C 1-4

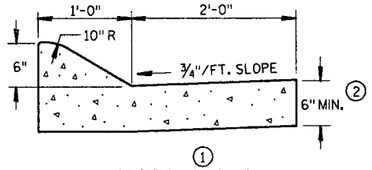
S.D.D. 8 C 1-4



1
TYPES A & D

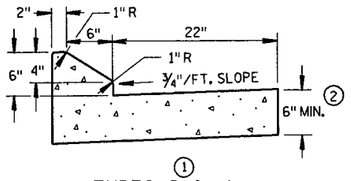


1
TYPES K & L

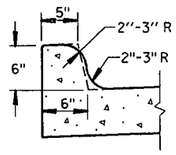


1
TYPES A & D

CONCRETE CURB & GUTTER 36"

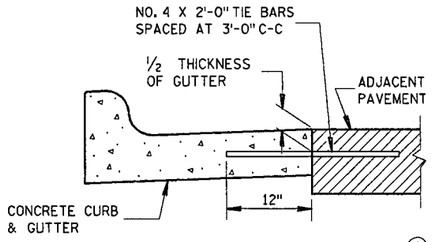


1
TYPES G & J



OPTIONAL CURB SHAPE
FOR TYPES K & L 1

CONCRETE CURB & GUTTER 30"



TYPICAL TIE BAR LOCATION 1

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

SEALANT IS NOT REQUIRED IN THE JOINTS OF CONCRETE CURB OR CONCRETE CURB & GUTTER EXCEPT AS REQUIRED FOR INTEGRAL GUTTER.

PAVEMENT TIES ARE REQUIRED, WHEN INCLUDED IN THE CONTRACT, WHERE CONCRETE CURB, CONCRETE CURB AND GUTTER OR CONCRETE PAVEMENT IS PLACED ADJACENT TO EXISTING CONCRETE.

PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.4 OF THE STANDARD SPECIFICATIONS.

INTEGRAL CURB & GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB & GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE. TIE BARS AND A LONGITUDINAL CONSTRUCTION JOINT ARE NOT REQUIRED WITH THIS ALTERNATE.

PAVEMENT JOINTS SHALL BE EXTENDED THROUGH INTEGRAL CURB & GUTTER. JOINTS IN INTEGRAL GUTTER SHALL HAVE THE SAME DIMENSIONS AS THE JOINTS IN THE ADJACENT PAVEMENT. JOINTS IN INTEGRAL CURB SHALL BE 1/8" WIDE.

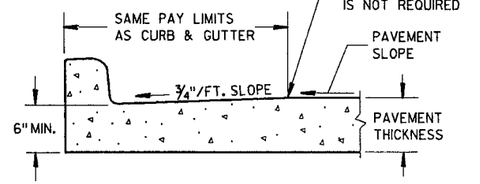
JOINTS IN INTEGRAL CURB & GUTTER SHALL BE SEALED TO THE FACE OF CURB WITH THE SAME SEALANT SPECIFIED FOR THE PAVEMENT JOINT. THE COST OF FURNISHING AND INSTALLING THIS SEALANT SHALL BE INCIDENTAL TO THE ITEM CONCRETE CURB & GUTTER.

UNLESS OTHERWISE SHOWN ON THE TYPICAL CROSS SECTIONS, THE BASE COURSE AND UNCLASSIFIED EXCAVATION LIMITS ARE TWO FEET BEHIND THE BACK OF CURBS.

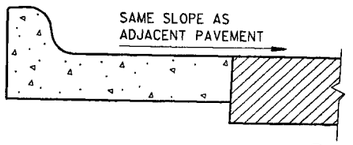
(1) TIE BARS ARE REQUIRED FOR CURB AND GUTTER TYPES A, G AND K.

(2) THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE COURSE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.

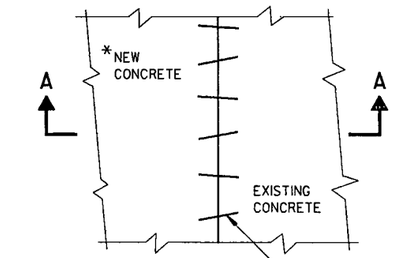
(3) WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATIONS WILL BE SHOWN ELSEWHERE IN THE PLAN.



PARTIAL SECTION OF PAVEMENT
WITH INTEGRAL CURB & GUTTER

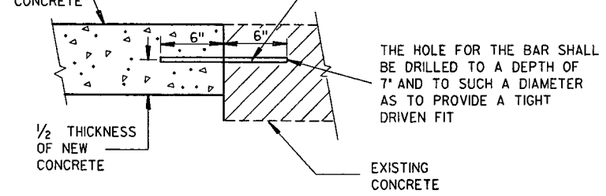


REVERSE SLOPE GUTTER 3
(TYPICAL FOR ALL CURB & GUTTER TYPES)

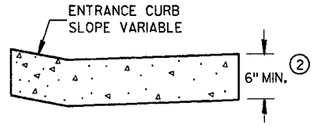


PLAN VIEW

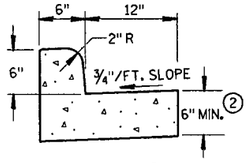
*NEW CURB & GUTTER, SURFACE DRAINS, CONCRETE PAVEMENT OR OTHER NEW CONCRETE.



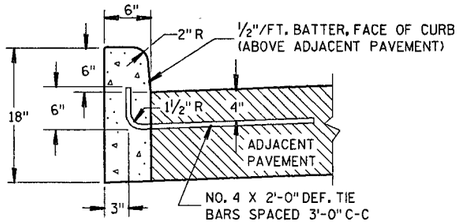
SECTION A-A
PAVEMENT TIES



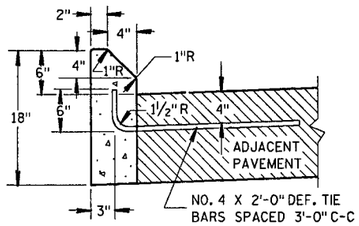
DRIVEWAY ENTRANCE CURB
(WHEN DIRECTED BY THE ENGINEER)



1
TYPES A & D
CONCRETE CURB & GUTTER 18"



1
TYPES A & D



1
TYPES G & J

CONCRETE CURB

CONCRETE CURB, CONCRETE CURB & GUTTER AND PAVEMENT TIES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

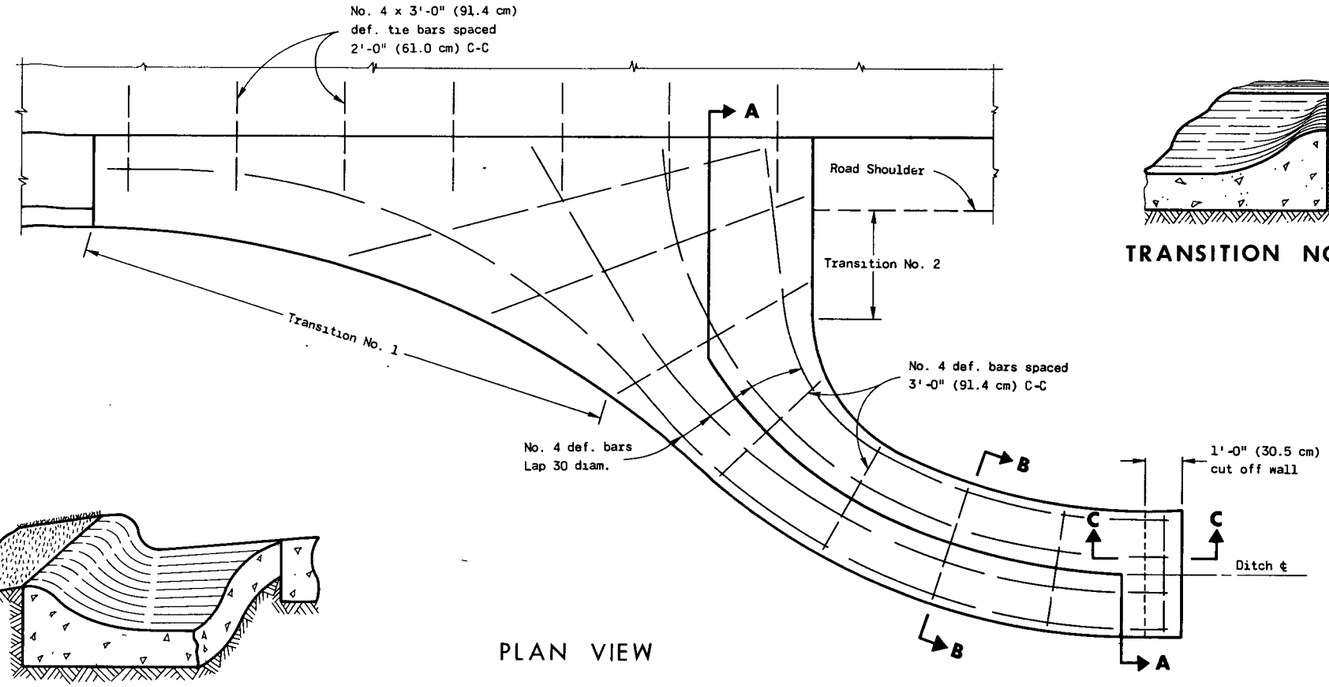
APPROVED
10-23-86
DATE

STATE DESIGN ENGINEER FOR HWYS

FHWA

S.D.D. 8 D 1-11

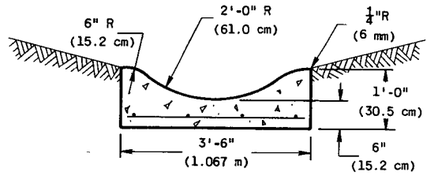
S.D.D. 8 D 1-11



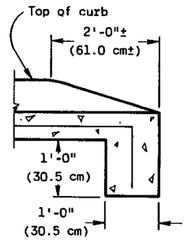
PLAN VIEW

TRANSITION NO. 1

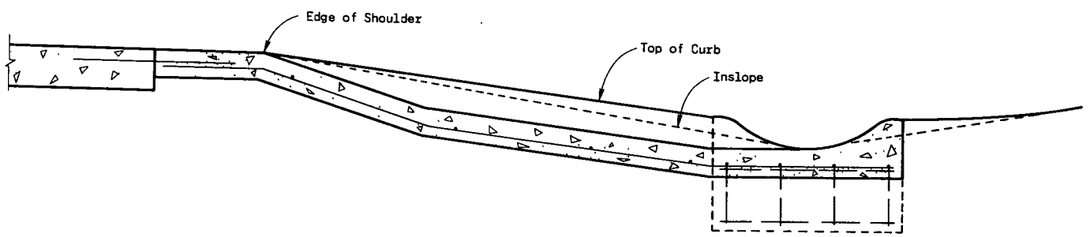
TRANSITION NO. 2



SECTION B-B



SECTION C-C



SECTION A-A

GENERAL NOTES

Details of constuction, materials and workmanship not shown on this drawing shall conform to the pertinent requirements of the Standard Specifications and the applicable Special Provisions.

Typical design only; exact design and flume length may be modified by the Engineer to meet field conditions.

METHOD OF DIMENSIONING

1'-0" (30.5 cm)

1'-0" (30.5 cm)

BASIS: 1 In. = EXACTLY 25.4 mm

CONCRETE SURFACE DRAIN

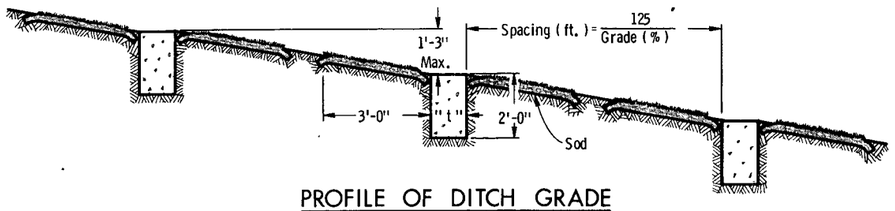
State of Wisconsin
Department of Transportation
Division of Highways

RECOMMENDED FOR APPROVAL
1-1-14 DATE — CHIEF of FACILITIES DEVELOPMENT

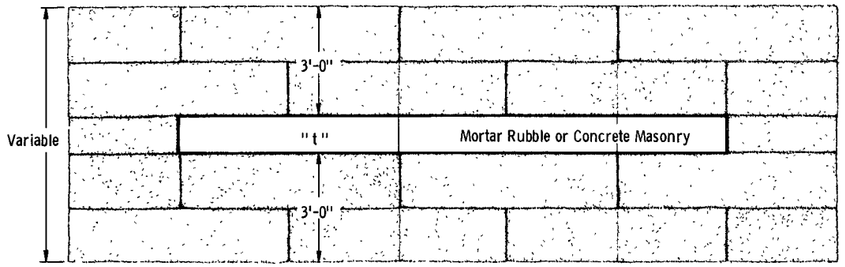
APPROVED
1-15-74 DATE — STATE HIGHWAY ENGINEER

S.D.D. 8D4-1

S.D.D. 8D4-1

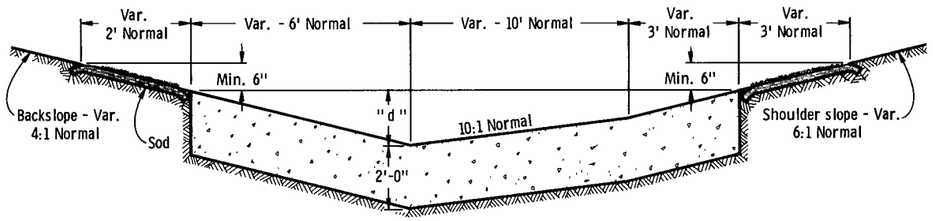


PROFILE OF DITCH GRADE

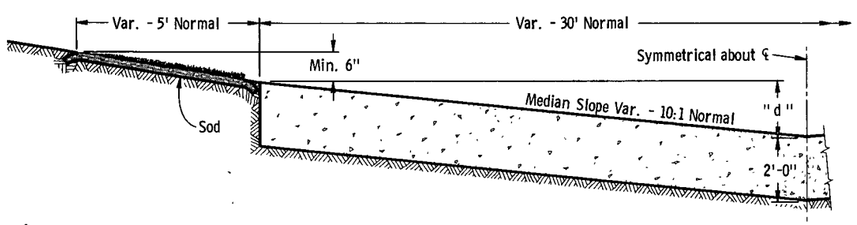


PLAN VIEW SHOWING MASONRY AND SOD

" t " - Masonry thickness shall be 0'-9" for concrete and 1'-0" for mortar rubble.



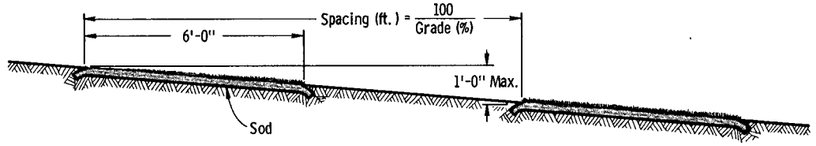
SIDE DITCH CROSS SECTION



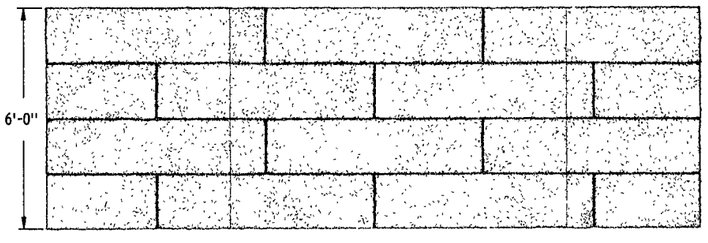
MEDIAN DITCH CROSS SECTION

" d " - The minimum depth of the masonry portion of the ditch checks shall be equal to the maximum depth of flow. The normal " d " will be 1'-6".

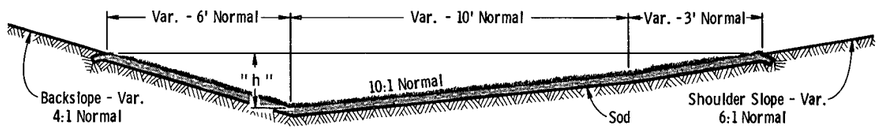
MASONRY AND SOD DITCH CHECKS



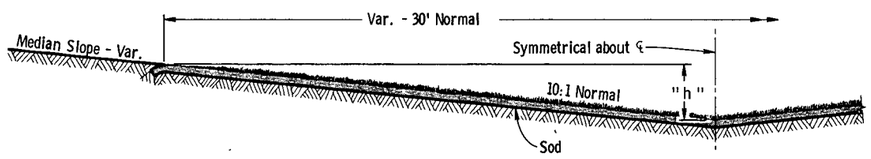
PROFILE OF DITCH GRADE



PLAN VIEW SHOWING SOD



SIDE DITCH CROSS SECTION



MEDIAN DITCH CROSS SECTION

" h " - The minimum height of ditch to be sodded shall be equal to the maximum depth of flow plus 6". The normal " h " will be 1'-6".

SOD DITCH CHECKS

GENERAL NOTES

Details of construction, materials and workmanship not shown on this drawing shall conform to the pertinent requirements of the Standard Specifications and the applicable Special Provisions.

Alternate designs for ditch checks, of the material or combination of materials shown hereon, may be used upon written permission of the Engineer.

Sod strips for ditch checks may be placed either transversely or longitudinally to the direction of water flow.

SOD OR MASONRY AND SOD DITCH CHECKS

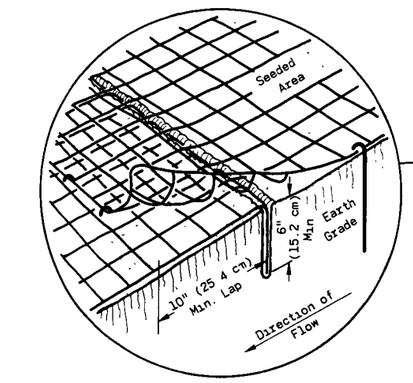
State of Wisconsin
Department of Transportation
Division of Highways

RECOMMENDED FOR APPROVAL
9/7/71 DATE — ACTING CHIEF DESIGN ENGINEER

APPROVED
9/7/71 DATE — STATE HIGHWAY ENGINEER

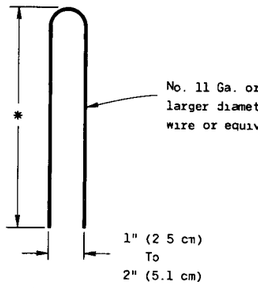
S.D.D. 8E4-2

S.D.D. 8E4-2



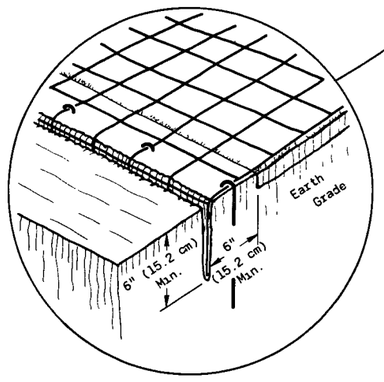
JUNCTION SLOT
(SEED ONLY)

JUNCTION SLOT
(SOD ONLY)

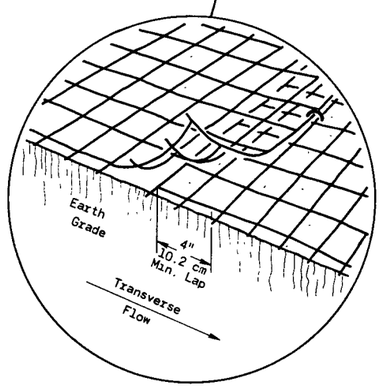


DETAIL OF TYPICAL STAPLE

*6" (15.2 cm) Min. for firm soils
12" (30.5 cm) Min. for loose soils
8" (20.3 cm) Min. where both sod and mats are being used.



ANCHOR SLOT
AT BEGINNING AND END OF EROSION MAT
(SEED AND SOD)



LAP JOINT
(SEED AND SOD)

GENERAL NOTES

Details of construction, materials and workmanship not shown on this drawing shall conform to the pertinent requirements of the Standard Specifications and the applicable Special Provisions.

Variations in the dimensions or materials shown hereon shall be permitted if they provide equivalent protection and material strength and if prior approval of the Engineer is obtained.

Lap Joints shall not be placed in the bottom of V-shaped ditches

Junction Slots on adjacent strips of Matting shall be staggered a minimum of 4 feet (1.219 m) apart.

Edges of the Erosion Mat shall be impressed in the soil

Erosion Mat shall be measured and payed for in accordance with the Standard Specifications

EROSION MAT OVER SOD

a. Only Jute Fabric will be permitted over sod

b Wood Stakes for Sod may be omitted by the Engineer if the existing slope and soil conditions so warrant.

c The width of Erosion Mat shall always equal the Sod width

d Sod strips may be placed either longitudinally or transversely to the flow line of the Ditch.

EROSION MAT OVER SEEDING

Junction or Anchor Slots shall be at minimum intervals of 100 feet (30 48 m) on grades up to and including 3 percent, and 50 feet (15 24 m) on grades exceeding 3 percent.

METHOD OF DIMENSIONING

1'-0" (30.5 cm)

1'-0" (30.5 cm)

BASIS: 1 In. = EXACTLY 25.4 mm

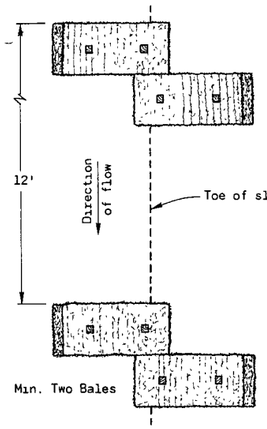
EROSION MAT

State of Wisconsin
Department of Transportation
Division of Highways

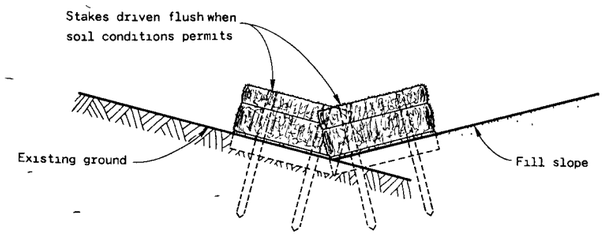
RECOMMENDED FOR APPROVAL
12-3-73 DATE — CHIEF of FACILITIES DEVELOPMENT

APPROVED
1-15-74 DATE — STATE HIGHWAY ENGINEER

S.D.D. 8E7-1

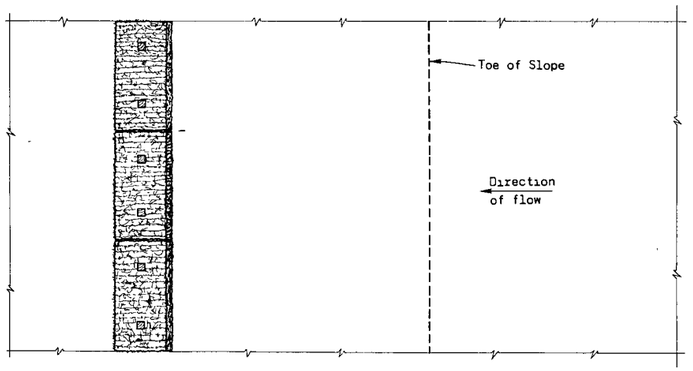


PLAN VIEW

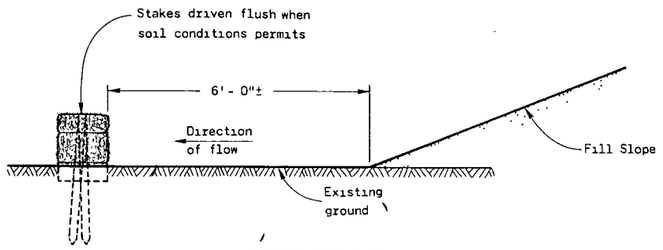


FRONT ELEVATION

WHEN EXISTING GROUND SLOPES TOWARD FILL SLOPE



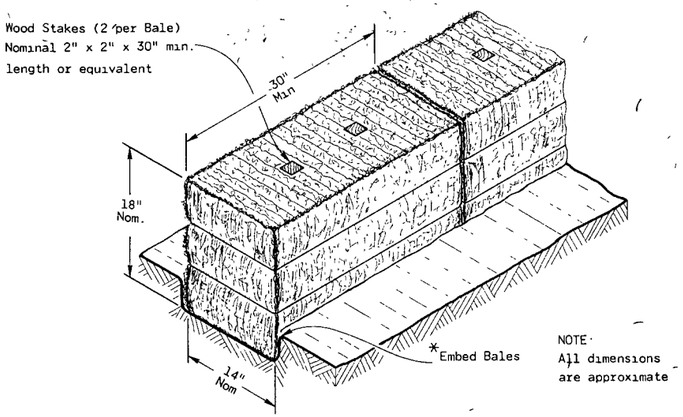
PLAN VIEW



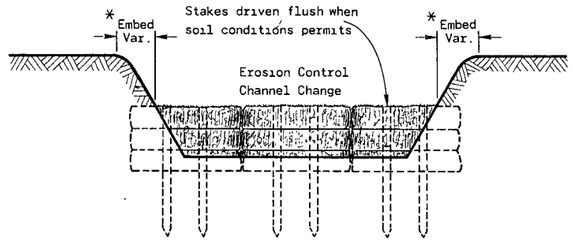
FRONT ELEVATION

EROSION BALES AT TOE OF SLOPE

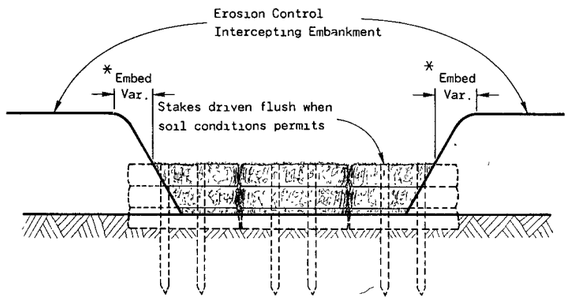
WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE



DETAIL OF EROSION BALE INSTALLATION

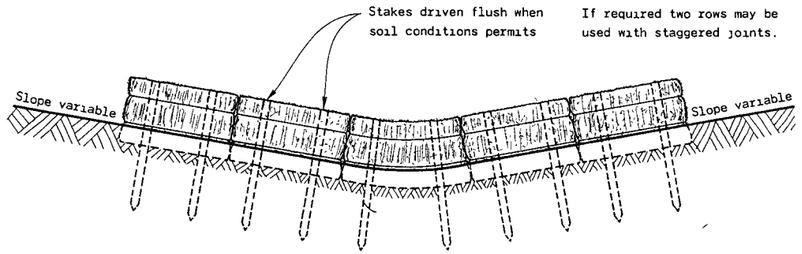


EROSION CONTROL CHANNEL CHANGE



EROSION CONTROL INTERCEPTING EMBANKMENT

PLAN VIEW



FRONT ELEVATION

EROSION BALES ACROSS DITCH BOTTOM

GENERAL NOTES

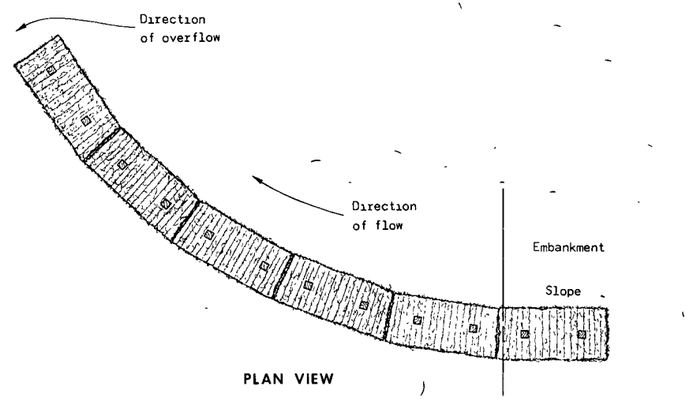
Details of construction, materials and workmanship not shown on this drawing shall conform to the pertinent requirements of the Standard Specifications and the applicable Special Provisions.

Bales shall be placed end to end or overlapping at right angles to the direction of flow and far enough up the sides of the ditch to prevent eroding around ends

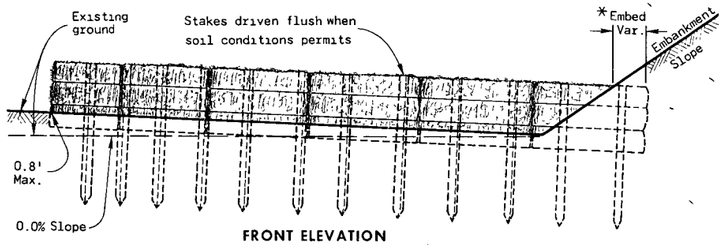
Bales shall be placed with twine or tie wires parallel to the ground.

Stakes to be battered in opposite directions.

* As determined by the Engineer.



PLAN VIEW



FRONT ELEVATION

EROSION BALES AT TOE OF SLOPE

TYPICAL INSTALLATIONS OF EROSION BALES

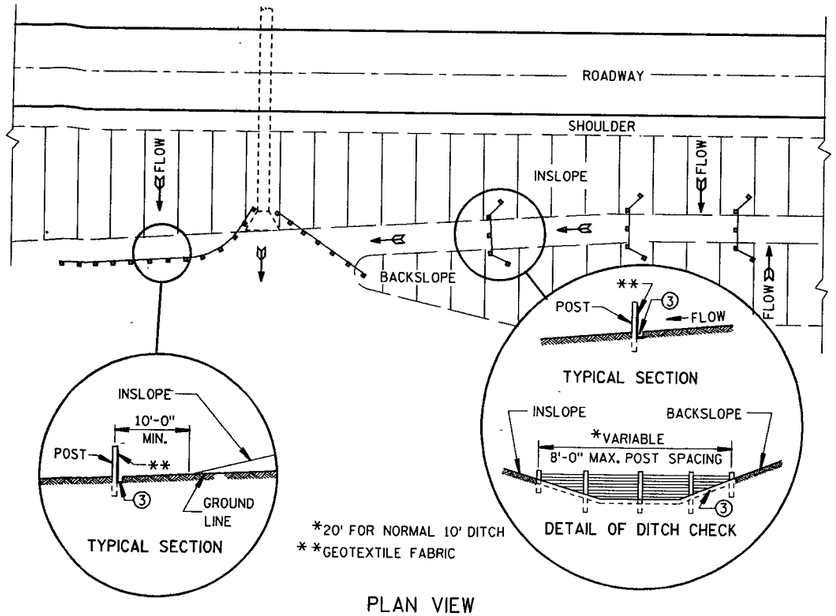
State of Wisconsin
Department of Transportation
Division of Highways

RECOMMENDED FOR APPROVAL
10/14/75 (DATE) — CHIEF OF FACILITIES DEVELOPMENT

APPROVED
10/16/75 (DATE) — STATE HIGHWAY ENGINEER

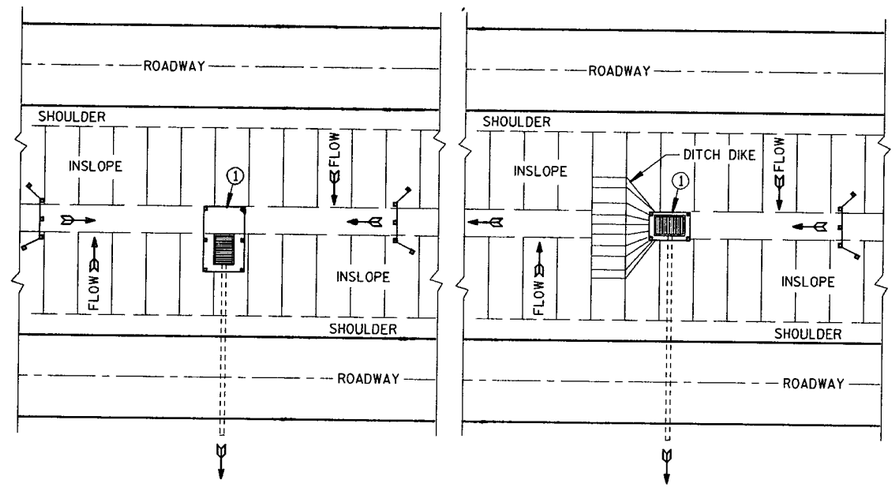
S.D.D. 8E8-1

S.D.D. 8E8-1



PLAN VIEW

TYPICAL APPLICATIONS OF SILT FENCE



PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

GENERAL NOTES

DETAIL OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

WHEN POSSIBLE THE SILT FENCE SHOULD BE CONSTRUCTED IN AN ARC OR HORSESHOE SHAPE, WITH THE ENDS POINTING UPSLOPE TO MAXIMIZE BOTH STRENGTH AND EFFECTIVENESS.

① CROSS BRACE WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS AS DIRECTED BY THE ENGINEER.

② MINIMUM 14 GAGE WIRE REQUIRED, FOLD FABRIC 3" OVER THE WIRE AND STAPLE OR PLACE WIRE RINGS ON 12" C-C.

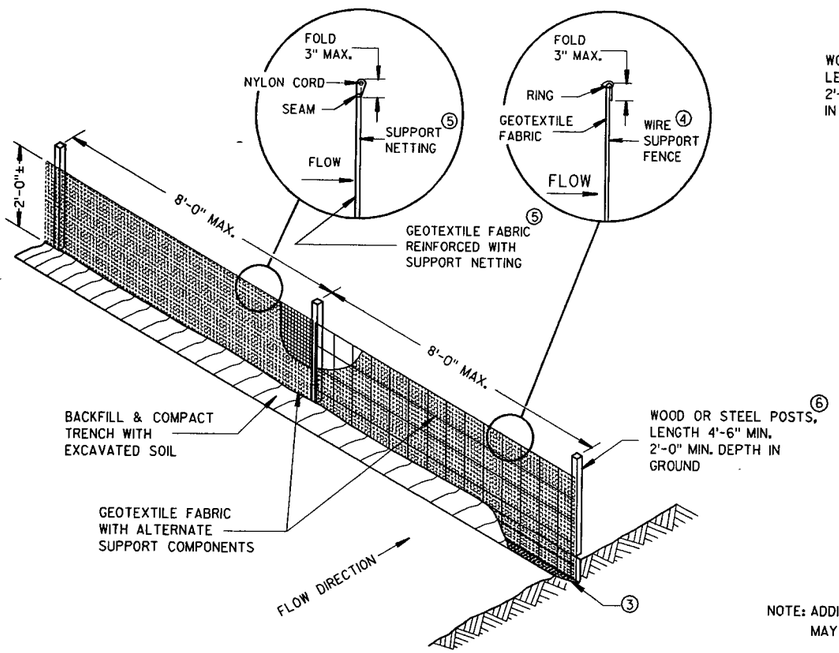
③ EXCAVATE A TRENCH A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.

④ WIRE SUPPORT FENCE SHALL BE 14 GAGE MINIMUM WOVEN WIRE WITH A MAXIMUM MESH SPACING OF 6". SECURE TOP OF GEOTEXTILE FABRIC TO TOP OF FENCE WITH STAPLES OR WIRE RINGS AT 12" C-C.

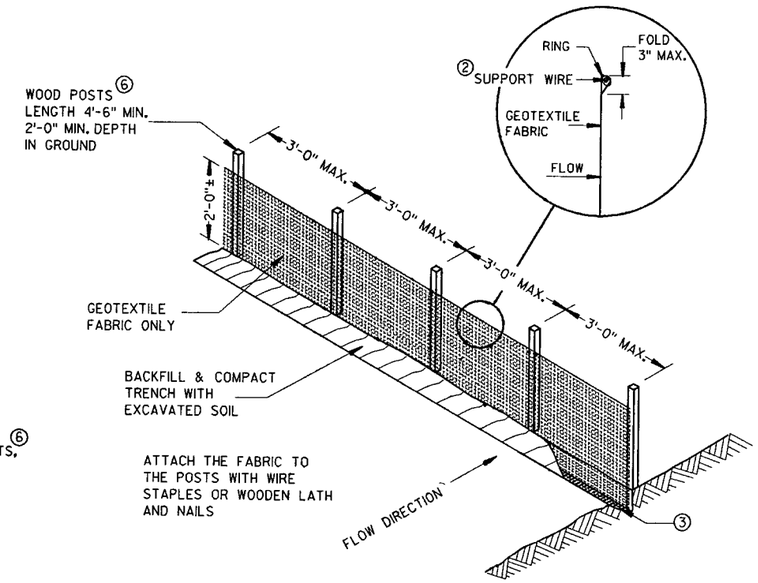
⑤ GEOTEXTILE FABRIC SHALL BE REINFORCED WITH AN INDUSTRIAL POLYPROPYLENE NETTING WITH A MAXIMUM MESH SPACING OF 3/4" OR EQUAL. A HEAVY DUTY NYLON TOP SUPPORT CORD OR EQUIVALENT IS REQUIRED.

⑥ STEEL POSTS SHALL BE STUDDED "TEE" OR "U" TYPE WITH A MINIMUM WEIGHT OF 1.28 LBS/LINEAL FOOT (WITHOUT ANCHOR). FIN ANCHORS SUFFICIENT TO RESIST POST MOVEMENT ARE REQUIRED. WOOD POSTS SHALL BE A MINIMUM SIZE OF 4" DIA. OR 1½" X 3½" EXCEPT WOOD POSTS FOR GEOTEXTILE FABRIC REINFORCED WITH NETTING SHALL BE A MINIMUM SIZE OF 1⅛" X 1⅛" OAK OR HICKORY.

ALTERNATES A & B ARE EQUAL AND EITHER MAY BE USED.

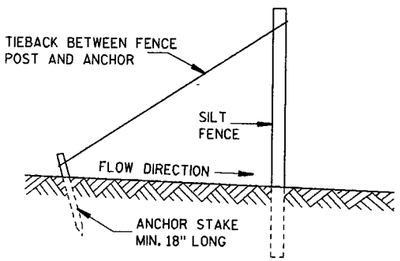


ALTERNATE "A"



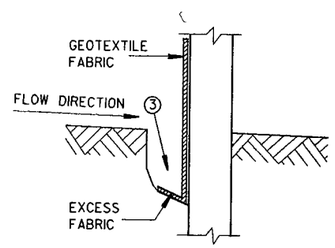
ALTERNATE "B"

NOTE: ADDITIONAL POST DEPTH OR TIE BACKS MAY BE REQUIRED IN UNSTABLE SOILS



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)



TRENCH DETAIL

SILT FENCE

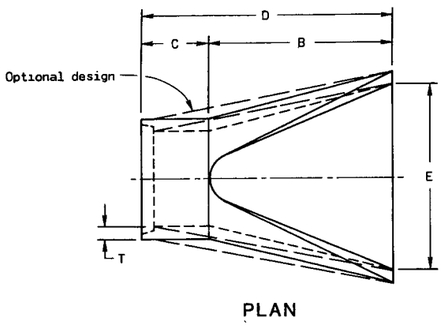
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
10-2-85
DATE
STATE DESIGN ENGINEER FOR HWYS

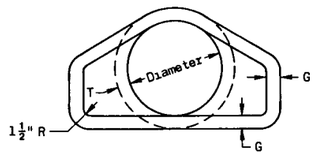
FHWA

S.D.D. 8 E 9-2

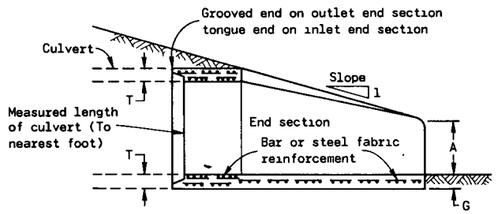
S.D.D. 8 E 9-2



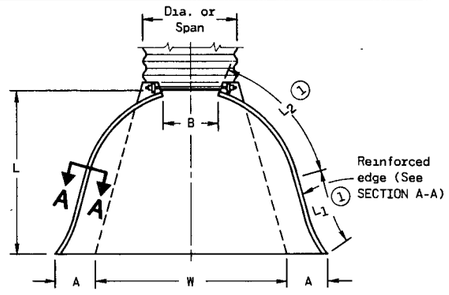
PLAN



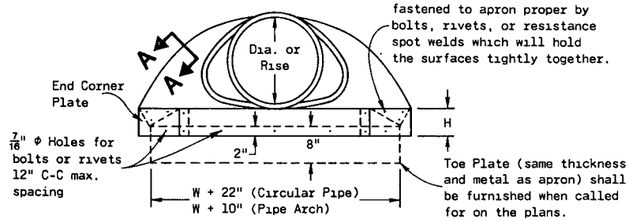
END VIEW



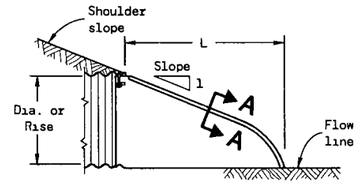
LONGITUDINAL SECTION



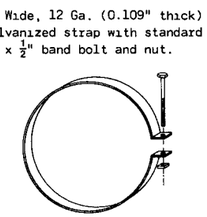
PLAN



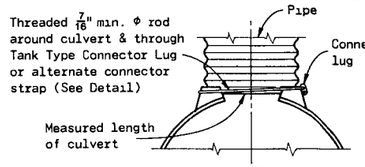
END VIEW



SIDE ELEVATION

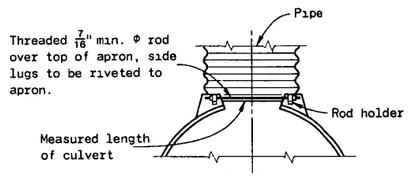


Alternate for Type 1 Connection
END SECTION CONNECTOR STRAP



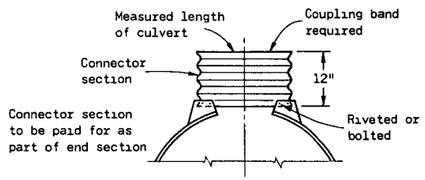
TYPE 1

For 12" thru 24" only (Circular pipe)



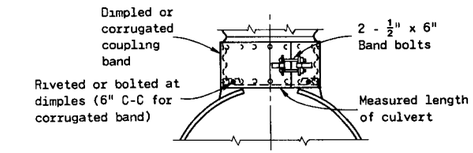
TYPE 2

For 30" & 36" only (Circular pipe)
For 17"x13" thru 57"x38" only (Pipe arch)



TYPE 3

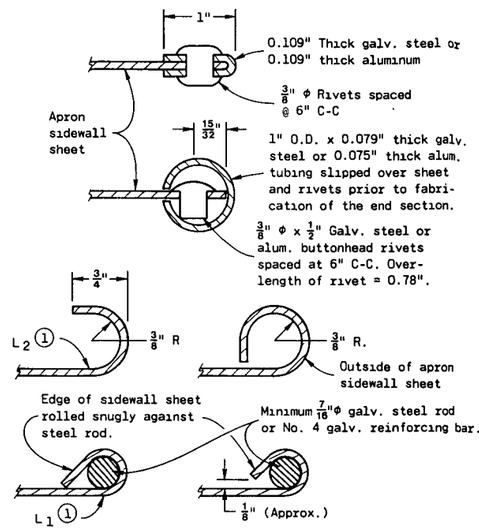
For 42" thru 84" only (Circular pipe)
For 64"x43" & 71"x47" (Pipe arch)



TYPE 5

Alternate for:
All sizes corrugated circular pipe & pipe arches

NOTE: Dimpled band fits over outside of endwall, and corrugated band fits inside endwall. Dimpled band may be used with helically corrugated pipe.



SECTION A-A

GENERAL NOTES

Details of construction, materials and workmanship not shown on this drawing shall conform to the pertinent requirements of the Standard Specifications and the applicable Special Provisions.

Variations of the dimensions and designs shown hereon will be permitted providing equivalent capacity and structural integrity are attained, and prior approval of the Engineer is obtained.

Concrete culvert endwalls may not be used with galvanized steel or aluminum culvert pipe or vice versa.

Galvanized steel or aluminum endwalls shall normally be installed on culvert pipe of the same metal. The use of galvanized steel endwalls on aluminum pipes is permitted, provided the two metals at the joint interface are kept separated by a suitable insulating material approximately 1/16" thick or greater. Such material would be an asphalt impregnated fabric, a sheet plastic, a rubber gasket or other non-degradable material of substantial strength.

When two or more pipe arches with apron endwalls are to be laid adjacent to each other, they shall be separated by the following amount:

PIPES: Total width of apron endwall less the diameter of pipe plus 6 inches.

PIPE ARCHES. Total width of apron endwall less the span dimension of the pipe arch plus 6 inches.

(1) A combination of steel rod rolled into edge sidewall (L_1), and 180° roll on edge of sidewall (L_2), is permitted for metal apron endwalls up to 60" diameter for circular pipe, and 77" x 52" for pipe arches.

CONNECTION DETAILS

CIRCULAR PIPE

For circumferentially corrugated pipe use Endwall Connection Details 1, 2, 3 or 5 as applicable.

For helically corrugated pipe use Endwall Connection Details 1, 2 or 5.

For helically corrugated pipes with two circumferential corrugations at each end use Endwall Connection Details 1, 2 or 3.

PIPE ARCH

Use Endwall Connection Details 2, 3 or 5 as applicable.

PIPE DIA. (in.)	APPROX. WEIGHT PER SECTION	DIMENSIONS (Inches) T	A	B	C	D	E	G	APPROX. SLOPE
12	530	2	4	24	$48\frac{7}{8}$	$72\frac{7}{8}$	24	2	3 to 1
15	740	$2\frac{1}{4}$	6	27	46	73	30	$2\frac{1}{4}$	↑
18	990	$2\frac{1}{2}$	9	27	46	73	36	$2\frac{1}{2}$	↑
21	1,280	$2\frac{3}{4}$	9	36	$37\frac{1}{2}$	$73\frac{1}{2}$	42	$2\frac{3}{4}$	↑
24	1,520	3	$9\frac{1}{2}$	$43\frac{1}{2}$	30	$73\frac{1}{2}$	48	3	↑
27	1,930	$3\frac{1}{4}$	$10\frac{1}{2}$	$49\frac{1}{2}$	24	$73\frac{1}{2}$	54	$3\frac{1}{4}$	↑
30	2,190	$3\frac{1}{2}$	12	54	$19\frac{3}{4}$	$73\frac{3}{4}$	60	$3\frac{1}{2}$	↑
36	4,100	4	15	63	$34\frac{3}{4}$	$97\frac{3}{4}$	72	4	↑
42	5,380	$4\frac{1}{2}$	21	63	35	98	78	$4\frac{1}{2}$	↓
48	6,550	5	24	72	26	98	84	5	3 to 1
54	8,040	$5\frac{1}{2}$	27	65	* $33\frac{1}{4}$ - 35 **	* $98\frac{1}{4}$ - 100 **	90	5	$2\frac{2}{5}$ to 1
60	8,730	6	* 30 - 35 **	60	39	99	96	5	2 to 1
66	10,630	$6\frac{1}{2}$	* 24 - 30 **	* 72 - 78 **	* 21 - 27 **	↑	102	$5\frac{1}{2}$	↑
72	12,520	7	* 24 - 36 **	78	21	↓	108	6	↑
78	14,430	$7\frac{1}{2}$	* 24 - 36 **	78	21	99	114	$6\frac{1}{2}$	2 to 1
84	18,160	8	36	$90\frac{1}{2}$	21	$111\frac{1}{2}$	120	$6\frac{1}{2}$	$1\frac{1}{2}$ to 1

* Minimum ** Maximum

REINFORCED CONCRETE APRON ENDWALLS

PIPE DIA. (in.)	MIN. THICKNESS (Inches) STEEL	ALUM.	DIMENSIONS (Inches) A ±1"	B MAX.	H ±1"	L ±1½"	L_1 (1)	L_2 (1)	W ±2"	APPROX. SLOPE
12	0.064	0.060	6	6	6	21	12	$17\frac{1}{2}$	24	$2\frac{1}{2}$ to 1
15	↓	↓	7	8	↑	26	14	$21\frac{3}{4}$	30	↑
18	↓	↓	8	10	↓	31	15	$28\frac{1}{2}$	36	↑
21	↓	0.060	9	12	↓	36	18	$29\frac{5}{8}$	42	↑
24	0.064	0.075	10	13	6	41	18	$37\frac{1}{4}$	48	↑
30	0.079	0.075	12	16	8	51	18	$52\frac{1}{4}$	60	↑
36	0.079	0.105	14	19	9	60	24	$59\frac{3}{4}$	72	↓
42	0.109	0.105	16	22	11	69	24	$76\frac{5}{8}$	84	$2\frac{1}{2}$ to 1
48	↑	0.135	18	27	12	78	24	81	90	$2\frac{1}{4}$ to 1
54	↑	0.135	↑	30	↑	84	30	$85\frac{1}{2}$	102	2 to 1
60	↑	0.164	↑	33	↑	87	–	–	114	$1\frac{3}{4}$ to 1
66	↑	↑	↑	36	↑	87	–	–	120	$1\frac{1}{2}$ to 1
72	↑	↑	↑	39	↑	87	–	–	126	$1\frac{3}{4}$ to 1
78	↓	↓	↓	42	↓	87	–	–	132	$1\frac{1}{4}$ to 1
84	0.109	0.164	18	45	12	87	–	–	138	$1\frac{1}{4}$ to 1

NOTE All splices to be lap riveted or bolted.

METAL APRON ENDWALLS
FOR CIRCULAR PIPE

PIPE-ARCH DIMENSIONS (Inches) SPAN	RISE	MIN. THICK. (Inches) STEEL	ALUM.	DIMENSIONS (Inches) A ±1"	B MAX.	H ±1"	L ±1½"	L_1 (1)	L_2 (1)	W ±2"	APPROX. SLOPE
17	13	0.064	0.060	7	9	6	19	14	16	30	$2\frac{1}{2}$ to 1
21	15	↓	0.060	7	10	↑	23	14	$19\frac{3}{8}$	36	↑
24	18	↓	0.060	8	12	↓	28	18	$21\frac{3}{4}$	42	↑
28	20	0.064	0 075	9	14	↓	32	18	$27\frac{1}{2}$	48	↑
35	24	0.079	0.075	10	16	6	39	18	$37\frac{5}{8}$	60	↑
42	29	0.079	0.105	12	18	8	46	24	$45\frac{3}{8}$	75	↑
49	33	0.109	0.105	13	21	9	53	↑	$54\frac{3}{4}$	85	↓
57	38	↑	0.135	18	26	12	63	↓	68	90	$2\frac{1}{2}$ to 1
64	43	↑	0.135	↑	30	↑	70	24	$72\frac{3}{4}$	102	$2\frac{1}{4}$ to 1
71	47	↑	0.164	↑	33	↑	77	30	$82\frac{1}{4}$	114	$2\frac{1}{4}$ to 1
77	52	↓	0.164	↓	36	↓	77	–	–	126	2 to 1
83	57	0.109	0.164	18	39	12	77	–	–	138	2 to 1

NOTE. All splices to be lap riveted or bolted.

METAL APRON ENDWALLS
FOR PIPE ARCHES

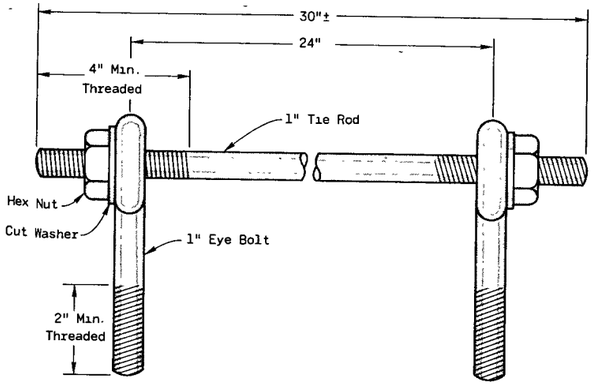
APRON ENDWALLS FOR
CULVERT PIPE AND PIPE ARCHES

State of Wisconsin
Department of Transportation

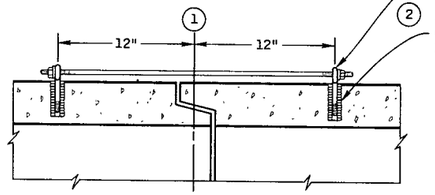
APPROVED 2-15-82 DATE
CHIEF DESIGN ENGINEER
FHWA

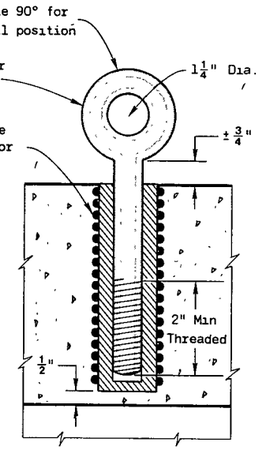
S.D.D. 8 F 1-9

S.D.D. 8 F 1-9



EYE BOLTS AND TIE ROD





(CAST-IN-PLACE THREADED INSERT)
LONGITUDINAL SECTIONS

GENERAL NOTES

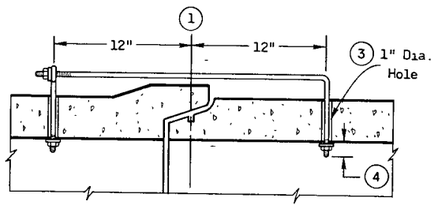
Concrete Culvert Pipe shall be tied together in the manner illustrated by this detail at locations designated on the plan. The contractor may use either Alternate 1, 2 or 3 for drainage structures. Only Alternate 1 and 3 may be used for Cattle Passes. Unless otherwise stated in the contract the materials, fabrication and work necessary to tie Culvert Pipe as indicated on the plans and by this detail will be considered incidental to Culvert Pipe, Reinforced Concrete Culvert Pipe, or Reinforced Concrete Pipe Cattle Pass.

Detailed drawings for proposed alternate designs for Joint Ties shall be submitted to the Engineer for approval.

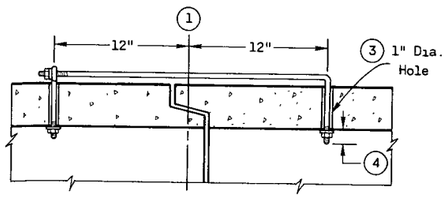
1. ℄ of Tongue and Groove or Bell and Spigot Joints.
2. The inside of the Threaded Inserts shall be clean to allow the insertion of Threaded Eye Bolts.
3. Holes shall be Cast-in-Place or drilled 12" from ℄ of Tongue and Groove.
4. Bolt projection inside of pipe shall not exceed 2".
5. Rod Diameter + 1 inch.

(JOINT TIES FOR 72" DIA. AND OVER CONCRETE PIPE)

EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 1)



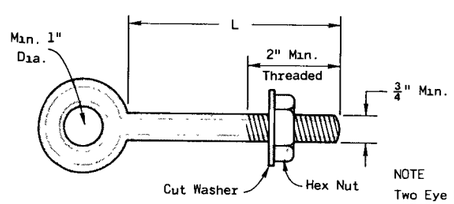
(MODIFIED BELL PIPE)



(TONGUE & GROOVE PIPE)
LONGITUDINAL SECTION

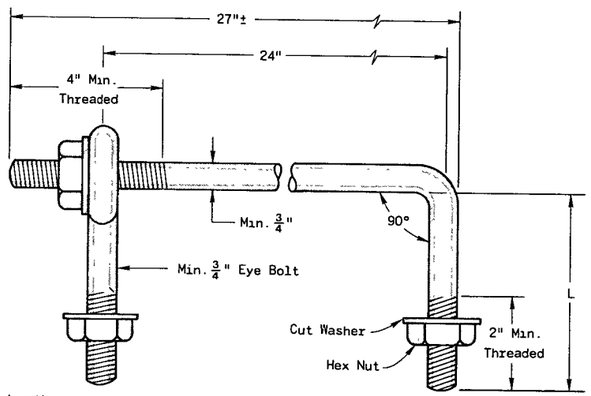
EYE BOLT DIMENSION TABLE

PIPE SIZE	L = LENGTH	
	TONGUE & GROOVE PIPE	MODIFIED BELL PIPE
18" to 24"	4½"	6¼"
30"	5"	7"
36"	5½"	7"
42"	6"	
48"	6½"	
60"	7½"	
66"	8"	



EYE BOLT

NOTE
Two Eye Bolts may be used with a 30" long Threaded Rod in lieu of the 90° bent Tie Rod.



EYE BOLT AND TIE ROD

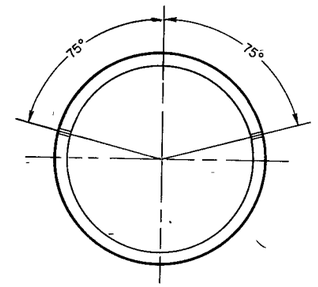
(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 2)

ADJUSTABLE TIE ROD TABLE

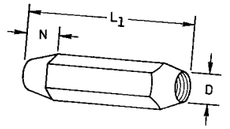
PIPE DIAMETER	TIE ROD DIAMETER	D	L_1	N	W
12-60	⅝	⅝	5	½	1¾
66-84	¾	¾	5	½	5
90-108	1	1	7	1 7/16	7½

DIMENSIONS SHOWN ARE IN INCHES



Placement of (2) Cast-in-Place inserts or holes during fabrication for pipe sections requiring Tie Rods

TRANSVERSE SECTION



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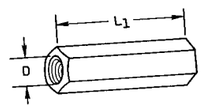
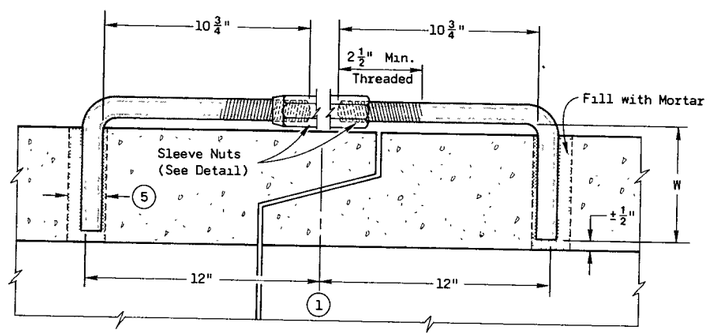


PLAIN

RIGHT AND LEFT THREADS
SLEEVE NUTS



LONGITUDINAL SECTION

(JOINT TIES FOR 12" TO 108" DIA. CONCRETE PIPE)

ADJUSTABLE TIE ROD (ALTERNATE NO. 3)

JOINT TIES FOR CONCRETE PIPE

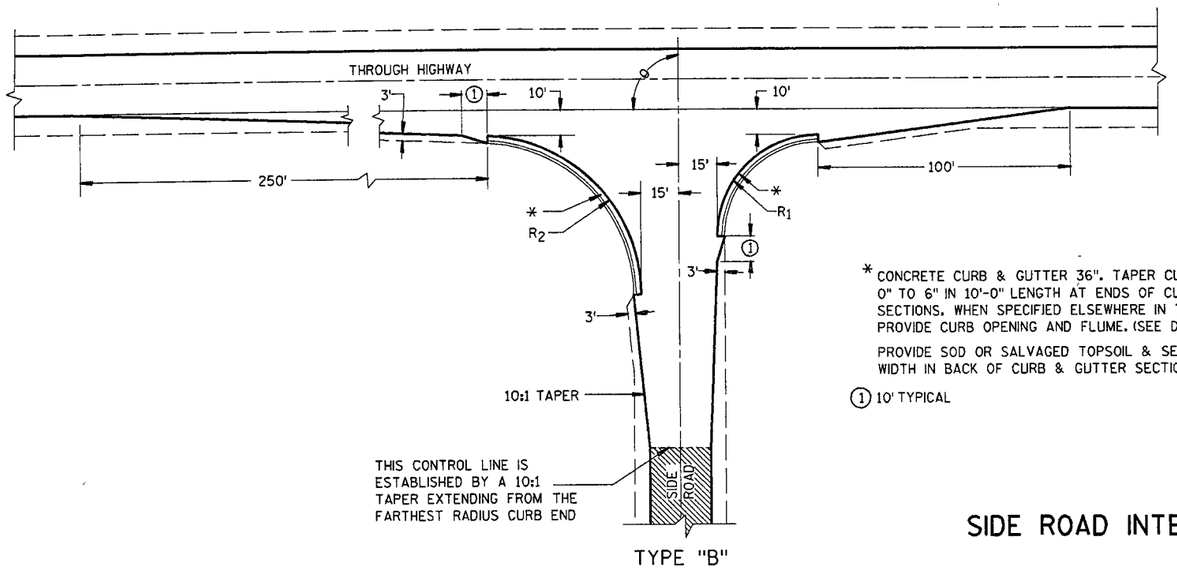
State of Wisconsin
Department of Transportation

APPROVED 12-29-82
DATE
FHWA

CHIEF DESIGN ENGINEER

S.D.D. 8 F 4-3

S.D.D. 8 F 4-3

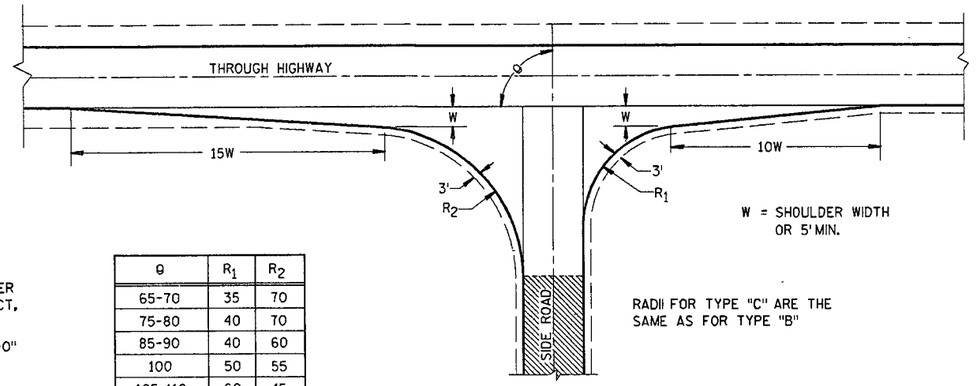


TYPE "B"

* CONCRETE CURB & GUTTER 36". TAPER CURB HEIGHT 0" TO 6" IN 10'-0" LENGTH AT ENDS OF CURB & GUTTER SECTIONS. WHEN SPECIFIED ELSEWHERE IN THE CONTRACT, PROVIDE CURB OPENING AND FLUME. (SEE DETAIL).

PROVIDE SOD OR SALVAGED TOPSOIL & SEED TO A 3'-0" WIDTH IN BACK OF CURB & GUTTER SECTIONS.

(1) 10' TYPICAL



W = SHOULDER WIDTH OR 5' MIN.

RADII FOR TYPE "C" ARE THE SAME AS FOR TYPE "B"

TYPE "C"

Θ	R_1	R_2
65-70	35	70
75-80	40	70
85-90	40	60
100	50	55
105-110	60	45

SIDE ROAD INTERSECTIONS DETAILS

GENERAL NOTES

DESIGNS MAY BE USED INTERCHANGEABLY IN COMBINATION OR SEPARATELY FOR ANY ONE COMPLETE INTERSECTION DEPENDING UPON INTERSECTION ANGLE AND SURFACING OF EACH APPROACH ROADWAY.

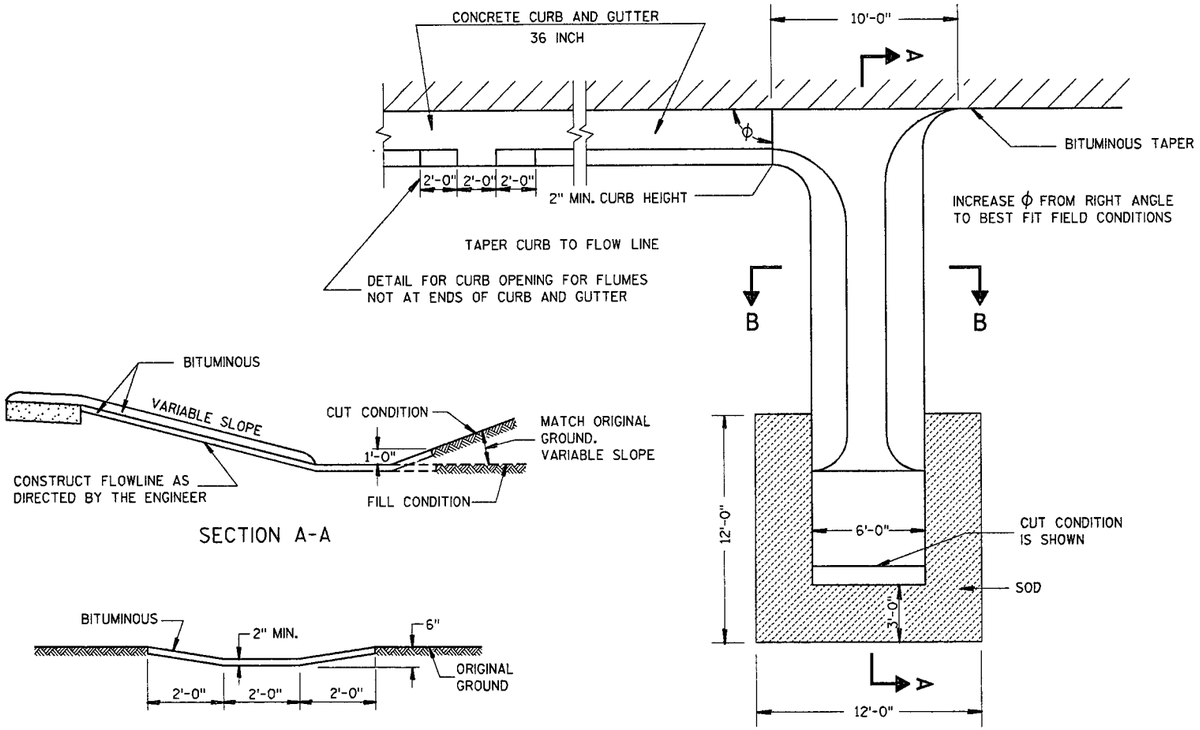
SIDE ROAD SURFACING NOTE

WHEN THE SIDE ROAD IS NOT PRESENTLY PAVED, PAVEMENT SHALL BE PLACED TO THE LIMITS SHOWN. WHERE THE CONSTRUCTION LIMITS ARE BEYOND THE PAVING LIMITS, CRUSHED AGGREGATE SURFACING SHALL BE PLACED BETWEEN THE PAVING LIMITS AND CONSTRUCTION LIMITS.

WHEN THE SIDE ROAD IS PRESENTLY PAVED, NEW PAVEMENT SHALL BE PLACED TO THE LIMITS OF DESIGN AS SHOWN AND BEYOND, IF NECESSARY, TO MEET EXISTING PAVEMENT.

WHEN THE SIDE ROAD IS THE CONSTRUCTION PROJECT, THE INTERSECTION SURFACING SHALL BE THE SAME AS FOR THE PROJECT.

▨ EXISTING SURFACE



SECTION A-A

SECTION B-B

DETAIL OF BITUMINOUS FLUME AT TERMINAL END OF CURB AND GUTTER

AT-GRADE SIDE ROAD INTERSECTION, TYPES "B" AND "C"

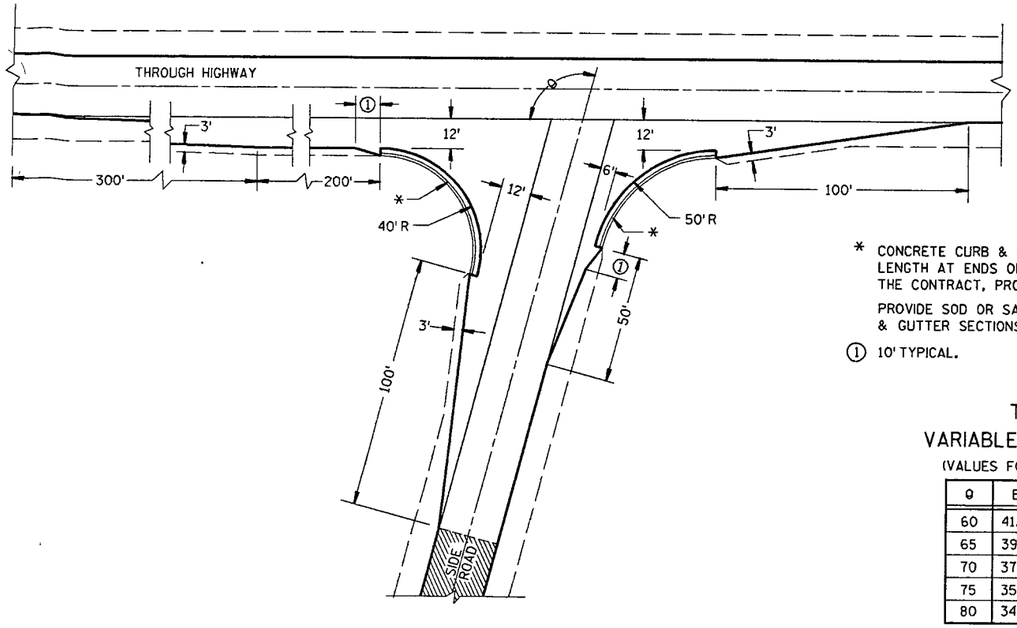
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8-29-86
DATE
STATE DESIGN ENGINEER FOR HWYS

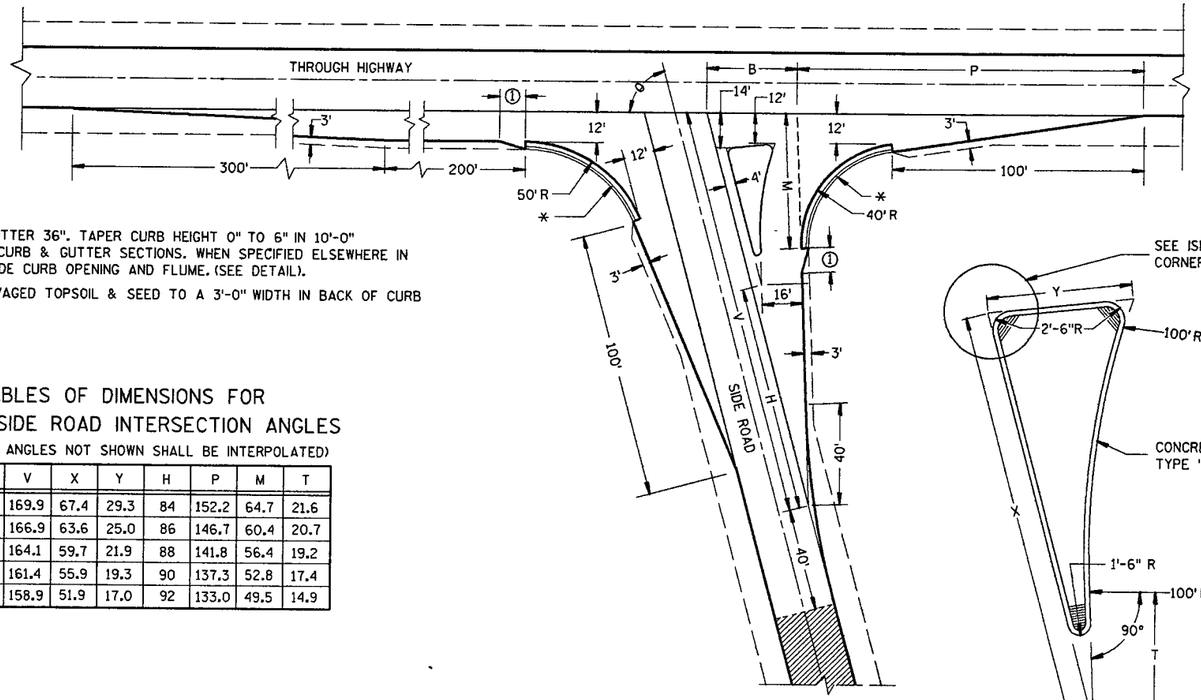
FHWA

S.D.D. 9 A 1-6a

S.D.D. 9 A 1-6a



θ = 80° OR MORE



θ = ACUTE ANGLES LESS THAN 80°

* CONCRETE CURB & GUTTER 36". TAPER CURB HEIGHT 0" TO 6" IN 10'-0" LENGTH AT ENDS OF CURB & GUTTER SECTIONS. WHEN SPECIFIED ELSEWHERE IN THE CONTRACT, PROVIDE CURB OPENING AND FLUME. (SEE DETAIL).

PROVIDE SOD OR SALVAGED TOPSOIL & SEED TO A 3'-0" WIDTH IN BACK OF CURB & GUTTER SECTIONS.

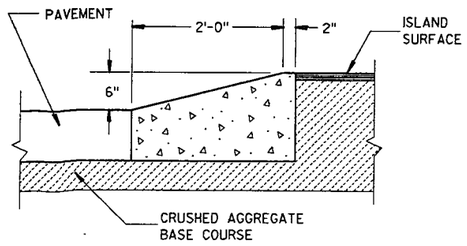
① 10' TYPICAL.

TABLES OF DIMENSIONS FOR VARIABLE SIDE ROAD INTERSECTION ANGLES

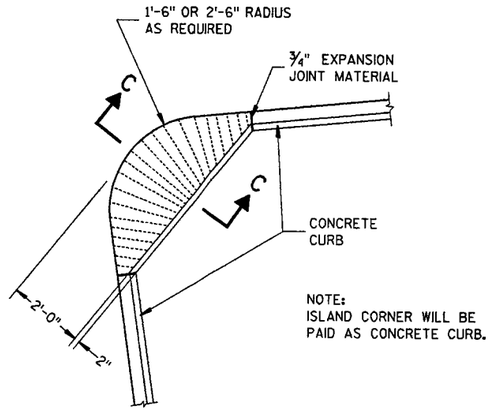
(VALUES FOR ANGLES NOT SHOWN SHALL BE INTERPOLATED)

θ	B	V	X	Y	H	P	M	T
60	41.5	169.9	67.4	29.3	84	152.2	64.7	21.6
65	39.4	166.9	63.6	25.0	86	146.7	60.4	20.7
70	37.4	164.1	59.7	21.9	88	141.8	56.4	19.2
75	35.7	161.4	55.9	19.3	90	137.3	52.8	17.4
80	34.4	158.9	51.9	17.0	92	133.0	49.5	14.9

TYPE "A" SIDE ROAD INTERSECTION DETAILS



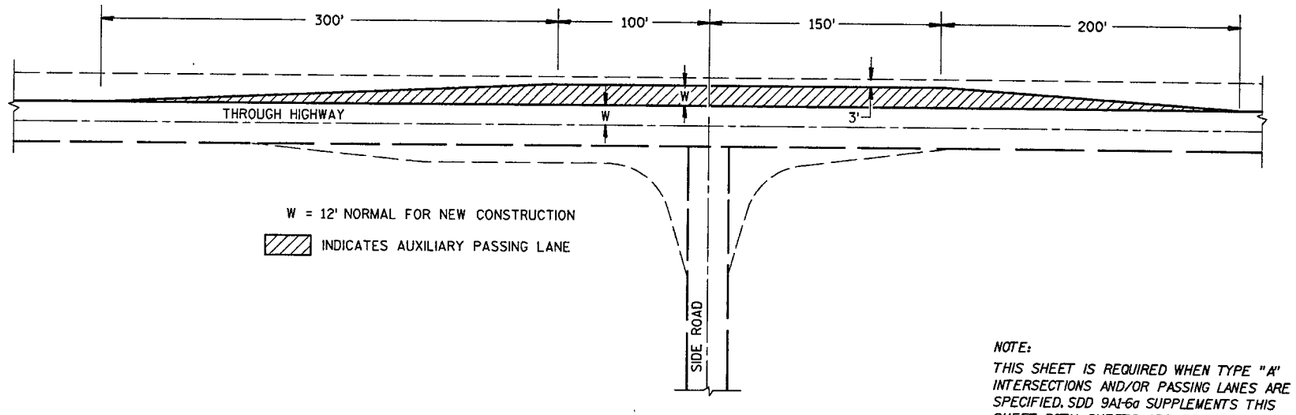
SECTION C-C



PLAN VIEW

ISLAND CORNER DETAIL

(TO BE CONSTRUCTED AT ALL ISLAND CORNERS)



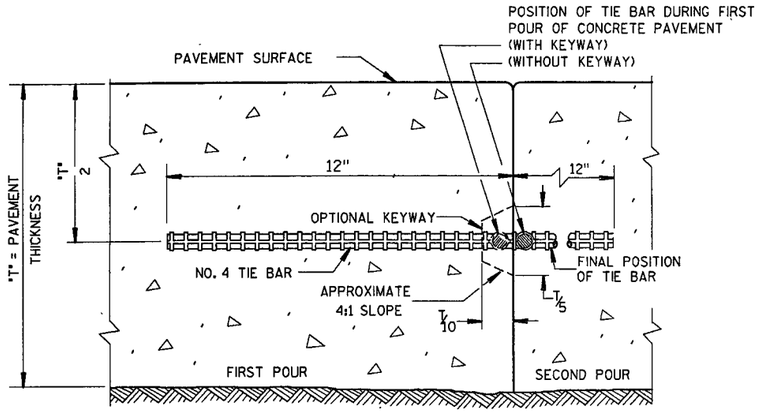
PASSING LANE DETAIL

NOTE:
THIS SHEET IS REQUIRED WHEN TYPE "A" INTERSECTIONS AND/OR PASSING LANES ARE SPECIFIED. SDD 9A1-6a SUPPLEMENTS THIS SHEET. BOTH SHEETS ARE REQUIRED WHEN THIS DRAWING IS CALLED FOR IN THE PLANS.

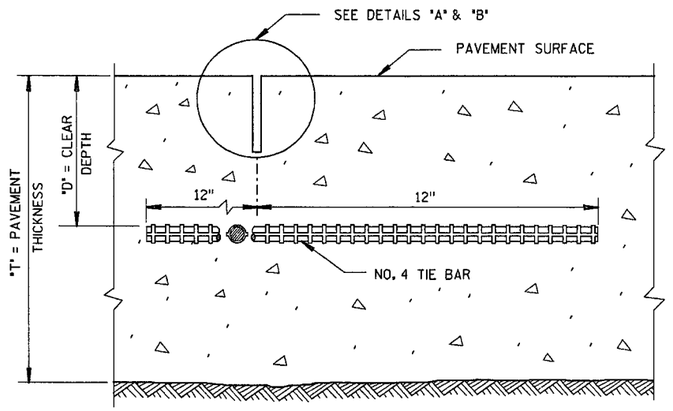
AT-GRADE SIDE ROAD INTERSECTION, TYPE "A" AND PASSING LANES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

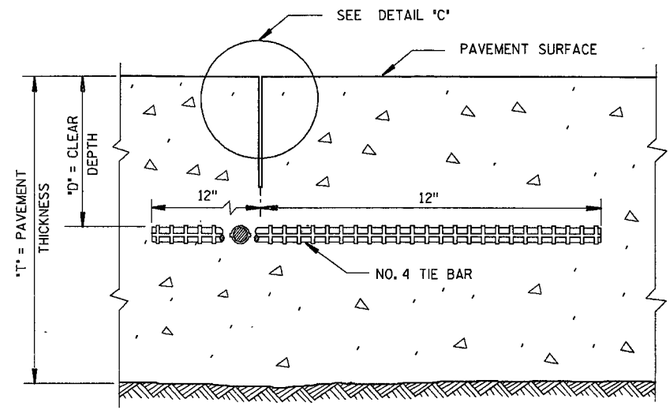
S.D.D. 9 A 1-6b



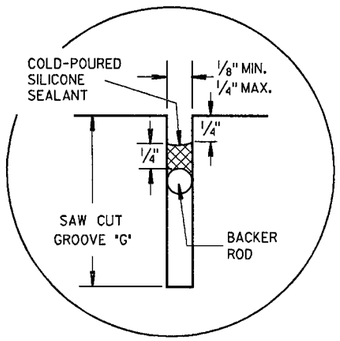
CONSTRUCTION JOINT



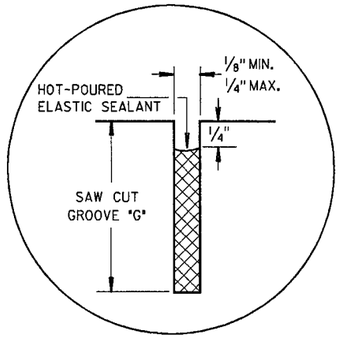
SAWED JOINT



RIBBON JOINT



DETAIL "A"



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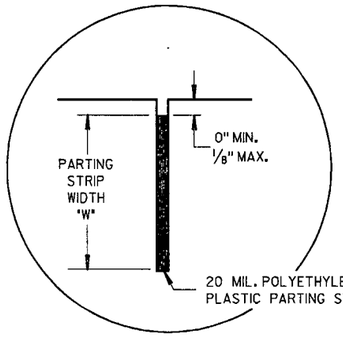

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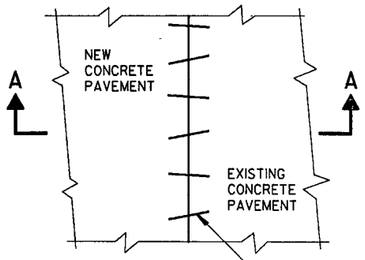
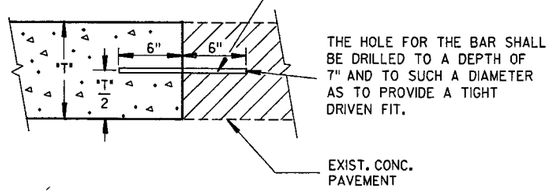
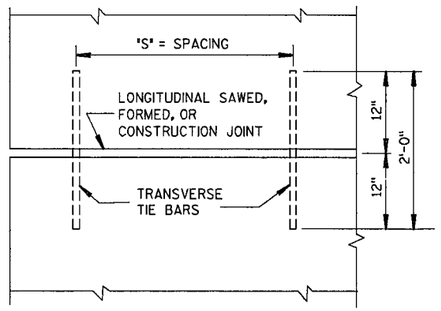


PLAN VIEW



SECTION A-A
PAVEMENT TIES

PAVEMENT THICKNESS "T"	CLEAR DEPTH "D"	SAW CUT GROOVE "G"	MAXIMUM TIE BAR SPACING "S"	PARTING STRIP WIDTH "W"
6"	3"±½"	1 ½"	30"	2"
7"	3 ¼"±1"	1 ¾"	30"	2 ¼"
8"	3 ¾"±1"	2"	30"	2 ½"
9"	4 ¼"±1"	2 ¼"	30"	3"
10"	4 ¾"±1"	2 ½"	30"	3 ¼"
11"	5 ¼"±1"	2 ¾"	24"	3 ¾"
12"	5 ¾"±1"	3"	24"	4"



PLAN VIEW
SHOWING LOCATION OF TIE BARS

GENERAL NOTES

DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

DETAILS "A", "B" AND "C" ARE EQUAL ALTERNATES UNLESS OTHERWISE SPECIFIED ELSEWHERE IN THE CONTRACT.

TIE BARS AND PAVEMENT TIES SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.4 OF THE STANDARD SPECIFICATIONS.

CONCRETE PAVEMENT LONGITUDINAL JOINTS AND PAVEMENT TIES

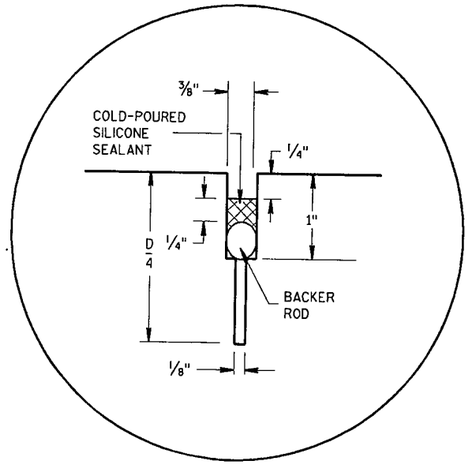
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED 3-7-86 DATE
STATE DESIGN ENGINEER FOR HWYS

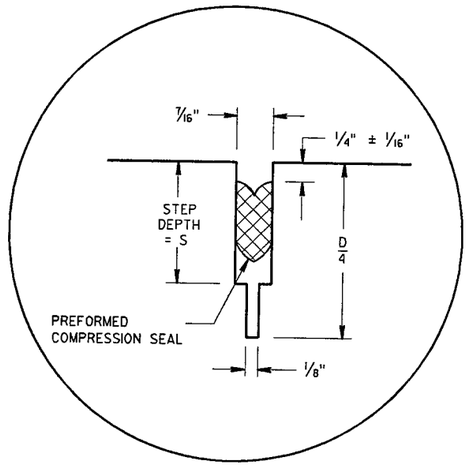
FHWA

S.D.D. 13 C 1-7

S.D.D. 13 C 1-7



DETAIL "A"
COLD-POURED SILICONE TYPE
JOINT SEALER



DETAIL "B"
PREFORMED ELASTOMERIC
COMPRESSION JOINT SEAL

GENERAL NOTES

DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.

CONTRACTION JOINTS

CONTRACTION JOINTS SHALL BE LOCATED AT THE RANDOM PATTERN INDICATED AND SHALL BE SKEWED RHF. EXCEPTIONS SUCH AS CONTRACTION JOINTS THROUGH INTERSECTIONS, SHALL BE AS DIRECTED BY THE ENGINEER.

THE FIRST SAWCUT SHALL BE TO THE DEPTH OF D/4 AND THE WIDTH OF 1/8 INCH.

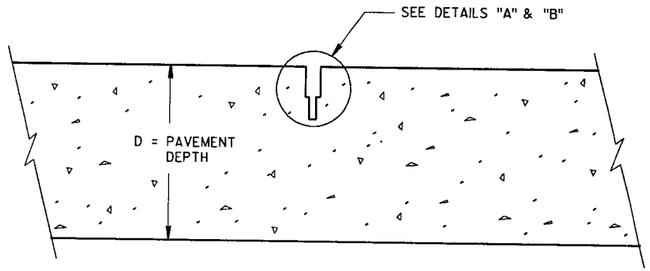
DETAILS "A" AND "B" ARE EQUAL ALTERNATES.

CONSTRUCTION JOINTS

CONSTRUCTION JOINTS MAY BE LOCATED IN ANY PANEL AND BE A MINIMUM OF 4 FEET FROM THE NEAREST CONTRACTION JOINT. CONSTRUCTION JOINTS MAY BE CONSTRUCTED EITHER PARALLEL TO CONTRACTION JOINTS OR AT 90° TO THE CENTERLINE.

TIE BARS MAY BE INSERTED THROUGH THE HEADER BOARD AFTER THE CONCRETE HAS BEEN POURED.

TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.4 OF THE STANDARD SPECIFICATIONS.

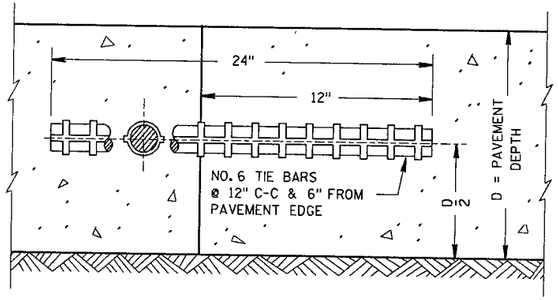


CONTRACTION JOINT

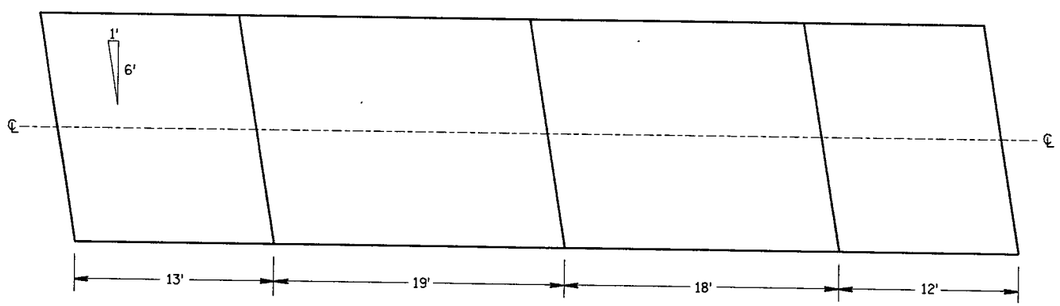
SEAL DIMENSIONS (UNCOMPRESSED)		STEP DEPTH S (MIN.)
WIDTH ①	HEIGHT ②	
13/16"	15/16"	1 7/16"

① TOLERANCE PLUS 1/16 INCH AND MINUS ZERO INCH.

② SEALS WITH GREATER HEIGHTS MAY BE USED. STEP DEPTH SHALL THEN BE INCREASED AN EQUAL AMOUNT.



CONSTRUCTION JOINT



CONTRACTION JOINT LOCATIONS

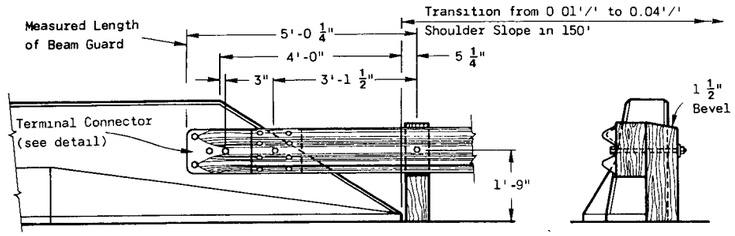
TRANSVERSE JOINTS IN
NON-REINFORCED CONCRETE PAVEMENT
(RANDOM SPACED & SKEWED
TRANSVERSE JOINTS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
5-28-86
DATE
STATE DESIGN ENGINEER FOR HWYS
FHWA

S.D.D. 13 C 5-6

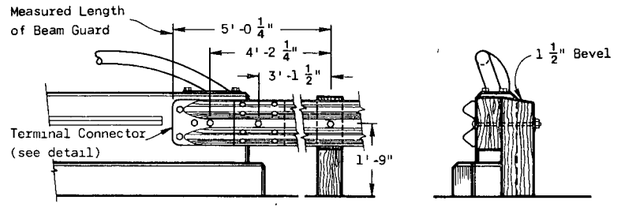
S.D.D. 13 C 5-6



FRONT VIEW

END VIEW

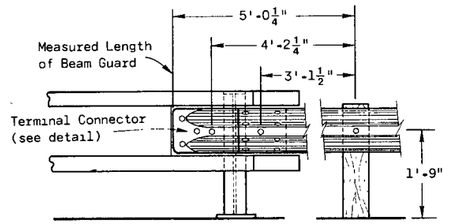
SLOPED FACE PARAPET



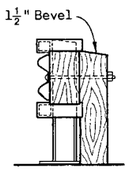
FRONT VIEW

END VIEW

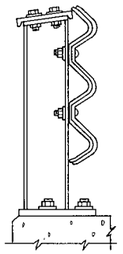
VERTICAL FACE PARAPET



FRONT VIEW

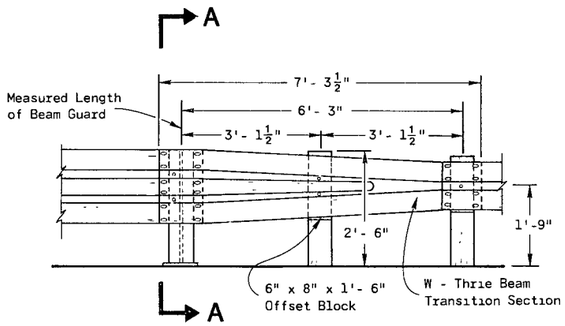


END VIEW



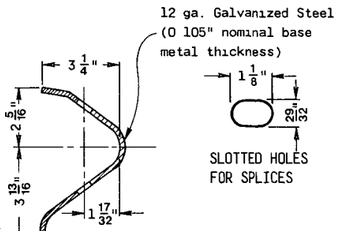
SECTION A-A

RAILING TYPE "F"



FRONT VIEW

RAILING TYPE "W"



SECTION THRU RAIL ELEMENT

GENERAL NOTES

Details of construction, materials and workmanship not shown on this drawing shall conform to the pertinent requirements of the Standard Specifications, the applicable Special Provisions

The type of anchorage and the exact location of the beginning and end of each beam guard installation shall be as shown on the plans or as directed by the Engineer

Shoulder widening to accommodate the anchored end of the beam guard shall be accomplished at a rate of widening not to exceed 5 to 1

Standard Anchorages - Upon approval of the Engineer, the 6 foot offset may be reduced to nothing where existing conditions will not permit the desirable offset However, when no offset greater than or equal to 3 feet can be provided, the minimum length of guardrail in advance of an obstacle (obstacle to anchor) shall be 150 feet

The "Post Footing Details at Piers" shall be used when beam guard posts are over structure footings and less than 3 feet-6 inches of earth is provided over the top of the footing

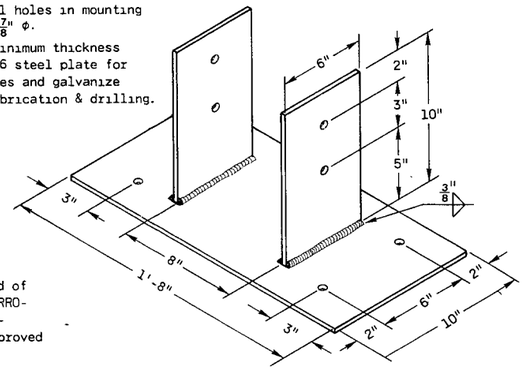
(1) The minimum clearance from the front face of beam guard to obstacle shall be 4 feet unless otherwise shown on contract plans When clearance is less than 4 feet, post spacing shall be reduced to 3 feet-1½ inches C-C.

(2) This section shall include at least one 12'-6" Rail Element and a Terminal Connector or W-Thrie Beam Transition Section as required for structure mounting.

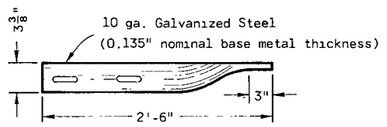
NOTE.

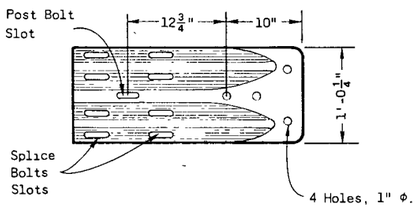
Drill all holes in mounting bracket 7/8" ϕ.

Use 3/8" minimum thickness ASTM A 36 steel plate for all pieces and galvanize after fabrication & drilling.



POST MOUNTING BRACKET



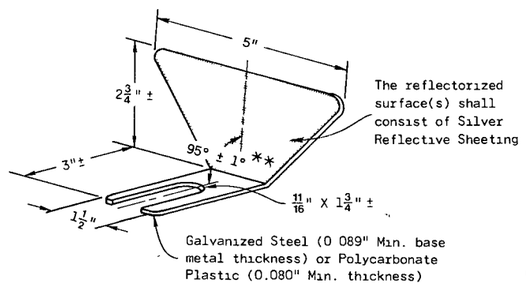


NOTE·

1" I.D., 2" O D. (0.134" Nominal thickness) galvanized metal washer required under the head of splice bolts used in the Terminal Connector only.

TERMINAL CONNECTOR

STRUCTURE MOUNTING DETAILS



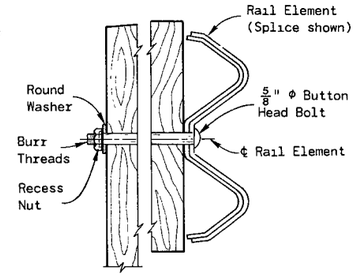
REFLECTOR SPACING

	Beam Guard Length	Reflector Spacing	No. Surfaces Reflectorized	Min. No. Reflectors
One Way Traffic	< 200'	50' C-C	1	3
	> 200'	100' C-C	1	
Two Way Traffic	< 200' *	25' C-C	1 *	6
	> 200' *	50' C-C	1 *	
Two Way Traffic	< 200'	50' C-C	2 **	3
	> 200'	100' C-C	2 **	

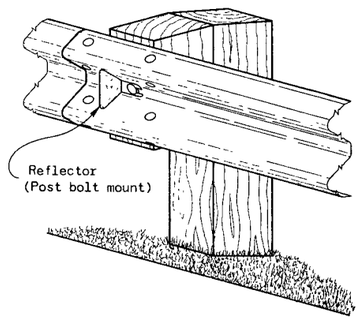
* Every other reflector reversed for 2-way visibility. Contractor may furnish two-sided reflectors in lieu of one-sided reflectors.

** Angle of bend to be 90° ± 1° for two-sided reflectors.

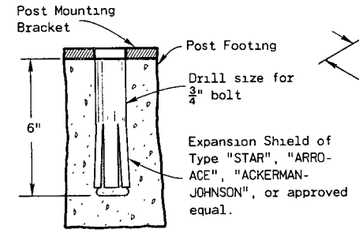
REFLECTOR DETAIL



BUTTON HEAD BOLT DETAIL

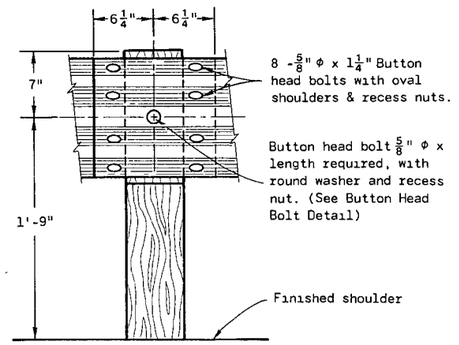


TYPICAL INSTALLATION



EXPANSION SHIELD DETAIL

POST FOOTING DETAIL AT PIERS



RAIL ELEMENT SPLICING AND POST MOUNTING DETAIL

NOTE

THIS STANDARD DETAIL DRAWING CONSISTS OF TWO SHEETS AND BOTH SHEETS ARE REQUIRED WHEN THIS DRAWING IS CALLED FOR IN CONTRACT PLANS.

CAUTION WHEN SPECIAL ANCHORAGES ARE SPECIFIED, SHEET 8c IS ALSO REQUIRED

CLASS "A"

STEEL PLATE BEAM GUARD

State of Wisconsin

Department of Transportation

APPROVED 1-31-85

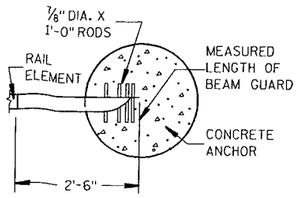
DATE

CHIEF DESIGN ENGINEER

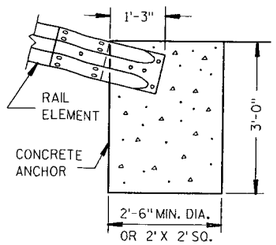
FHWA

S.D.D. 14 B 2-8a

S.D.D. 14 B 2-8a



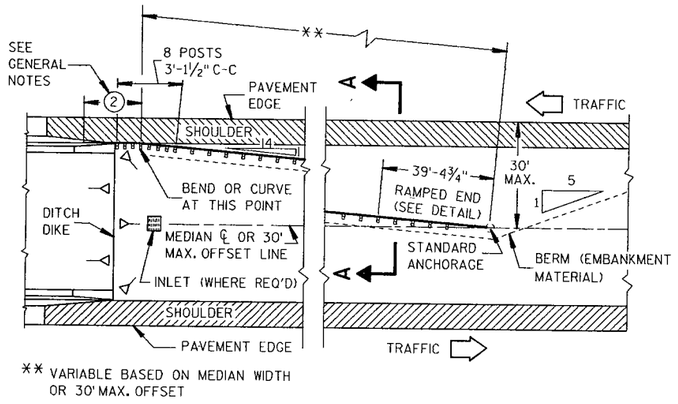
PLAN VIEW IN SECTION



FRONT VIEW IN SECTION

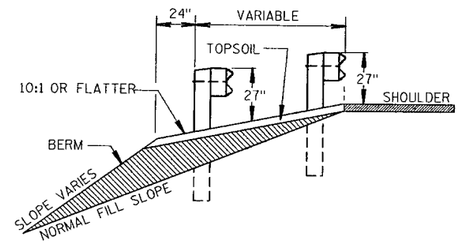
STANDARD ANCHORAGE DETAIL

(STANDARD SPECIFICATION ITEM "ANCHORAGE FOR STEEL PLATE BEAM GUARD")



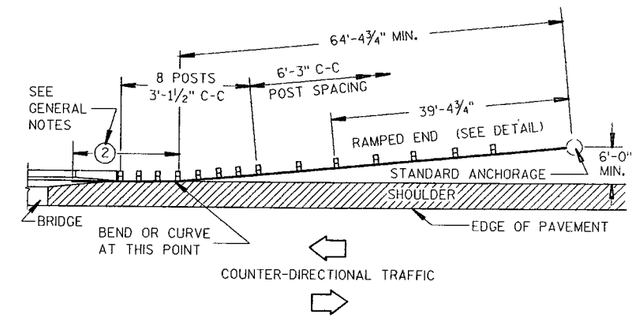
** VARIABLE BASED ON MEDIAN WIDTH OR 30' MAX. OFFSET

PLAN VIEW



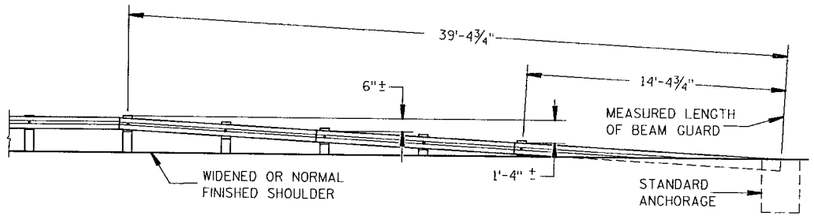
SECTION A-A

TYPICAL MEDIAN INSTALLATION AT STRUCTURES



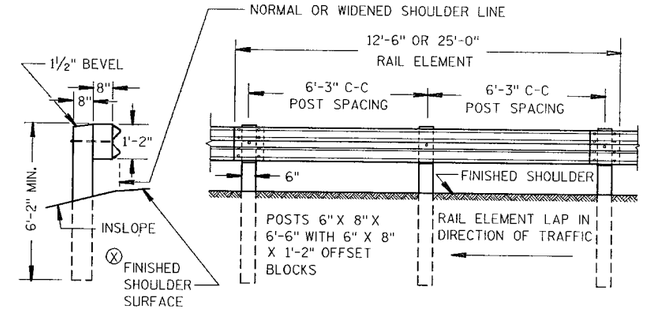
PLAN VIEW

TYPICAL INSTALLATION AT FULL WIDTH STRUCTURES



FRONT VIEW

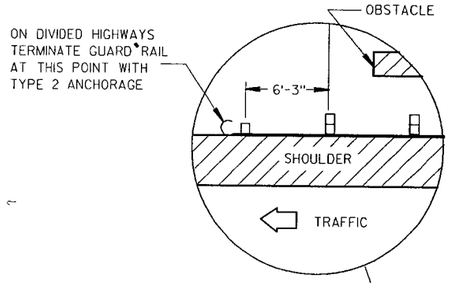
TYPICAL RAMPED END

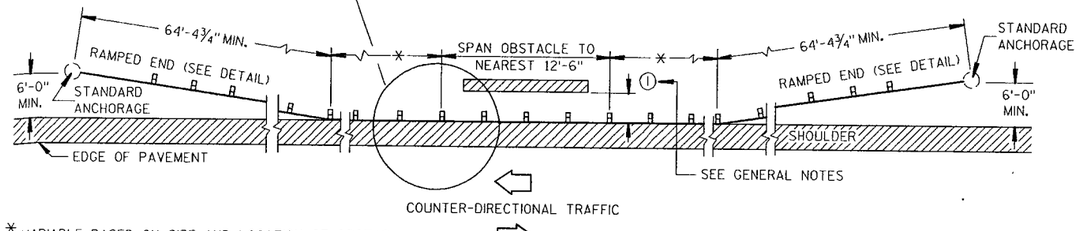


END VIEW FRONT VIEW

TYPICAL STEEL PLATE BEAM GUARD INSTALLATION

Ⓧ SHOULDER OR EMBANKMENT SLOPE IN FRONT OF BEAM GUARD SHALL BE 10:1 OR FLATTER

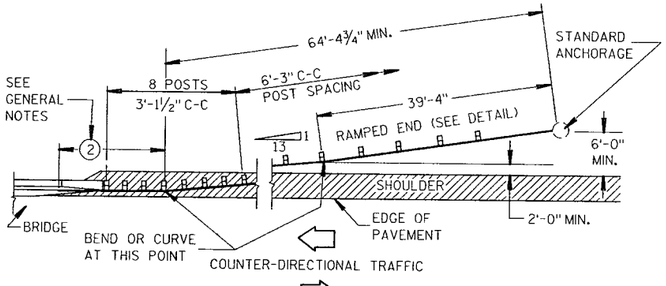




* VARIABLE BASED ON SIZE AND LOCATION OF OBSTACLE

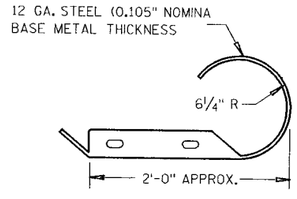
PLAN VIEW

TYPICAL INSTALLATION AT OBSTACLES



PLAN VIEW

TYPICAL INSTALLATION AT NARROW STRUCTURES



PLAN VIEW

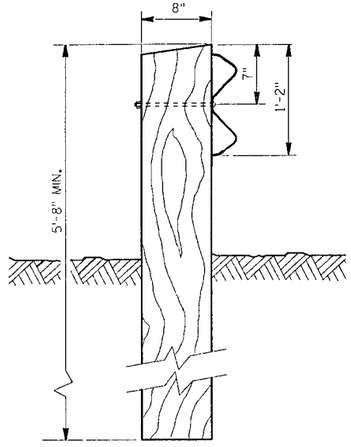
END SECTION (ROUNDED)

CLASS "A"
STEEL PLATE BEAM GUARD

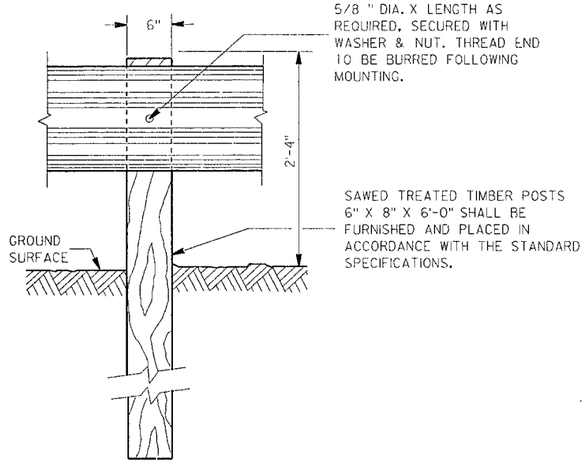
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

S.D.D. 14B 2-8b

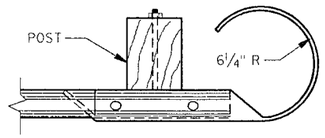
S.D.D. 14B 2-8b



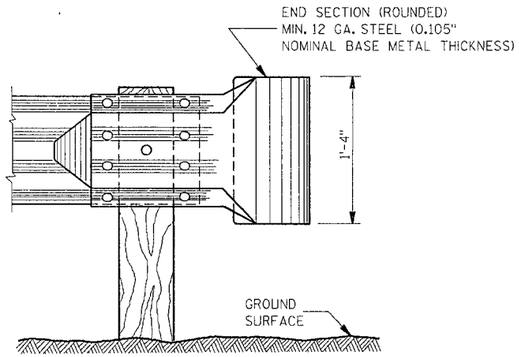
END VIEW



FRONT VIEW



PLAN

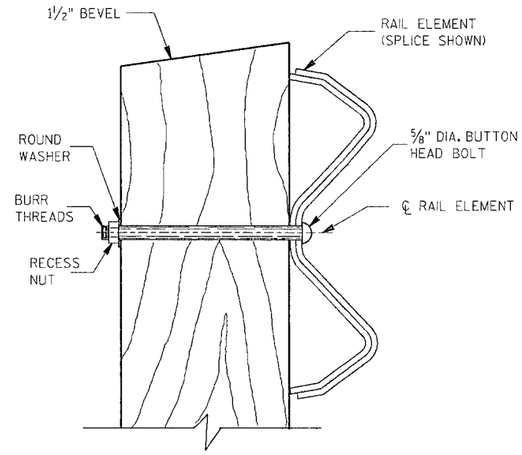


FRONT ELEVATION

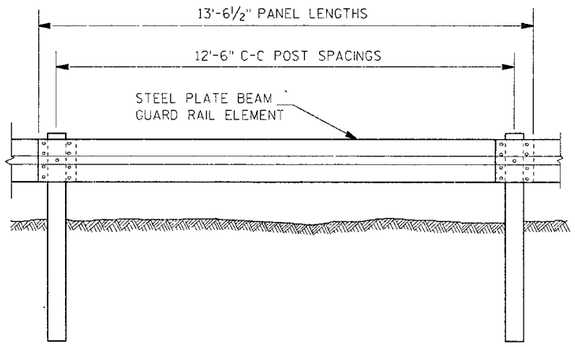
END SECTION (ROUNDED) DETAILS

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

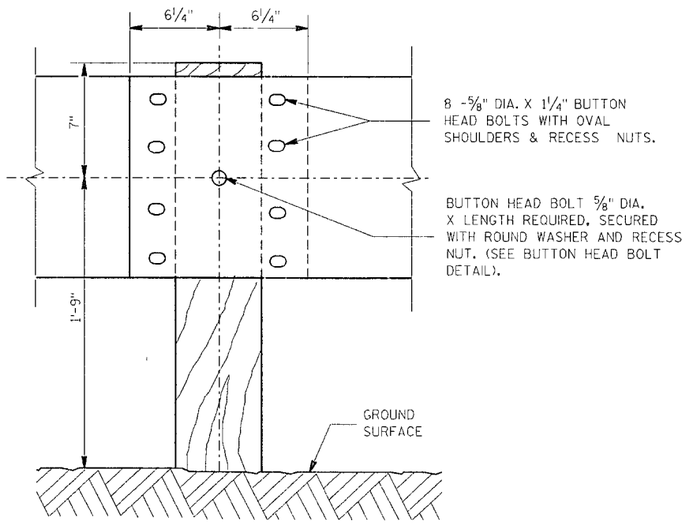


BUTTON HEAD BOLT DETAIL

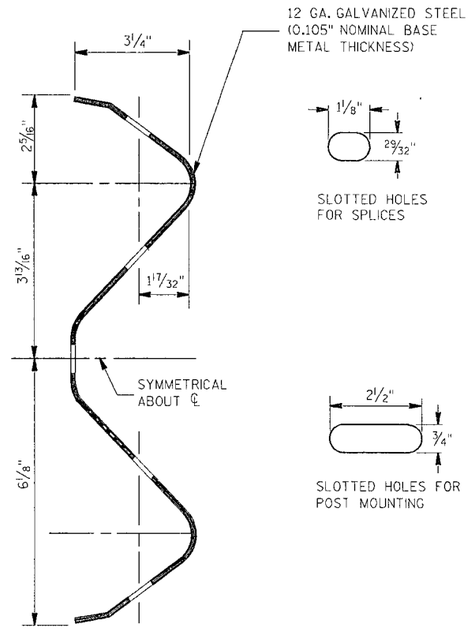


FRONT VIEW

POST DETAIL



RAIL ELEMENT SPLICING AND POST MOUNTING DETAIL



SECTION THRU RAIL ELEMENT

STEEL PLATE BEAM GUARD
CLASS B

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
3-25-85
DATE

CHIEF DESIGN ENGINEER

FHWA

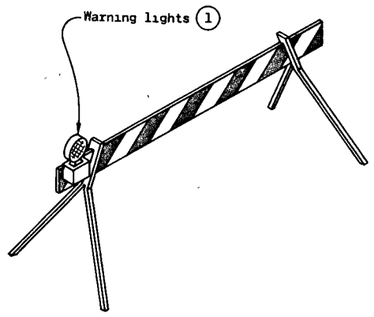
S.D.D. 14 B 3-2

S.D.D. 14 B 3-2

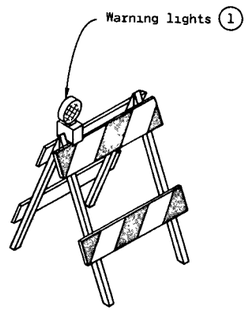
TABLE OF BARRICADE CHARACTERISTICS

BARRICADE TYPE	I	II	III
Height	3' Minimum		5' Minimum
*Rail Width	8" Minimum to 12" Maximum		
Rail Length	2' Minimum		4' Minimum
**Stripe Width	6" at 45° Angle		
Stripe Colors	Reflectorized Orange & White		

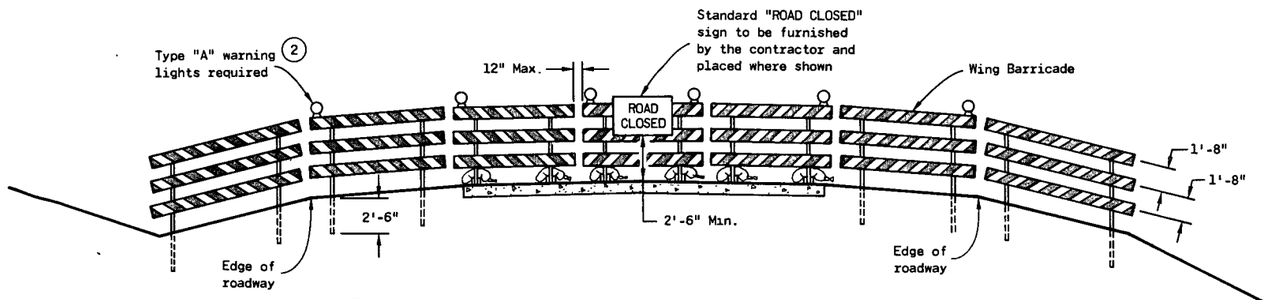
*Nominal dimensions when barricade is constructed of lumber.
**Shall be 4" for rail lengths less than 3'.



TYPICAL TYPE I BARRICADE



TYPICAL TYPE II BARRICADE



TYPICAL INSTALLATION SHOWING TYPE III BARRICADE

CONSTRUCTION BARRICADES

R11-2
48" x 30"
Black Lettering on Reflective White Background
Letter Series "D"
Letter height 8"

W20-3
48" x 48"
Black Lettering on Reflective Orange Background
Letter Series "D"
Letter height 7"

STANDARD SIGNS - TYPE II

GENERAL NOTES

The contractor shall furnish, erect and maintain barricades and signs. Details regarding location, spacing, dimensions, fabrication, material, sign lettering, lighting devices and color of barricades and signs shall conform to this drawing, the Manual On Uniform Traffic Control Devices, the Standard Specifications, Special Provisions and/or plans.

Type III Barricades and Signs shall be erected at the termini of projects and at other road or street locations where it is necessary to control or eliminate public access to the construction area.

Type I and II Barricades shall be used on projects when traffic is to be maintained through the construction area.

The actual field location of barricade installations and advance signs shall be as directed by the Engineer.

Each barricade shall have the name and telephone number of a person responsible for 24 hour emergency service printed in letters at least ¾ inch in height on the barricade rails. Prior to May 1, 1983, such information may be shown on either front or back faces of the barricade rails. After May 1, 1983, all printed information or identification markings shall be shown only on the back side of barricade rails.

Type I Barricades may include other unstriped horizontal panels necessary to provide stability.

On high speed expressways or in other situations where barricades may be susceptible to overturning in the wind, sandbags should be used for ballasting. Sandbags may be placed on lower parts of the frame or stays to provide the required ballast but shall not be placed on top of any striped rail.

(1) Unless otherwise provided elsewhere in the contract, warning lights are required on all barricades which will be located near traffic operations during periods of inclement weather or hours of darkness. Barricades used to shield isolated hazards shall be equipped with Type "A" (low intensity - flashing) lights unless Type "B" (high intensity)- flashing) lights are specified elsewhere in the contract documents. Barricades used for channelization or delineation of the travel path shall be equipped with Type "C" (steady burn) lights except for the initial barricade(s) in sequence, which shall be equipped with Type "A" or "B" lights as previously noted.

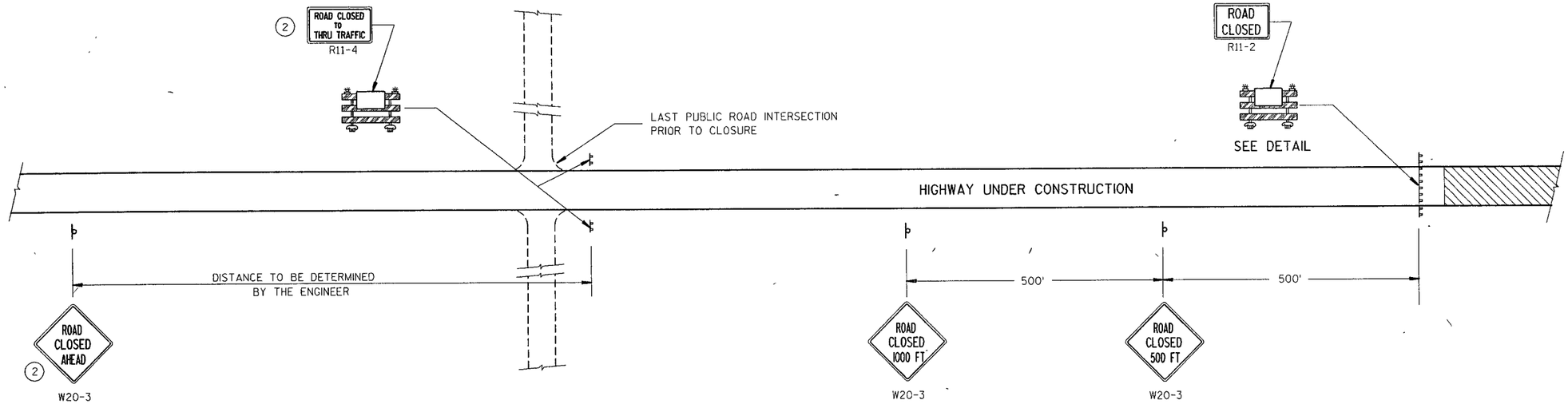
(2) Two warning lights shall be provided on the center barricade and at least one warning light shall be provided on each of the other barricades within the roadway limits. Spacing of the warning lights shall be uniform to the edge of roadway as shown.

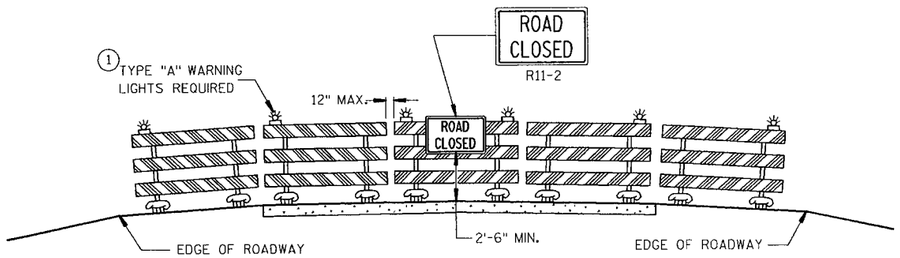
CONSTRUCTION BARRICADES & STANDARD SIGNS

State of Wisconsin
Department of Transportation

APPROVED 9-14-81 DATE
CHIEF DESIGN ENGINEER
FHWA

S.D.D. 15 C 1-7





APPROACH VIEW

ROAD CLOSURE BARRICADE

LEGEND

- POST MOUNTED WARNING SIGN
- TYPE III BARRICADE (TYPE "A" LOW INTENSITY FLASHING WARNING LIGHT(S) REQUIRED FOR NIGHTTIME USE)
- TYPE "A" LOW INTENSITY FLASHING WARNING LIGHT
- WORK AREA

GENERAL NOTES

DETAILS OF TRAFFIC CONTROL DEVICES AND THEIR LOCATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE MANUAL ON TRAFFIC CONTROL DEVICES, THE PLANS, SPECIFICATIONS AND CONTRACT.

SIGN AND BARRICADE LOCATIONS MAY BE ADJUSTED IN THE FIELD AS DIRECTED BY THE ENGINEER. ANY EXISTING TRAFFIC SIGNS THAT CONFLICT WITH THIS WORK SHALL BE COVERED AS DIRECTED BY THE ENGINEER.

(1) TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND AT LEAST ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN.

(2) THESE SIGNS ARE NOT REQUIRED IF THE INTERSECTION IS THE BEGINNING OF THE MARKED DETOUR.

TRAFFIC CONTROL TO CLOSE HIGHWAY UNDER CONSTRUCTION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

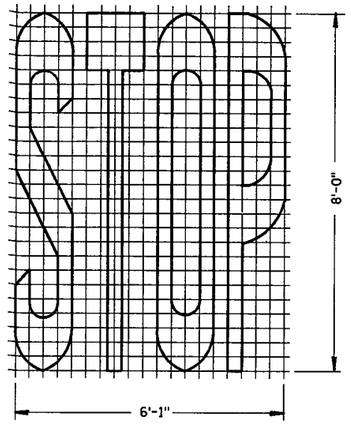
APPROVED
6-5-85
DATE

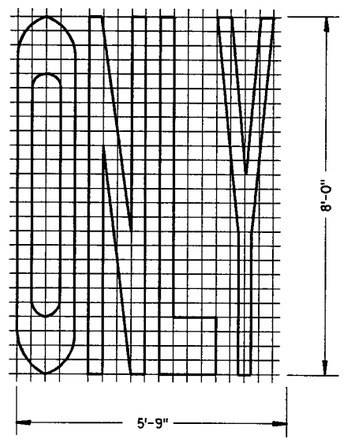
CHIEF TRAFFIC ENGINEER

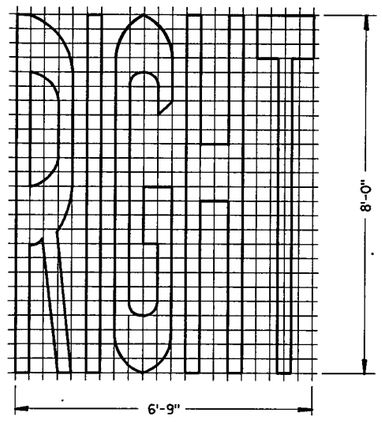
FHWA

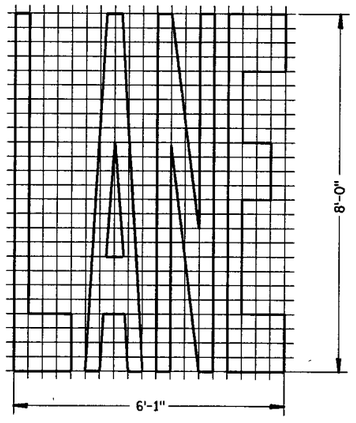
S.D.D. 15 C 2-1

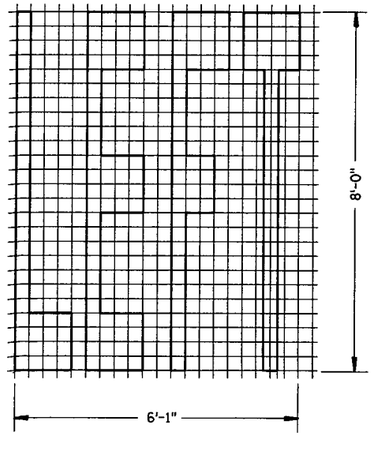
S.D.D. 15 C 2-1

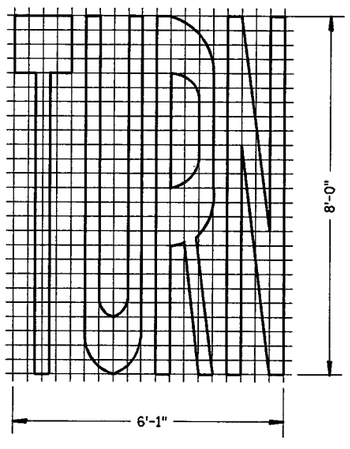


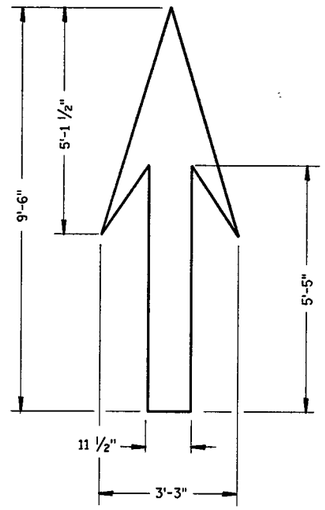




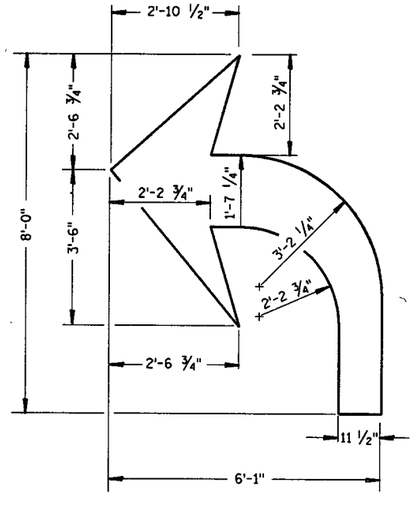








TYPE 1



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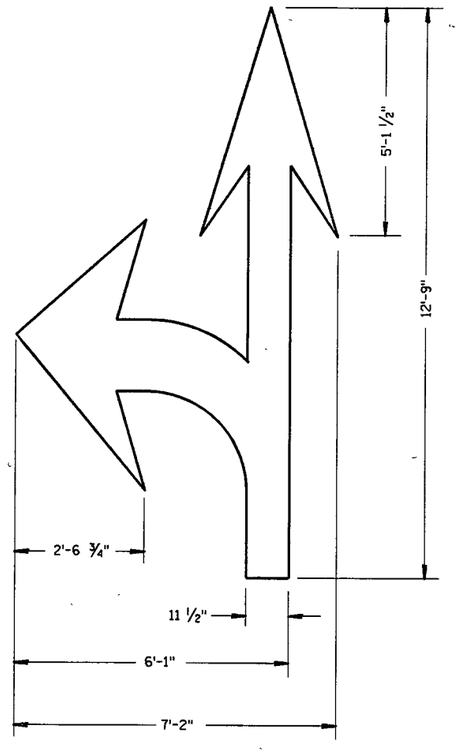
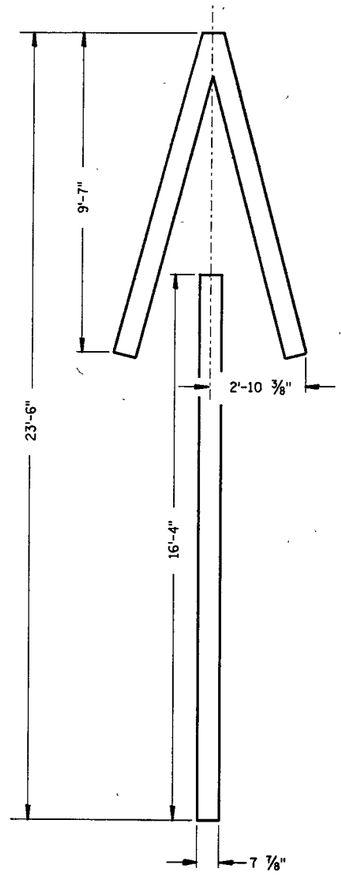


TYPE 3



TYPE 4

GENERAL NOTES

DETAILS OF INSTALLATION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

ALL LETTERS AND ARROWS SHALL BE WHITE AND REFLECTORIZED.

PAVEMENT MARKING SYMBOLS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

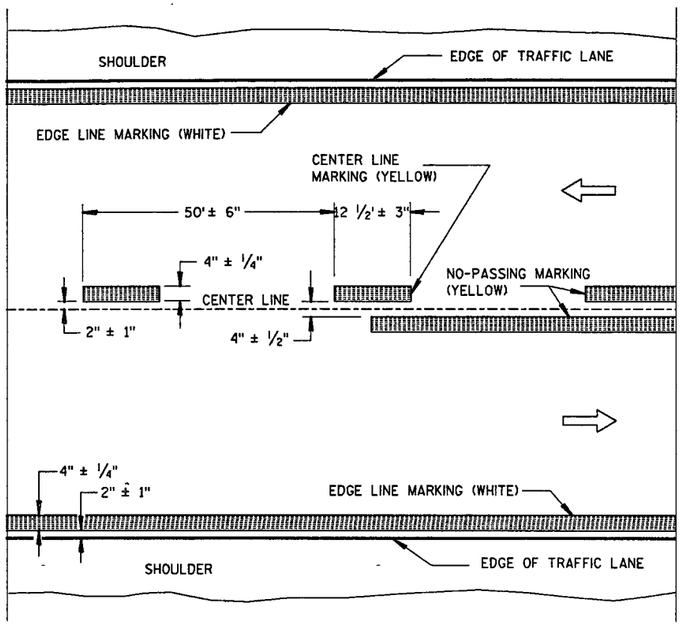
APPROVED
5-23-86
DATE

STATE TRAFFIC ENGINEER FOR HWYS

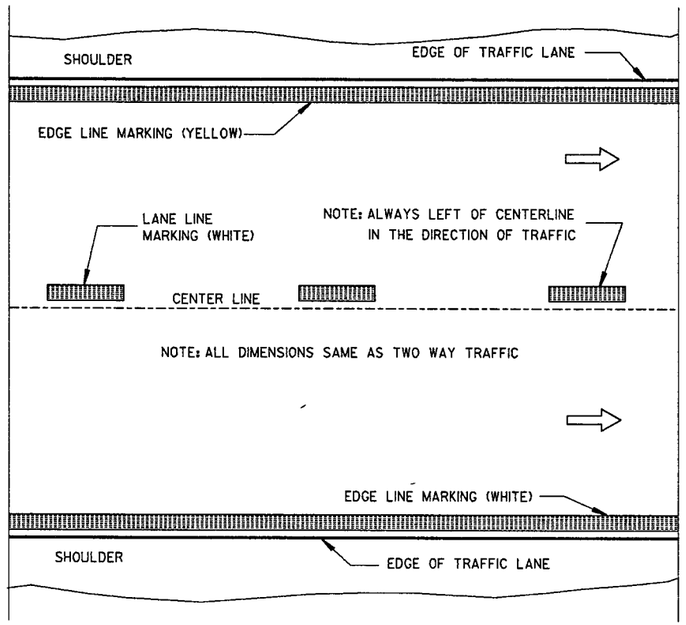
FHWA

S.D.D. 15 C 7-1

S.D.D. 15 C 7-1

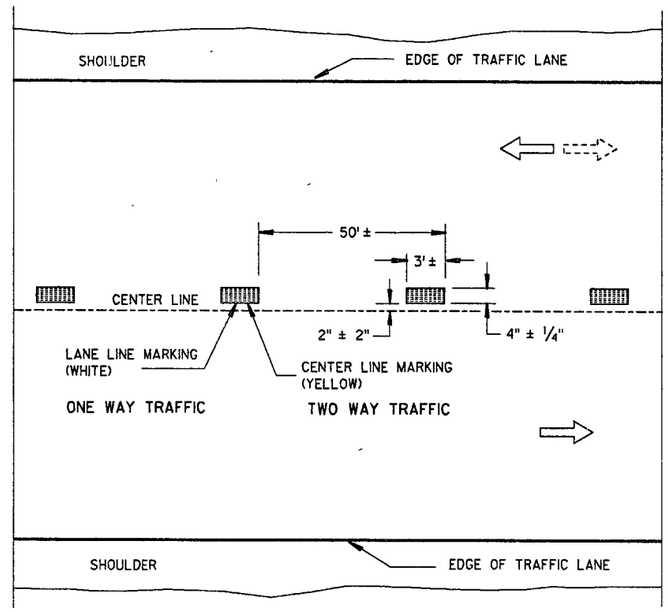


TWO WAY TRAFFIC



ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TEMPORARY PAVEMENT MARKING

GENERAL NOTES

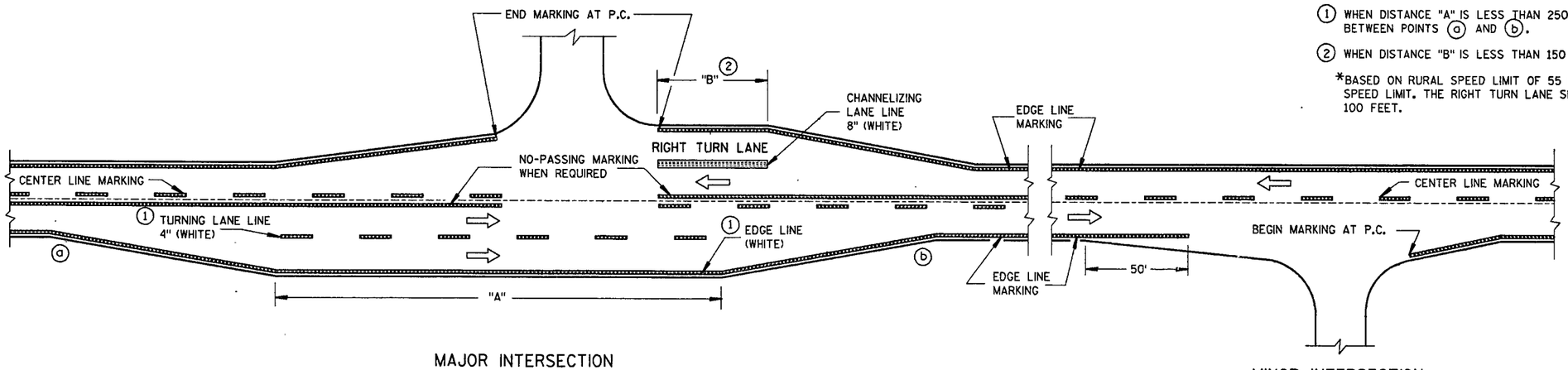
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.

EDGE LINES SHALL BE OMITTED THROUGH INTERSECTIONS. EDGE LINES SHALL BE CONTINUED THROUGH DRIVEWAYS.

(1) WHEN DISTANCE "A" IS LESS THAN 250 * FEET, OMIT TURNING LANE MARKING AND EDGE LINE BETWEEN POINTS (a) AND (b).

(2) WHEN DISTANCE "B" IS LESS THAN 150 * FEET, OMIT CHANNELIZING LANE LINE.

*BASED ON RURAL SPEED LIMIT OF 55 MPH. REDUCE VALUES IN PROPORTION TO POSTED SPEED LIMIT. THE RIGHT TURN LANE SHOULD HAVE A DESIRABLE MINIMUM LENGTH OF 100 FEET.



MAJOR INTERSECTION

MINOR INTERSECTION

TYPICAL PAVEMENT MARKING FOR RURAL INTERSECTIONS

PAVEMENT MARKING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

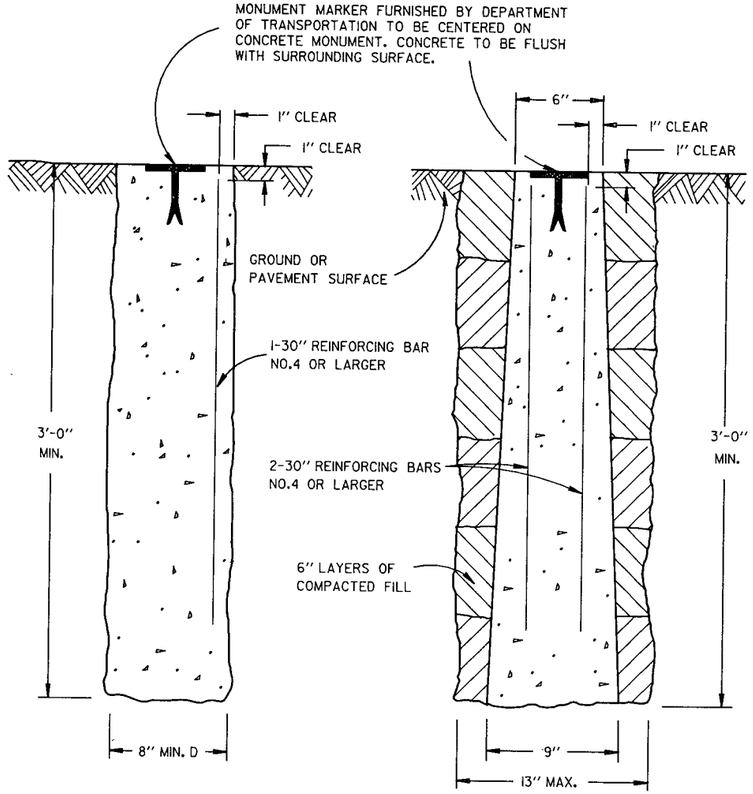
APPROVED
5-23-86
DATE

STATE TRAFFIC ENGINEER FOR HWYS

FHWA

S.D.D. 15 C 8-1

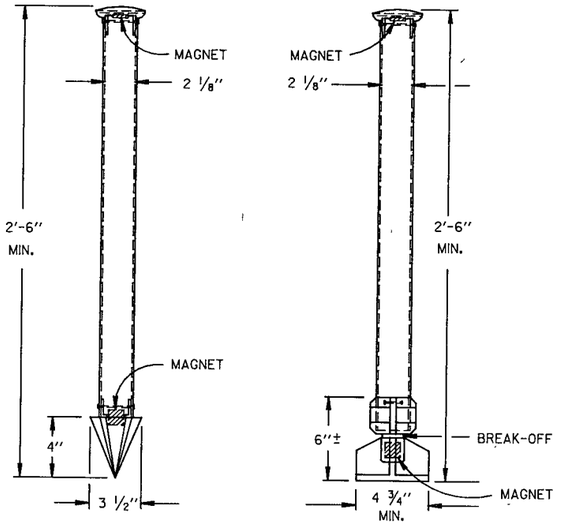
S.D.D. 15 C 8-1



CAST-IN-PLACE PRECAST

CONCRETE MONUMENTS

TYPE A



TYPE C DRIVE-IN MONUMENT

TYPE D BREAK-OFF MONUMENT

ALUMINUM MONUMENTS

(INCLUDES MARKER)

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

DETAILED DRAWINGS OF PROPOSED ALTERNATE DESIGNS FOR METAL MONUMENTS OR MONUMENT COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

THE INSTALLED METAL MONUMENT MUST BE EASILY DETECTED WITH A DIP NEEDLE. INERT PERMANENT MAGNETS SHALL BE ATTACHED NEAR THE TOP AND BOTTOM OF THOSE MONUMENTS CONSTRUCTED OF A METAL ALLOY WHICH IS NOT ATTRACTIVE TO A DIP NEEDLE.

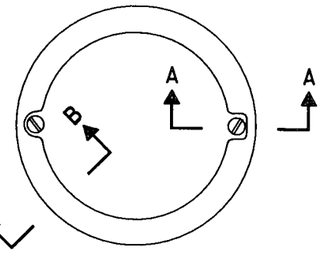
TYPE A AND TYPE D MONUMENTS ARE EQUAL ALTERNATES UNLESS OTHERWISE SPECIFIED.

THE CAST IRON MONUMENT COVER SHALL BE A "NON-ROCKING" TYPE. ADJUSTMENT OF THE COVER TO GRADE MAY BE ACCOMPLISHED BY THE USE OF MORTAR AND BRICK, OR BY EITHER PRECAST OR CAST-IN-PLACE REINFORCED CONCRETE GRADE RINGS.

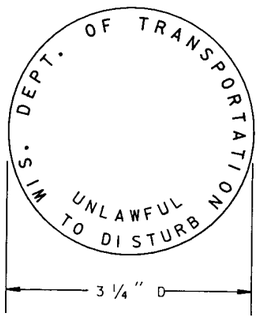
MONUMENTS SHALL BE LOCATED AND PLACED AT THE DIRECTION OF THE ENGINEER.

ALUMINUM MONUMENTS AND MONUMENT COVERS SHALL BE MADE FROM AN ALUMINUM AND MAGNESIUM ALLOY AS DETERMINED BY THE MANUFACTURER.

THE MONUMENT COVERS DETAILED ON THIS DRAWING ARE NOT EQUAL ALTERNATES. MONUMENT COVERS SHALL BE CAST IRON UNLESS ALUMINUM IS SPECIFIED ELSEWHERE IN THE CONTRACT.

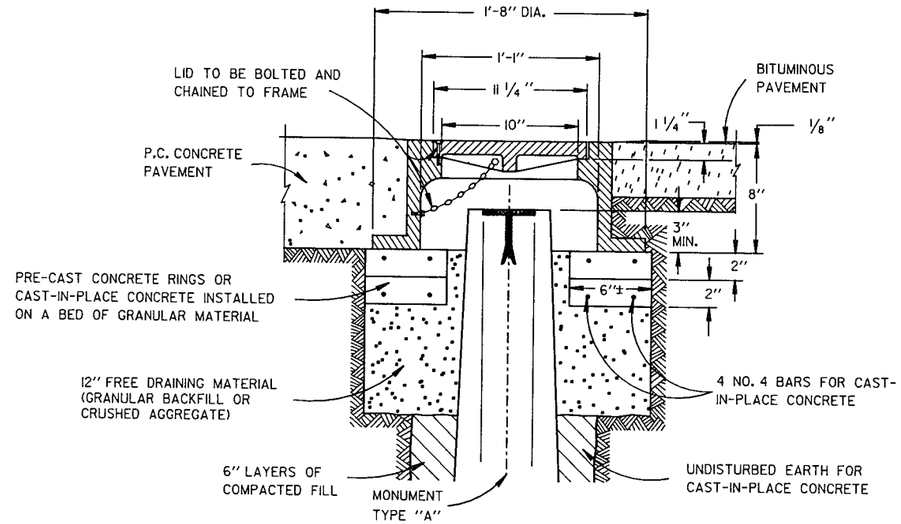


TOP VIEW



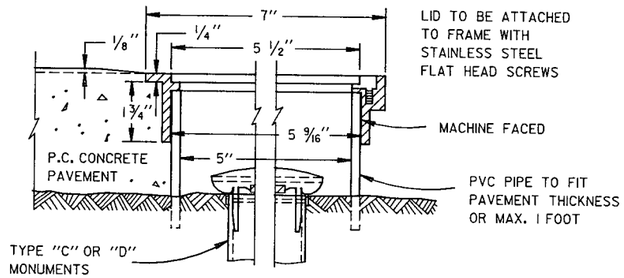
MONUMENT MARKER LOGO

FOR TYPES "A", "C" & "D"



CAST IRON MONUMENT COVER

(APPROXIMATE WEIGHT - 95 LBS.)



SECTION B-B SECTION A-A

ALUMINUM MONUMENT COVER

(APPROXIMATE WEIGHT 2 LBS)

(FOR CONCRETE PAVEMENT ONLY)

LANDMARK REFERENCE MONUMENTS AND COVERS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6-18-84 DATE
D. J. Straub CHIEF DESIGN ENGINEER
FHWA

S.D.D. 16 A 1-4

S.D.D. 16 A 1-4

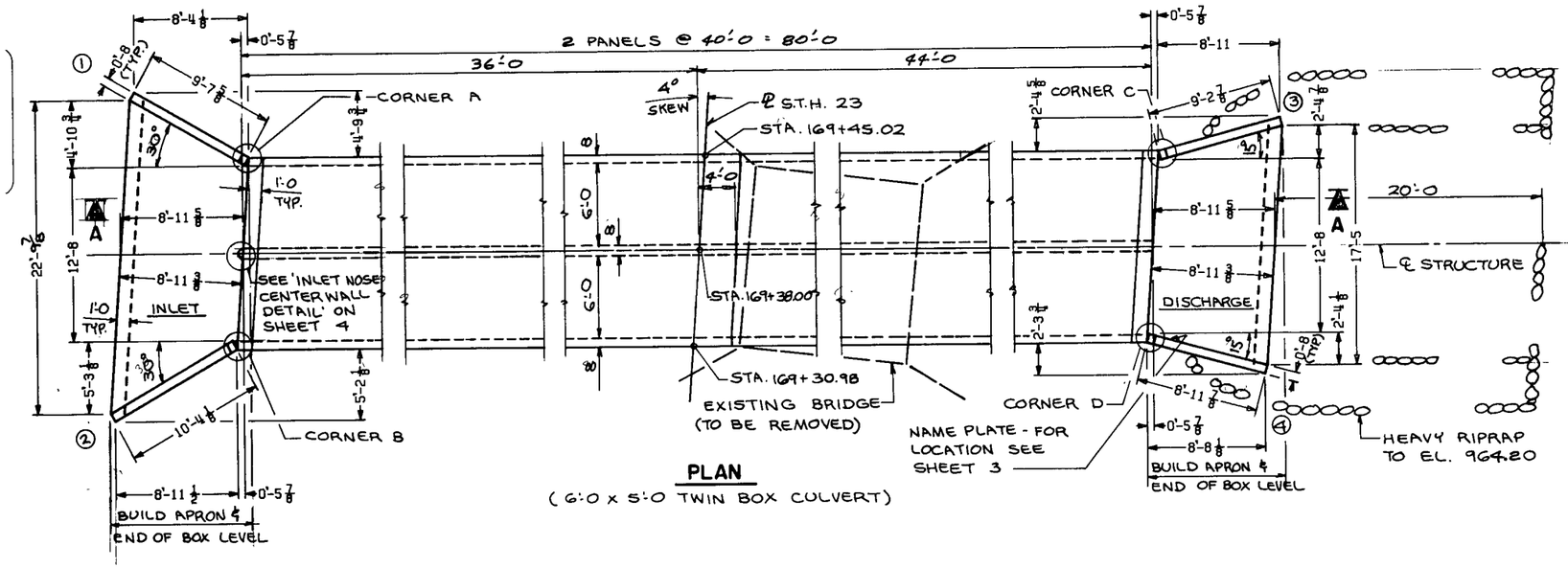
BENCH MARK

NO.	STATION	DESCRIPTION	ELEV.
19	169+45	TOP OF REBAR ON N.E. CORNER OF CONC. BOX CULVERT 5' RT.	967.53

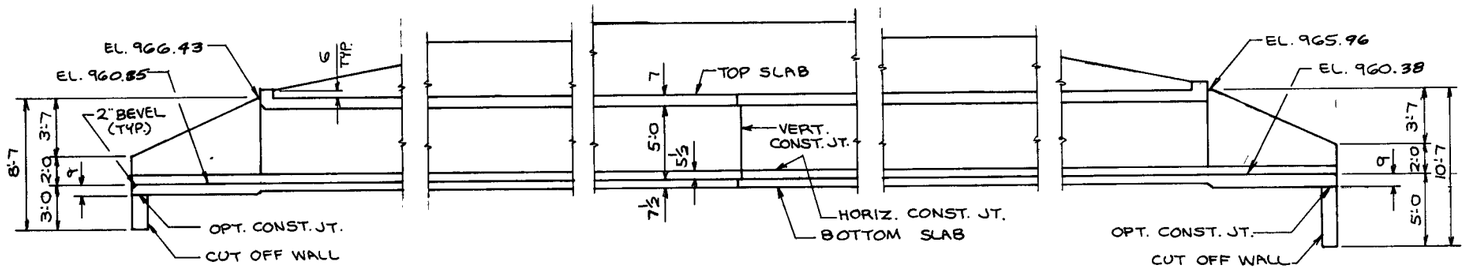
STATE PROJECT NUMBER	SHEET NO.
1442-1-73	8.0

GENERAL NOTES

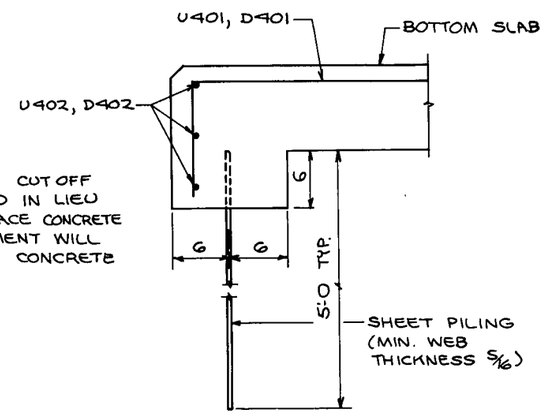
DRAWINGS SHALL NOT BE SCALED.
BAR STEEL REINFORCEMENT SHALL BE IMBEDDED 2" CLEAR UNLESS OTHERWISE SHOWN OR NOTED.
JOINT FILLER SHALL CONFORM TO A.A.S.H.O. DESIGNATION M153 OR M213.
THE UPPER LIMITS OF 'EXCAVATION FOR STRUCTURES' SHALL BE THE ORIGINAL GROUND LINE.
WITHIN THE LENGTH OF BOX, ALL SPACES EXCAVATED & NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH GRANULAR BACKFILL TO THE ELEVATION AND SECTION PRIOR TO EXCAVATION BUT NOT TO EXCEED THE ELEVATION OF THE TOP OF BOX.



PLAN
(6'-0 x 5'-0 TWIN BOX CULVERT)



INLET — SECTION A — DISCHARGE

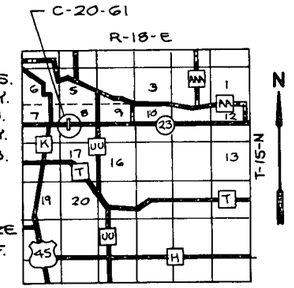


ALTERNATE CUT OFF WALL

NOTE:
THE ALTERNATE CUT OFF WALL MAY BE USED IN LIEU OF THE CAST-IN-PLACE CONCRETE CUT OFF WALLS. PAYMENT WILL BE BASED ON THE CONCRETE CUT OFF WALL.

TOTAL ESTIMATED QUANTITIES

BID ITEM		
REMOVING OLD BRIDGE	1	L.S.
CONCRETE MASONRY	98	C.Y.
HIGH STRENGTH BAR STEEL REINFORCEMENT	11,140	LB.
HEAVY RIPRAP	52	C.Y.
EXCAVATION FOR STRUCTURES	1	L.S.
NON-BID ITEM		
FILLER	3/4	SIZE
POLYVINYL CHLORIDE WATERSTOP	21	L.F.



LAYOUT

TRAFFIC DATA

A.D.T. —— 7,200 TWO WAY (1999)
R.D.S. —— 60 M.P.H.

DESIGN DATA

LIVE LOAD: HS 20
EARTH LOAD: DESIGN FOR 2.6 FT OF FILL.
ALLOWABLE DESIGN STRESSES:
CONCRETE MASONRY —— f'_c = 3,500 P.S.I.
BAR STEEL REINF., GRADE 60 - fy = 60,000 P.S.I.

HYDRAULIC DATA

- Q100 —— 385 C.F.S.
- VELOCITY —— 8 F.P.S.
- HIGH WATER —— EL. 965.90
- DRAINAGE AREA —— 3.06 SQ. MI.

LIST OF DRAWINGS

1. DETAILS —— X 59280
2. DETAILS —— X 59281
3. DETAILS —— X 59282
4. DETAILS —— X 59283
5. SUBSURFACE EXPLORATION —— X 59284

No	Date	Revision	By

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

STRUCTURE C-20-61

S.T.H. 23 OVER N. BRANCH TAYCHEEDAH CR.

County FOND DU LAC		Town/~~City/Village~~ EMPIRE	
Design Spec. A.A.S.H.O. '83		Load HS 20	Const. Spec 1981
Designed By COMP.	Design Checked COMP.	Drawn By B.W.	Plans Checked B.W.

Approved Stanley W. Woods, Chief Bridge Engineer — 3-17-87 Date

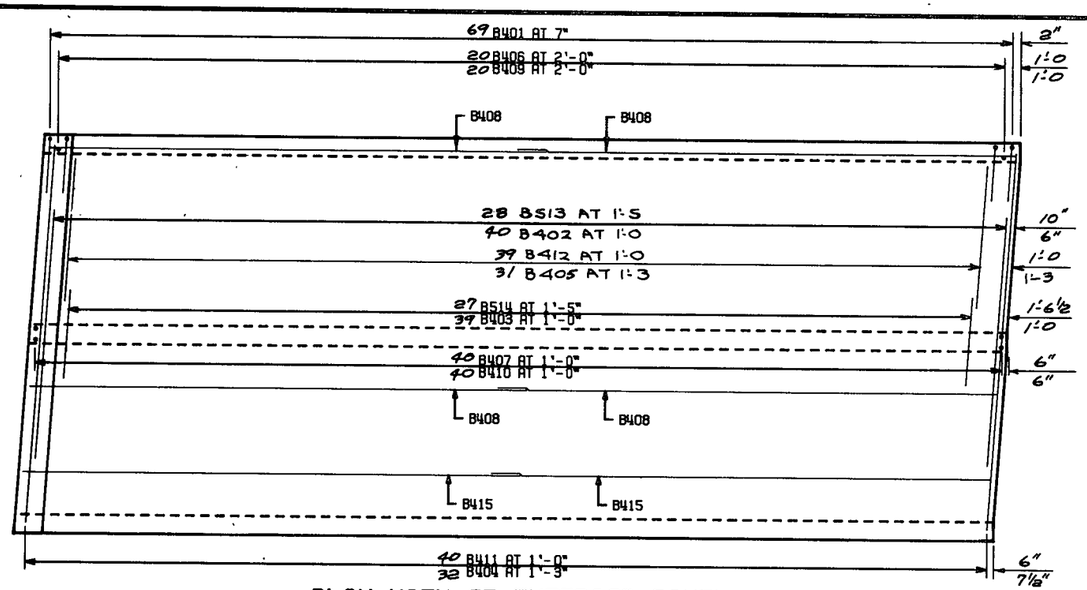
DETAILS

SHEET 1 OF 5
X 59280

STRUCTPLAN

Form E-B-11-69

STATE PROJECT NUMBER	SHEET NO.
1442-1-73	8.1



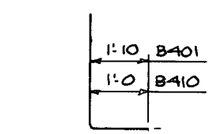
PLAN VIEW OF EXTERIOR PANEL

USE IDENTICAL STEEL IN OTHER PANEL

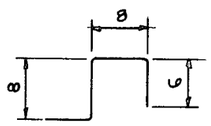
BOX- BILL OF BARS 10,090

THE FIRST OR FIRST AND SECOND DIGIT OF THE MARK SIGNIFIES THE BAR SIZE. THE DIMENSION IN THE BENT COLUMN IS THE OUT TO OUT HORIZONTAL LEG OF A "L" SHAPED BAR.

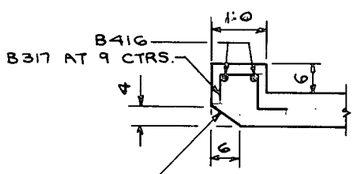
MARK	NUMBER REQ'D.	LENGTH	BENT	CUTTING DIAGRAM	LOCATION
B401	552	5-7	1-10	NO	TOP & BOT. SLAB & SIDES
B402	80	8-9	NO	NO	BOT. SLAB - TRANS.
B403	78	3-1	NO	NO	" " "
B404	64	13-5	NO	NO	" " "
B405	124	5-0	NO	NO	" " "
B406	80	2-0	NO	NO	SIDES - VERT.
B407	160	2-0	NO	NO	INT. WALL - VERT.
B408	192	20'-4	NO	NO	BOT. SLAB, SIDES & INT. WALL-HORIZ.
B409	80	4-10	NO	NO	SIDES - VERT.
B410	160	5-10	1-0	NO	INT. WALL - VERT.
B411	80	13-5	NO	NO	TOP SLAB - TRANS.
B412	156	5-0	NO	NO	" " "
B513	56	8-9	NO	NO	" " "
B514	54	3-1	NO	NO	" " "
B415	32	20'-4	NO	NO	" " - LONGIT.
B416	4	13-6	NO	NO	HEADER
B317	38	2-8	YES	NO	"
B518	42	4-0	NO	NO	VERT. CONST. JT.

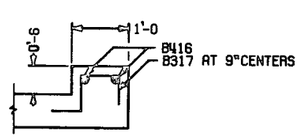


B 401, B 410

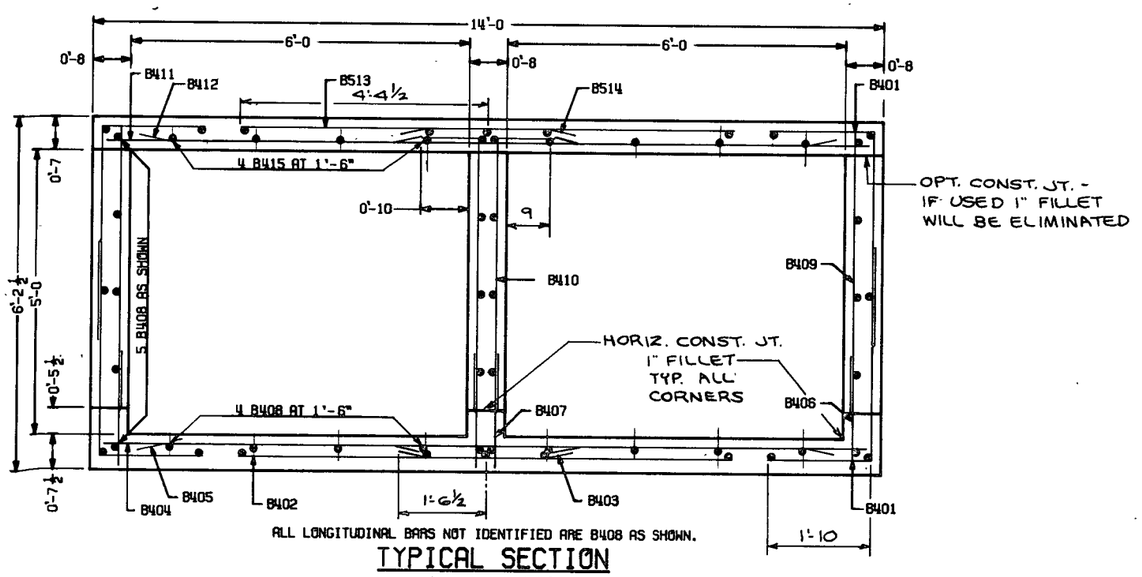


B 317





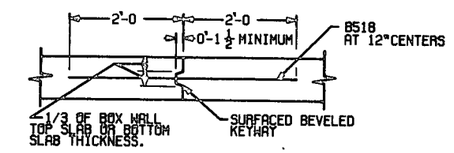
SECTION THRU TOP HEADER



ALL LONGITUDINAL BARS NOT IDENTIFIED ARE B408 AS SHOWN.

TYPICAL SECTION THRU BOX

(AT RT. ANGLES TO ℄ STRUCTURE)



VERTICAL CONSTRUCTION JOINT

No.	Date	Revision	By

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

STRUCTURE C-20-61

Const. Spec. 1901	Drawn By D.W.	Plans Checked B.W.

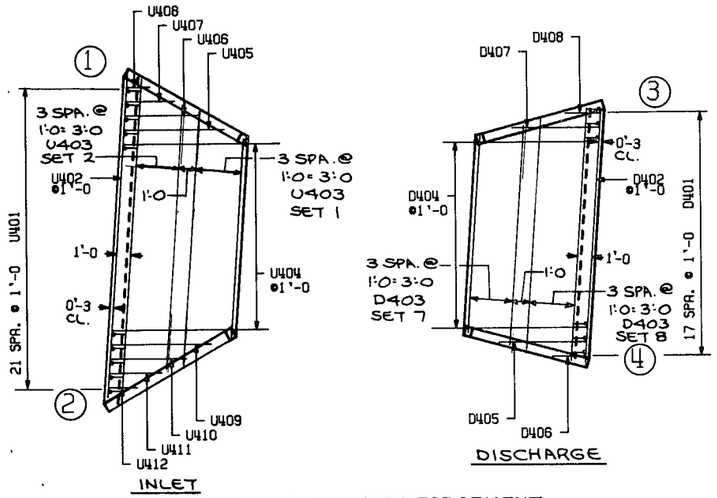
DETAILS

SHEET 2 OF 5

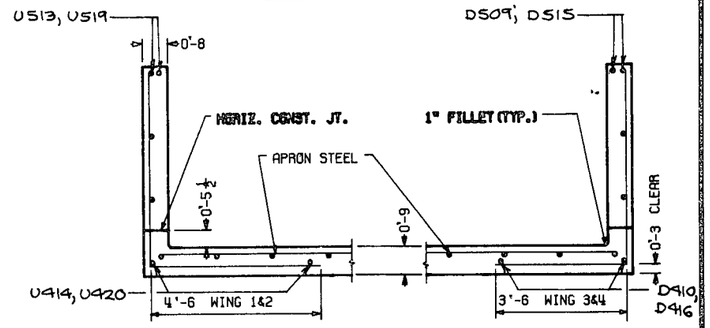
X 59281

Form E-B-12-69

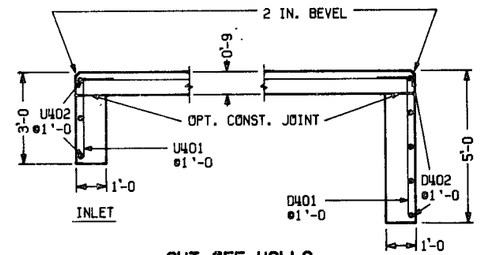
STATE PROJECT NUMBER	SHEET NO.
1442-1-73	8.2



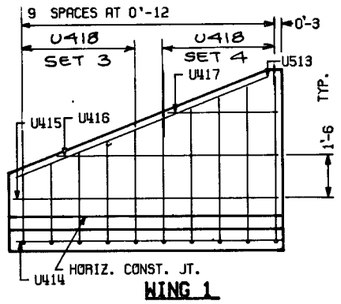
APRON REINFORCEMENT



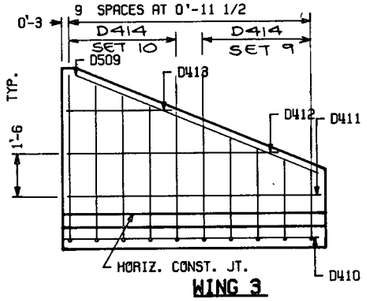
SECTION THRU WINGS
AT RIGHT ANGLES TO WING WALLS



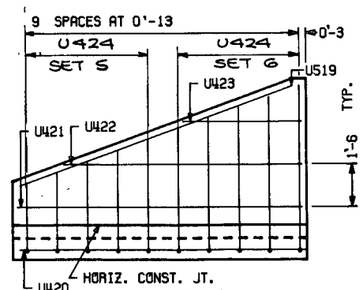
CUT-OFF WALLS
SECTION THRU THE WALLS



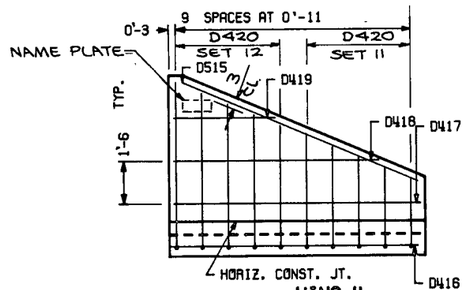
WING 1



WING 3



WING 2



WING 4

No.	Date	Revision	By

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

STRUCTURE C-20-61

Const. Spec.	Drawn By	Plans Checked
1981	DB	B W.

DETAILS

SHEET 3 OF 5

X 59282

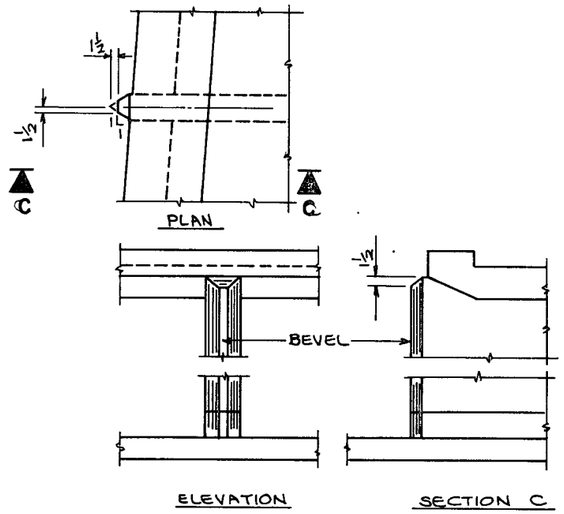
Form E-B-12-69

STATE PROJECT NUMBER	SHEET NO.
1442-1-73	8.3

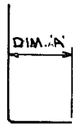
BILL OF BARS - APRONS 1,050#

MARK	NO.	LENGTH	BENT	CUT	LOCATION
U401	22	3 -6	1 -0		INLET APRON AND CUTOFF WALL
U402	3	22-8			INLET APRON AND CUTOFF WALL
U403	4	36-9		⊠	" APRON - SET 1&2
U404	14	11-0			" APRON
U405	1	7 -0			" APRON
U406	1	5 -3			" APRON
U407	1	3 -5			" APRON
U408	1	1 -7			" APRON
U409	1	7 -0			" APRON
U410	1	5 -4			" APRON
U411	1	3 -8			" APRON
U412	1	2 -0			" APRON
U513	2	9 -10			WING 1 -HORIZONTAL
U414	2	9 -11			WING " -HORIZONTAL-APRON
U415	1	9 -4			WING " -HORIZONTAL
U416	1	7 -9			WING " -HORIZONTAL
U417	1	3 -10			WING " -HORIZONTAL
U418	5	17-1	4 -6	⊠	WING " -VERTICAL - SET 3&4
U519	2	10-6			WING 2 -HORIZONTAL
U420	2	10-7			WING " -HORIZONTAL-APRON
U421	1	10-0			WING " -HORIZONTAL
U422	1	8 -4			WING " -HORIZONTAL
U423	1	4 -2			WING " -HORIZONTAL
U424	5	17-1	4 -6	⊠	WING " -VERTICAL - SET 5&6
D401	18	5 -6	1 -0		OUTLET APRON AND CUTOFF WALL
D402	5	17-8			OUTLET APRON AND CUTOFF WALL
D403	4	31-6		⊠	" APRON - SET 7&8
D404	14	11-0			" APRON
D405	1	6 -2			" APRON
D406	1	2 -4			" APRON
D407	1	6 -2			" APRON
D408	1	2 -6			" APRON
D509	2	9 -5			WING 3 -HORIZONTAL
D410	2	9 -6			WING " -HORIZONTAL-APRON
D411	1	8 -11			WING " -HORIZONTAL
D412	1	7 -5			WING " -HORIZONTAL
D413	1	3 -8			WING " -HORIZONTAL
D414	5	15-1	3 -6	⊠	WING " -VERTICAL - SET 9&10
D515	2	9 -3			WING 4 -HORIZONTAL
D416	2	9 -3			WING " -HORIZONTAL-APRON
D417	1	8 -8			WING " -HORIZONTAL
D418	1	7 -2			WING " -HORIZONTAL
D419	1	3 -7			WING " -HORIZONTAL
D420	5	15-1	3 -6	⊠	WING " -VERTICAL - SET 11&12

NOTE:
FOR REINF. NOTES SEE SHEET 2.

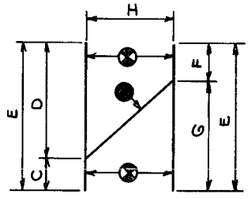


INLET NOSE CENTERWALL DETAILS



MARK	DIM.'A'
U401	1'-0
U418	4'-6
U424	4'-6
D401	1'-0
D414	3'-6
D420	3'-6

MARK		C	D	E	F	G	H	SETS REQ'D.
U403	SET 1	14-0	——	36-9	——	17-9	4	1
	SET 2	——	22-9		19-0	——		1
U418	SET 3	6-9	——	17-1	——	8-4	5	1
	SET 4	——	10-4		8-9	——		1
U424	SET 5	6-9	——	17-1	——	8-4	5	1
	SET 6	——	10-4		8-9	——		1
D403	SET 7	13-9	——	31-6	——	15-6	4	1
	SET 8	——	17-9		16-0	——		1
D414	SET 9	5-9	——	15-1	——	7-4	5	1
	SET 10	——	9-4		7-9	——		1
D420	SET 11	5-9	——	15-1	——	7-4	5	1
	SET 12	——	9-4		7-9	——		1

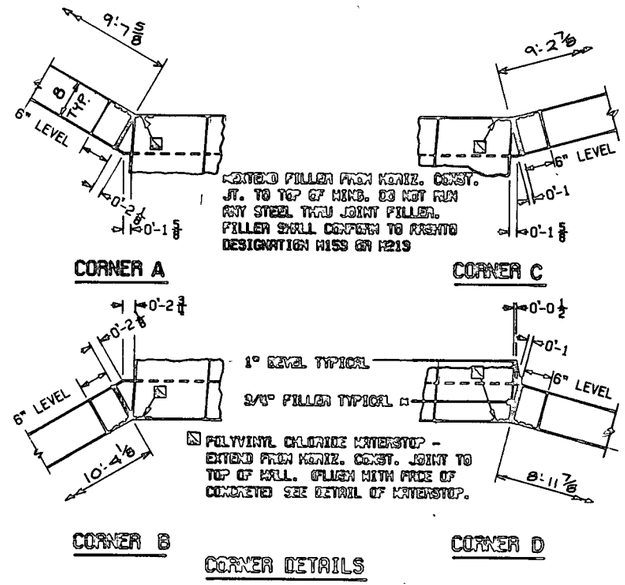


H IS NUMBER OF BARS BEFORE CUTTING.

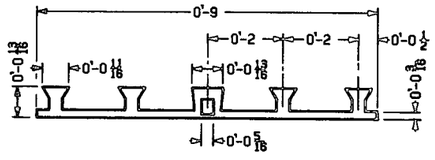
CUTTING DIAGRAM

⊠ BUNDLE AND MARK CUT BARS WITH BAR AND SET NUMBER. BENT BARS USED IN A CUTTING DIAGRAM SHALL BE BENT AFTER CUTTING.

● MARK AND CUT ALL BARS ALONG THIS LINE. MAKE ALL CUTS NORMAL TO BAR AXIS.



CORNER DETAILS



POLYVINYL CHLORIDE WATERSTOP

No.	Date	Revision	By

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

STRUCTURE C-20-61

Const. Spec.	Drawn By	Plans Checked
1901	DB	B.W.

DETAILS

SHEET 4 OF 5

X 59283

Form E-B-12-69

STATE PROJECT NUMBER	SHEET NO.
1442-00-[redacted]73	8.4

ABBREVIATIONS

F — Fine M — Medium C — Coarse
Ws — Weathered So — Sound

MATERIAL SYMBOLS

Topsoil, Silt, Sandstone, Sand, Peat, Limestone, Gravel, Clay, Igneous Rock

LEGEND OF PROBING

95/6=95 Blows for 6" Penetration
Probing taken with a 350# wt Falling 18" on a 2" O. D. Point.

Probing No.
Sta.
Elevation
7 Average Blows Per Foot
Refusal 95/6

LEGEND OF BORING

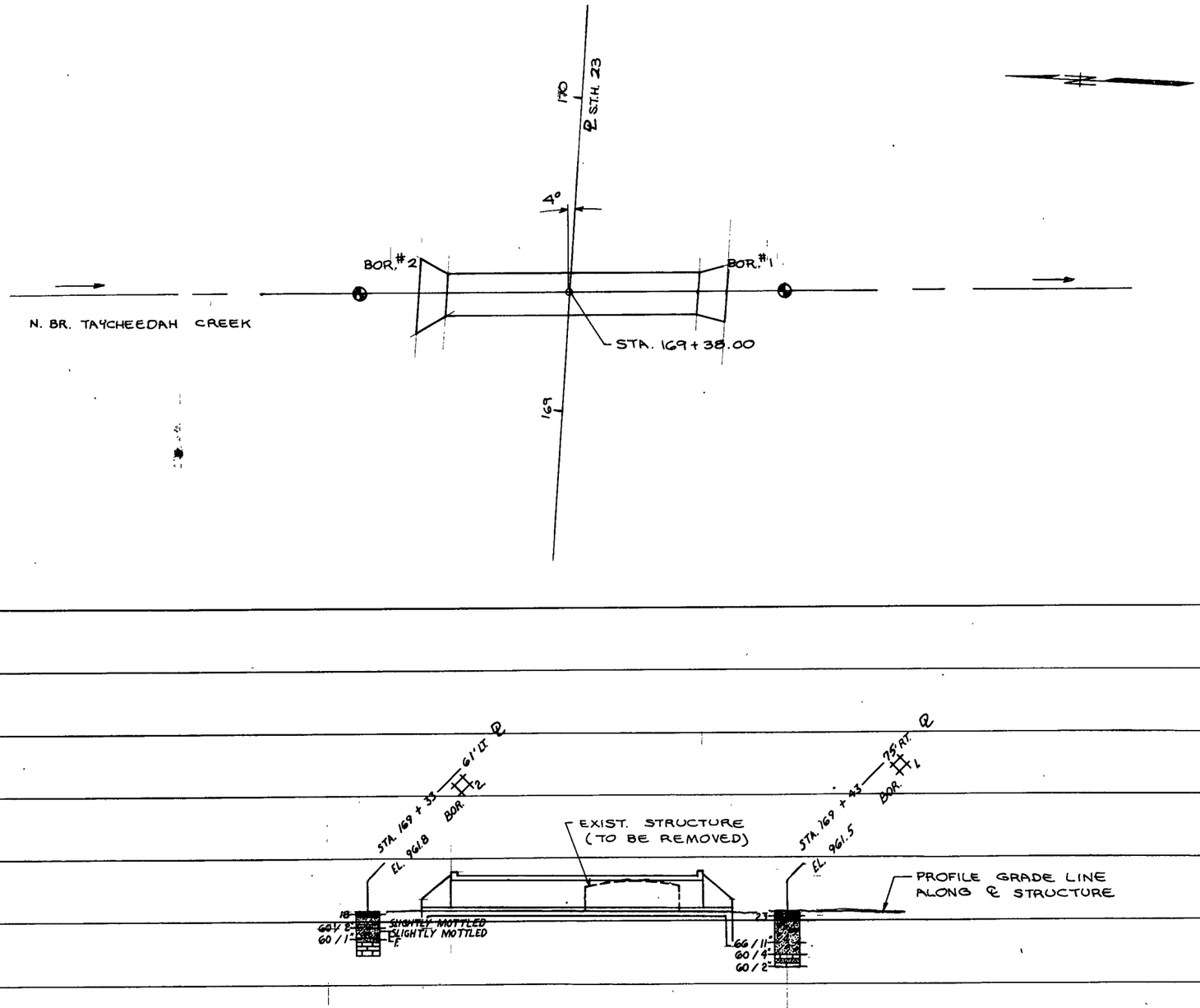
Unconfined Strength → 7.7
Blows Per Ft. Using 140# Wt. Falling 30"
Wash Sample
Shelby Tube — S T
Ground Water Elevation
No Ground Water Observed Above This Elevation

Boring No.
Elev
Sta.
7
Sandy Gravel
F
Boulders or Cobbles
Sand
Silty Clay
So
Limestone

Unless otherwise specified, the blows per foot at the locations indicated are based on driving a 2" O. D. x 1.4" I. D. split spoon sampler with a 140# hammer having a free fall of 30". The blow count is taken in undisturbed soil immediately below a cased or open hole eliminating side friction on the drive pipe.

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

To obtain relative data concerning the character of material in and upon which the foundation might be built, borings and/or soundings were made at points approximately as indicated on this drawing. The data presented herein represents the findings of the subsurface explorations made. However, because the depths investigated are limited and the area of the borings and/or soundings is very small in relation to the entire area the Division of Highways does not warrant conditions below the depths investigated or that the classification of material encountered in these investigations is necessarily typical of the entire site.



No.	Date	Revision	By

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

STRUCTURE C-20-61

Const Spec	1981	Drawn By	D.C.H./DB	Plans Checked	B.W.

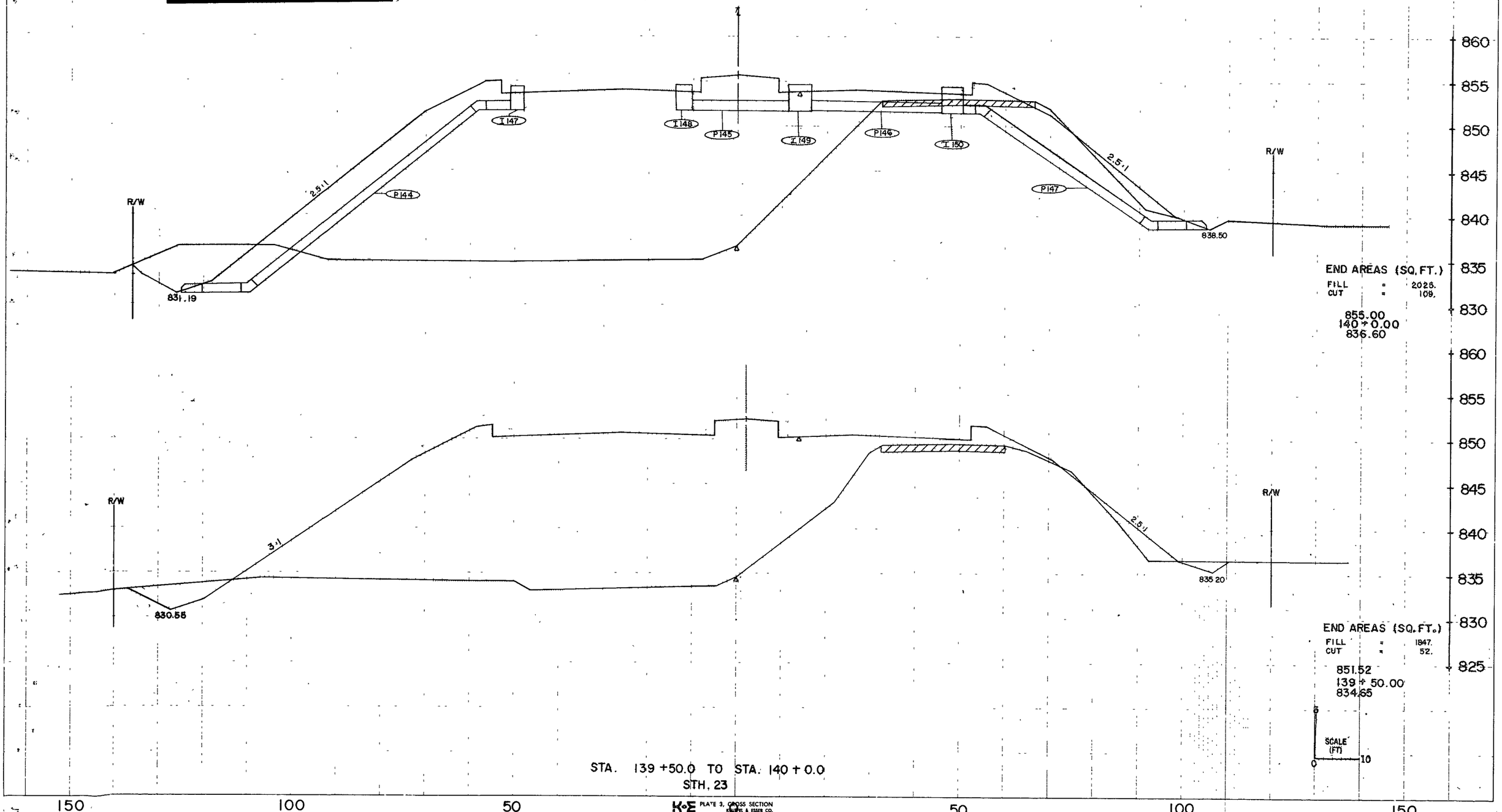
SUBSURFACE EXPLORATION

SHEET 5 OF 5

X 59284

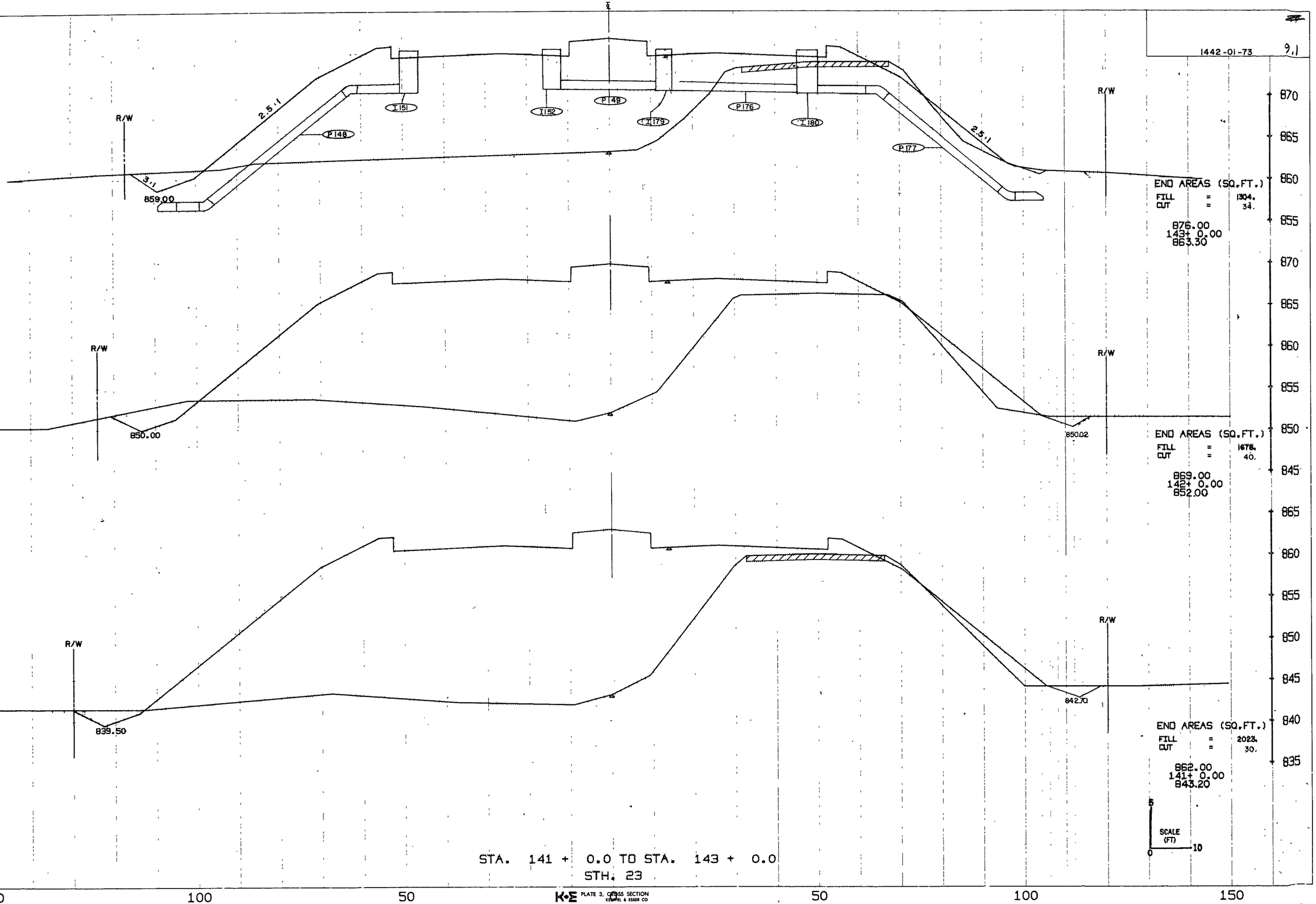
NO. AREAS CHECKED

NO. AREAS CHECKED



K+E PLATE 3, CROSS SECTION KEUFFEL & ESSER CO.

1442-01-73 9.1

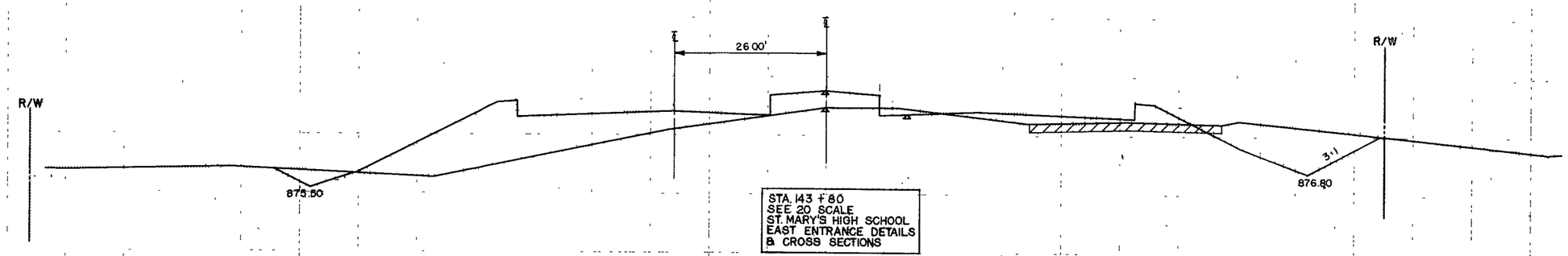


STA. 141 + 0.0 TO STA. 143 + 0.0
STH. 23

NOTE BOOK	TEMPLATE AREAS
NO.	AREAS CHECKED

1442-01-73 9,2

NOTE BOOK
NO.
PLATE
AREAS
AREAS CHECKED



885
880
875
870

END AREAS (SQ.FT.)
FILL = 226.
CUT = 92.

883.00
144+ 0.00
882.40

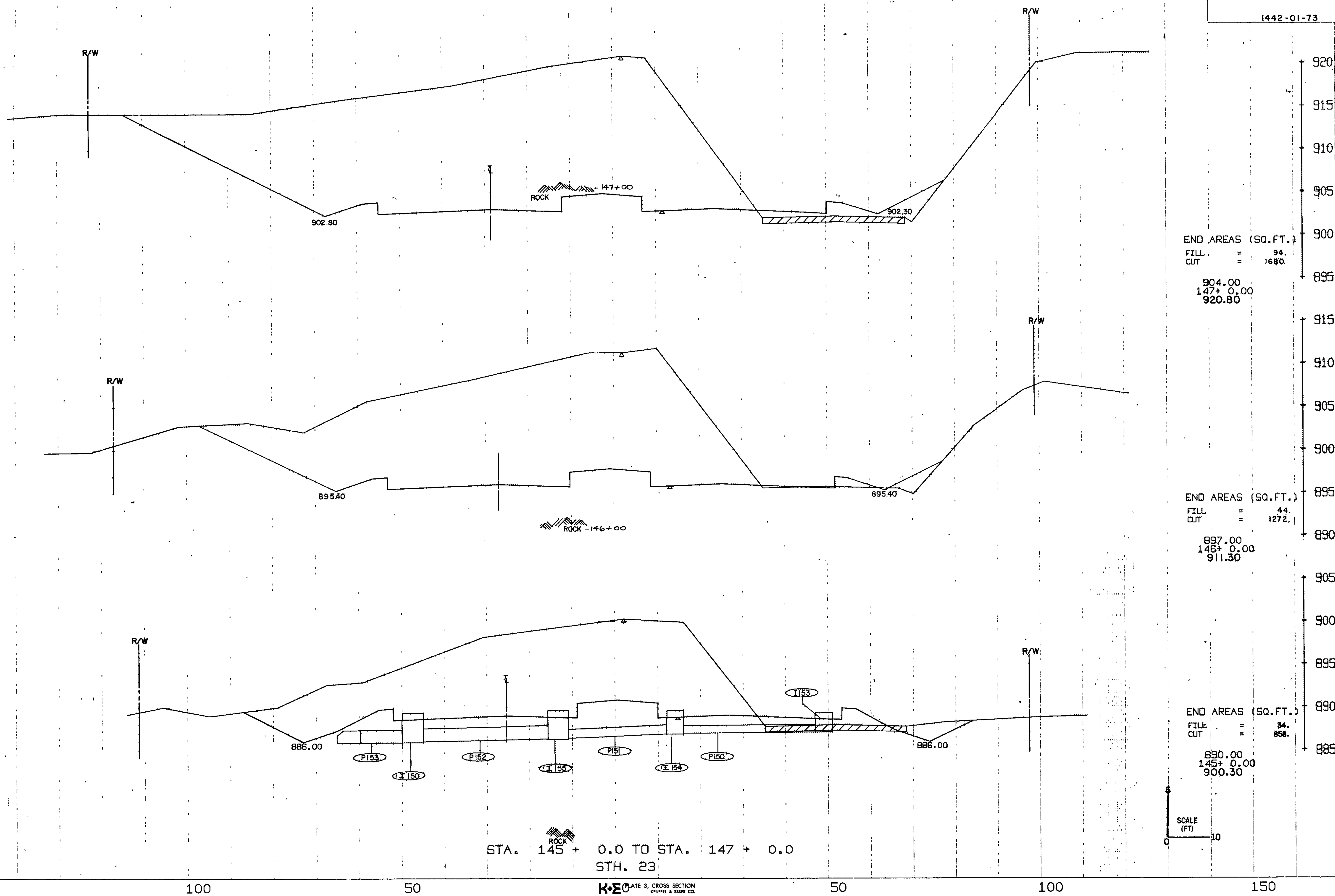
SCALE (FT)
0 5 10

STA. 144 + 0.0 TO STA. 144 + 0.0
STH. 23

150 100 50 50 100 150

K+E PLATE 3, CROSS SECTION
KEUFFEL & ESSER CO.

1442-01-73 93



STA. 145 + 0.0 TO STA. 147 + 0.0
STH. 23

K•E PLATE 3, CROSS SECTION KEUFFEL & ESSER CO.

1442-01-73 9.4

AREAS
AREAS CHECKED
NO.

R/W
916.30
ROCK - 149+00
R/W
916.30

END AREAS (SQ.FT.)
FILL = 76.
CUT = 1619.
918.00
149+ 0.00
933.40

ROCK - STA 149+00
ROCK
R/W
R/W
2.5:1
905.99
ROCK
ROCK - 148+00
909.40
ROCK
P157
I160
P156
I159
P155
I158
P154
I157

END AREAS (SQ.FT.)
FILL = 44.
CUT = 2230.
911.00
148+ 0.00
929.50

940
935
930
925
920
915
910
935
930
925
920
915
910
905

SCALE (FT)
5
0
10

STA. 148 + 0.0 TO STA. 149 + 0.0
STH. 23

150 100 50 50 100 150

K•E PLATE 3, CROSS SECTION KEUFFEL & ESSER CO

1442-01-73

9,5

R/W

936.20

936.20

R/W

END AREAS (SQ.FT.)
FILL = 77.
CUT = 1902.

937.71
152+ 0.00
950.80

950
945
940
935
930
925
920

R/W

ROCK - STA 152+00

3:1 AHEAD
2.5:1 BACK

930.00

927.59

P159

I 162

P158

I 161

930.00

R/W

END AREAS (SQ.FT.)
FILL = 60.
CUT = 1828

931.60
151+ 0.00
944.20

ROCK - STA 151+00

R/W

3:1

923.30

923.30

R/W

END AREAS (SQ.FT.)
FILL = 81.
CUT = 1704.

924.98
150+ 0.00
939.00

ROCK - 150+00

SCALE (FT)
0 5 10

STA. 150 + 0.0 TO STA. 152 + 0.0
STH. 23

150 100 50 50 100 150

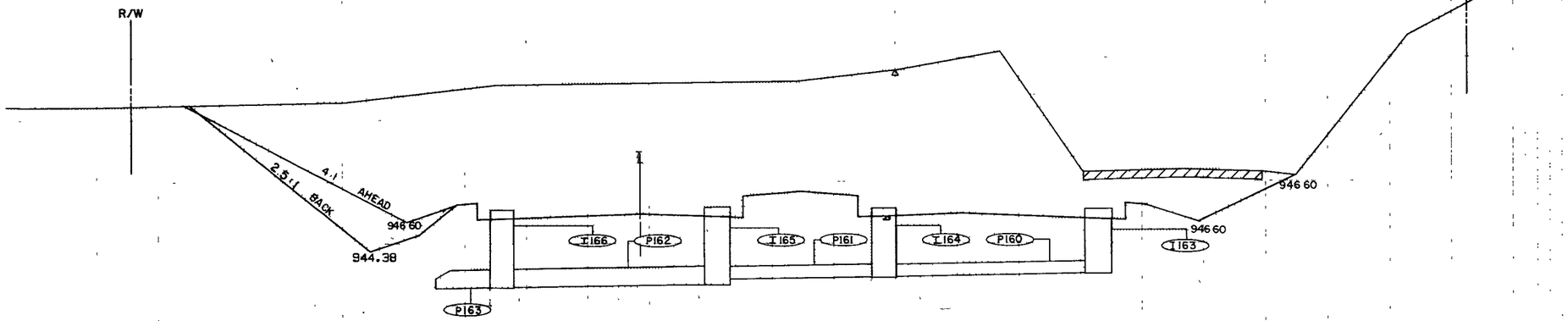
K+E PLATE 3, CROSS SECTION
KEUFFEL & ESSER CO

AREAS
AREAS CHECKED
NO.

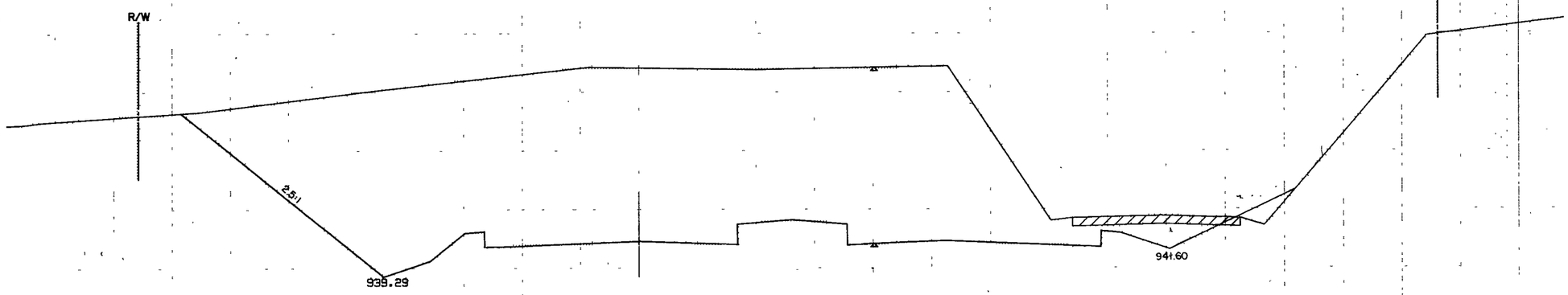
1442-01-73

9.6

NOTE BOOK AREAS
AREAS CHECKED
NO.



NOTE
APPROXIMATE ROCK
ELEVATION 925.0



END AREAS (SQ.FT.)
FILL = 5.
CUT = 1482
948.38
154+ 0.00
959.00

END AREAS (SQ.FT.)
FILL = 30.
CUT = 1868.
943.30
153+ 0.00
957.10

970
965
960
955
950
945
940
935

SCALE (FT)
5
0
10

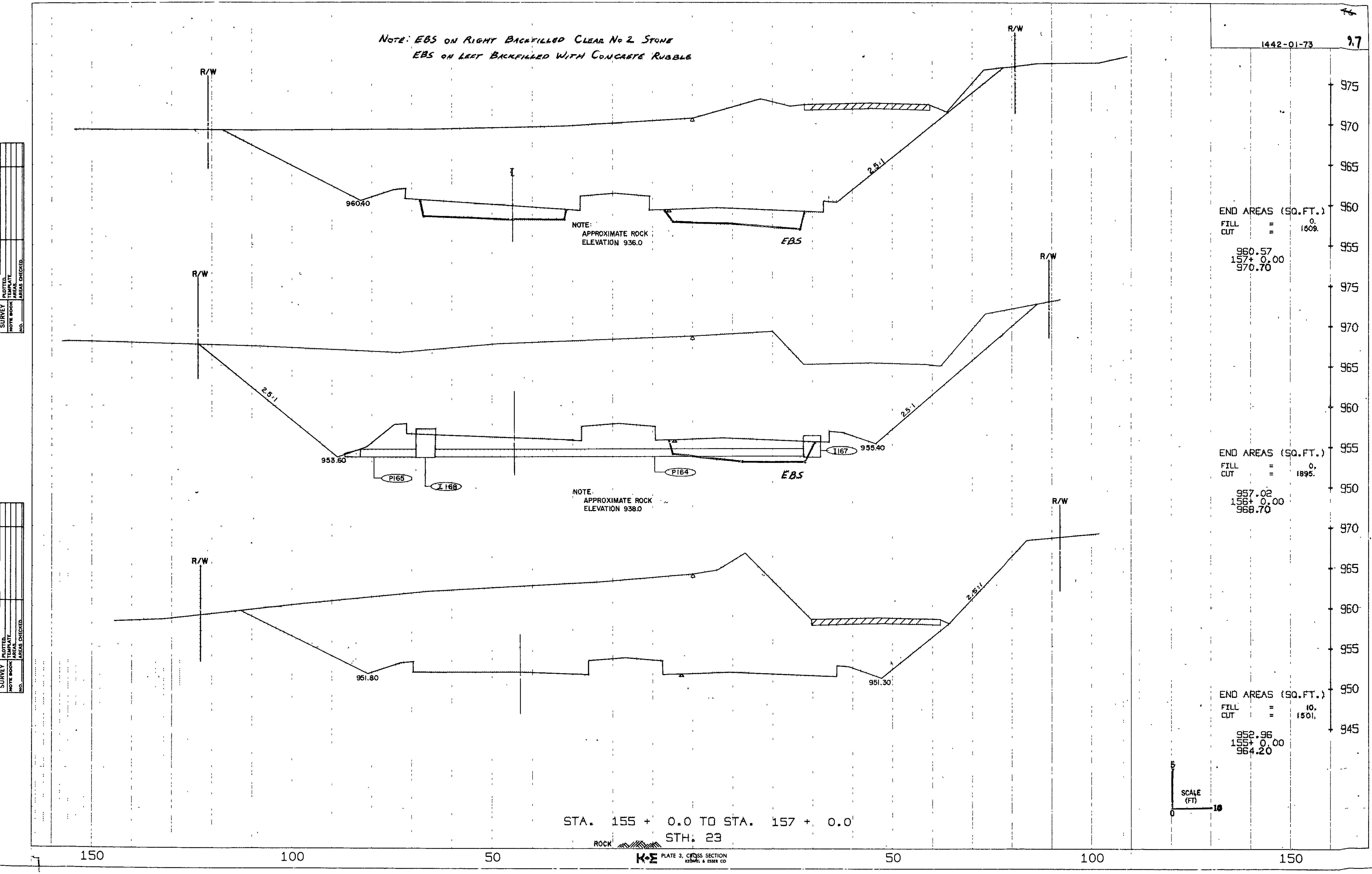
STA. 153+00

STA. 153 + 0.0 TO STA. 154 + 0.0

ROCK STH. 23

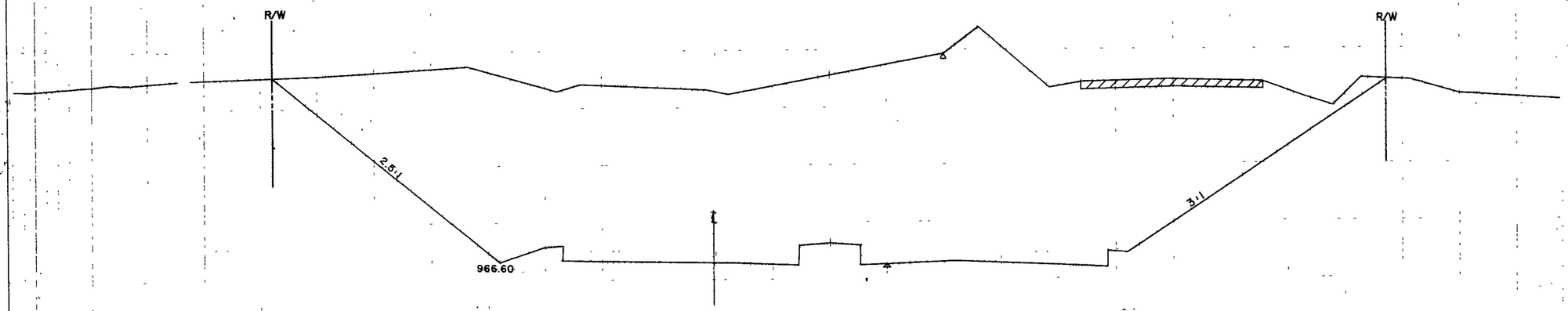
150 100 50 50 100 150

K·E PLATE 3, CROSS SECTION
KEUFFEL & ESSER CO.



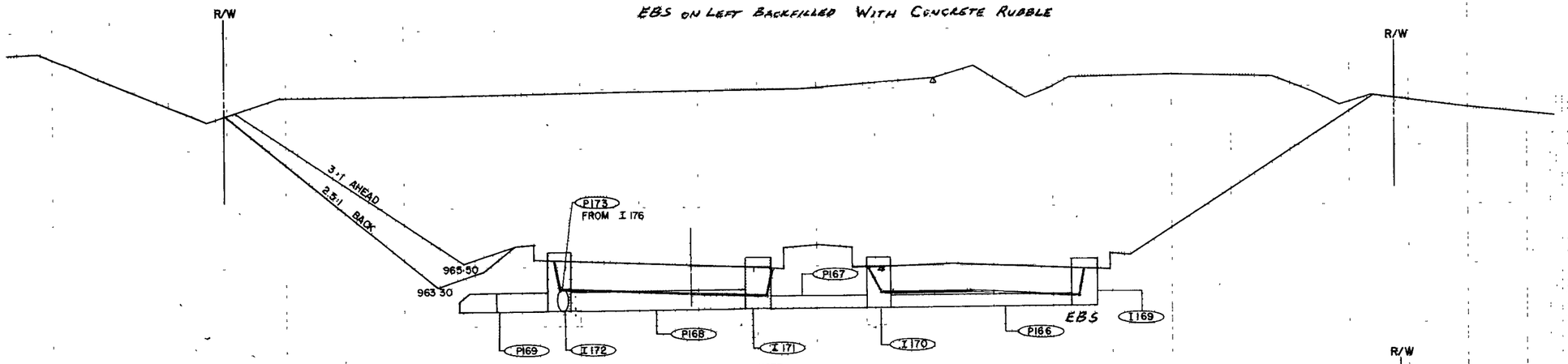
1442-01-73
97
NOTE: EBS ON RIGHT BACKFILLED CLEAR No 2 STONE
EBS ON LEFT BACKFILLED WITH CONCRETE RUBBLE
R/W
960.40
NOTE:
APPROXIMATE ROCK
ELEVATION 936.0
EBS
2.5:1
END AREAS (SQ.FT.)
FILL = 0.
CUT = 1509.
960.57
157+ 0.00
970.70
958.60
P165
I 168
P164
I167
955.40
NOTE.
APPROXIMATE ROCK
ELEVATION 938.0
END AREAS (SQ.FT.)
FILL = 0.
CUT = 1895.
957.02
156+ 0.00
968.70
951.80
951.30
END AREAS (SQ.FT.)
FILL = 10.
CUT = 1501.
952.96
155+ 0.00
964.20
975
970
965
960
955
950
945
SCALE (FT)
STA. 155 + 0.0 TO STA. 157 + 0.0
STH. 23
ROCK
150
100
50
SURVEY
PLOTTED
NOTE BOOK
TEMPLATE
AREAS
NO.
AREAS CHECKED
K+E PLATE 3, CROSS SECTION KEUFFEL & ESSER CO

1442-01-73 9.8



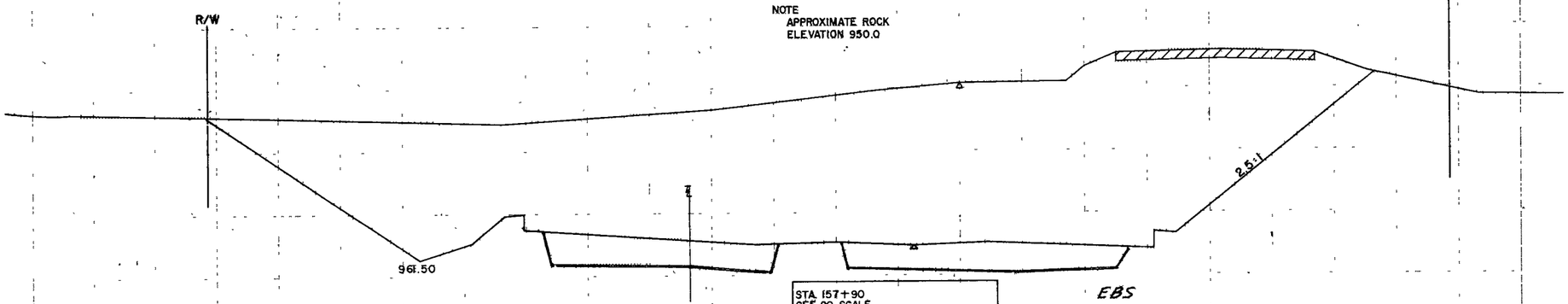
NOTE: EBS ON RIGHT BACKFILLED CLEAR No. 2 STONE
EBS ON LEFT BACKFILLED WITH CONCRETE RUBBLE

END AREAS (SQ.FT.)
FILL = 0.
CUT = 2395.
967.51
159+65.00
984.70



NOTE
APPROXIMATE ROCK
ELEVATION 950.0

END AREAS (SQ.FT.)
FILL = 0.
CUT = 2372.
966.14
159+ 0.00
980.90



STA 157+90
SEE 20 SCALE
NAZARETH HEIGHTS INFIRMARY
DRIVE DETAILS & CROSS SECTIONS

END AREAS (SQ.FT.)
FILL = 0.
CUT = 1803.
963.61
158+ 0.00
975.40

SCALE (FT)
0 5 10

ROCK

STA. 158 + 0.0 TO STA. 159 + 65.0
STH. 23

150 100 50 0 50 100 150

980 975 970 965 960 985 980 975 970 965 960 980 975 970 965 960 955

K-E PLATE 3, CROSS SECTION KEUFFEL & ESSER CO

NOTE BOOK TEMPLATE AREAS AREAS CHECKED NO.

1442-01-73 9.9

NOTE: EBS ON RIGHT BACKFILLED CLEAR No 2 STONE
EBS ON LEFT BACKFILLED WITH CONCRETE RUBBLE

R/W
2.5:1
968.50
EBS
R/W

END AREAS (SQ.FT.)
FILL = 0.
CUT = 1701.
970.66
162+ 0.00
982.10

R/W
R/W
3.5:1
TO I 172
967.7
P173
I 176
P172
I 175
P171
I 174
P170
I 173
EBS

END AREAS (SQ.FT.)
FILL = 0.
CUT = 1988
969.66
161+ 0.00
982.80

R/W
R/W
2.5:1
967.00
3:1
EBS

END AREAS (SQ.FT.)
FILL = 0.
CUT = 2249.
968.15
160+ 0.00
982.90

985 980 975 970 965 990 985 980 975 970 965 970 965 960

SCALE (FT) 0 5 10

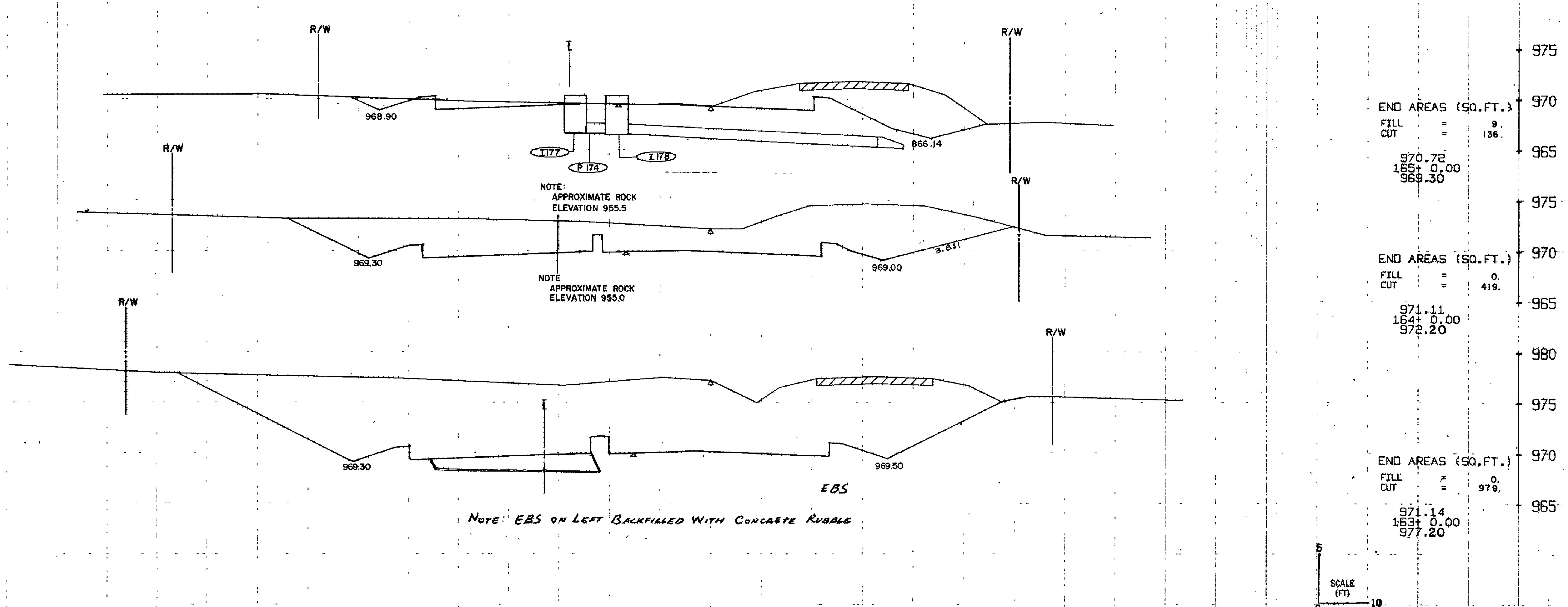
STA. 160 + 0.0 TO STA. 162 + 0.0
STH. 23

150 100 50 50 100 150

K+E PLATE 3, CROSS SECTION KEUFFEL & ESSER CO.

SURVEY PLOTTED TRIANGULATE NOTE BOOK AREAS NO. AREAS CHECKED

1442-01-73 9,10

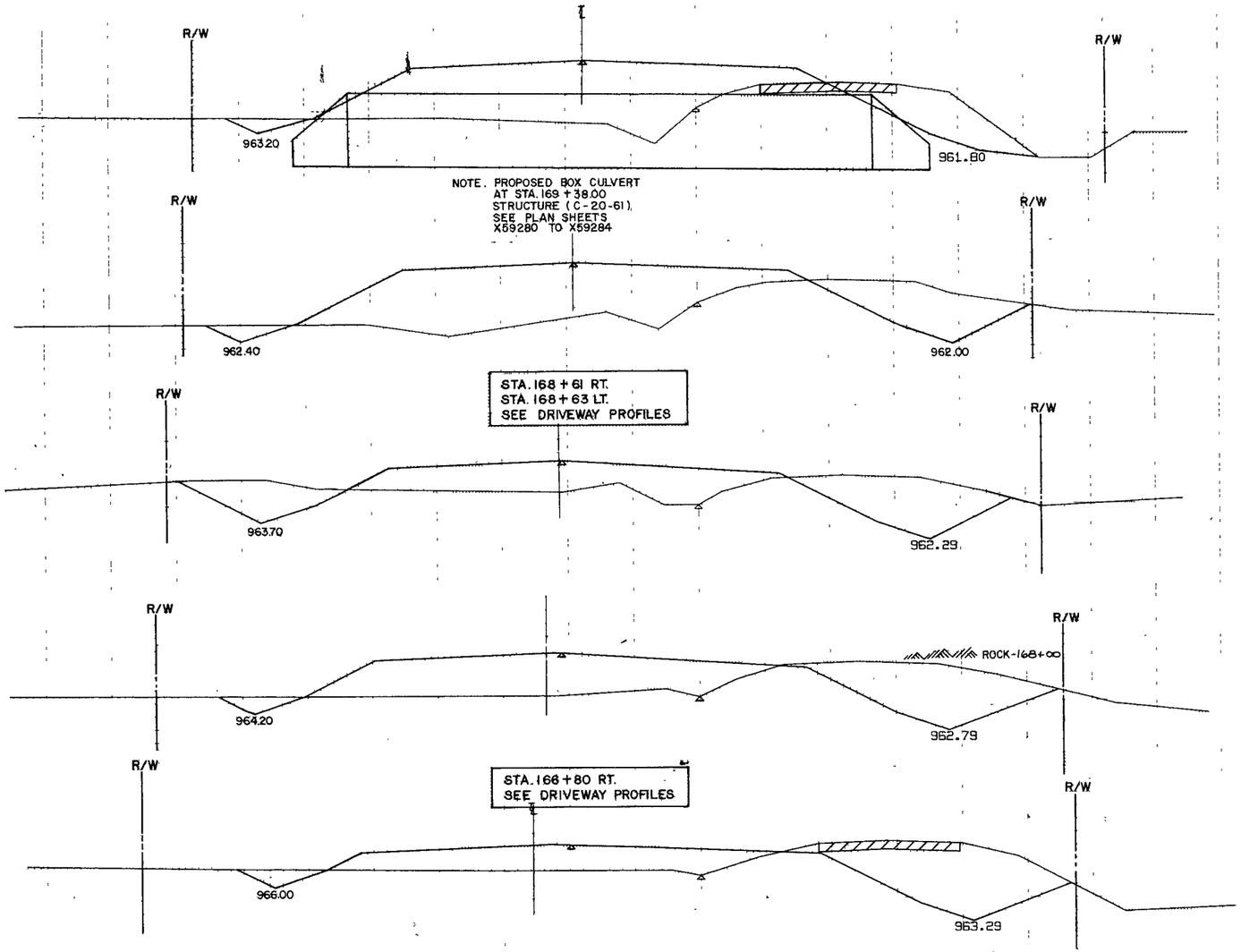


STA. 163 + 0.0 TO STA. 165 + 0.0

STH. 23

150 100 50 50 100 150

1442-01-13 9.11



END AREAS (SQ.FT.)
FILL = 295.
CUT = 74.
969.98
169+70.00
965.20

END AREAS (SQ.FT.)
FILL = 264.
CUT = 95.
969.63
169+ 0.00
965.40

END AREAS (SQ.FT.)
FILL = 131.
CUT = 145.
969.55
168+ 0.00
965.00

END AREAS (SQ.FT.)
FILL = 161.
CUT = 126.
969.90
167+ 0.00
965.40

END AREAS (SQ.FT.)
FILL = 105.
CUT = 149.
970.31
166+ 0.00
966.80

965 960 970 965 960 970 965 960 970 965 960

SCALE (FT) 0 10

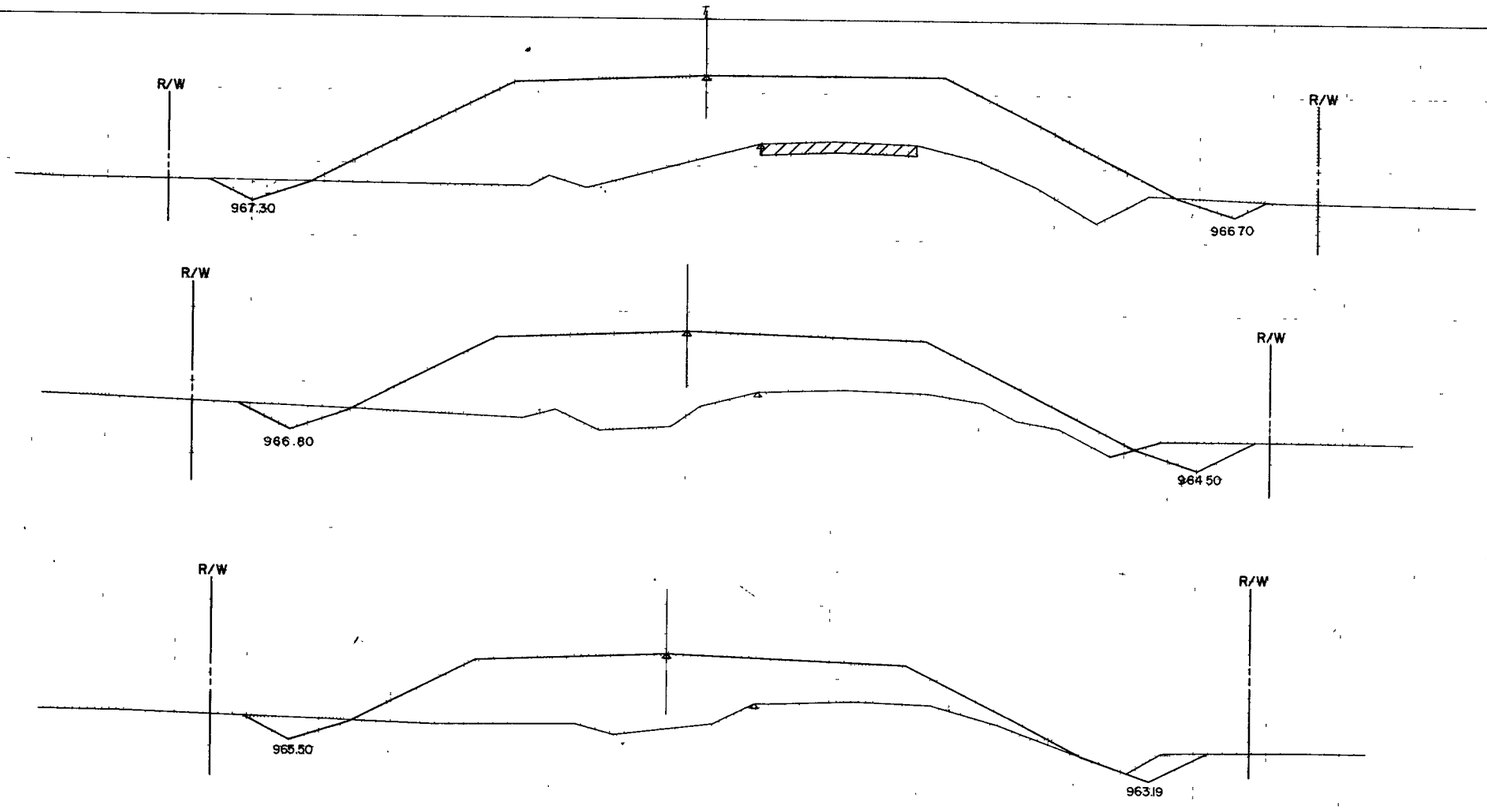
STA. 166 + 0.0 TO STA. 169 + 70.0
STH 23

150 100 50 50 100 150

K+E PLATE 3, CROSS SECTION KEUFFEL & ESSER CO.

NOTE BOOK | TEMPLATE AREAS | AREAS CHECKED | NO.

PLOTTED | TEMPLATE | AREAS | AREAS CHECKED | NOTE BOOK | NO.



END AREAS (SQ.FT.)
FILL = 547.
CUT = 18.
977.40
174+ 0.00
971.60

END AREAS (SQ.FT.)
FILL = 385.
CUT = 28.
974.87
173+ 0.00
969.66

END AREAS (SQ.FT.)
FILL = 301.
CUT = 16.
972.82
172+ 0.00
968.30

END AREAS (SQ.FT.)
FILL = 222.
CUT = 43.
971.27
171+ 0.00
968.50

END AREAS (SQ.FT.)
FILL = 181.
CUT = 75.
970.20
170+ 0.00
966.00

970 965 975 970 965 960 975 970 965 960 975 970 965 960

SCALE (FT) 5 0 10

STA. 170 + 0.0 TO STA. 174 + 0.0
STH 23

150 100 50 50 100 150

K&E PLATE 3, CROSS SECTION KEUFFEL & ESSER CO.

AREAS CHECKED
INIT.

STA. 177+05 RT
SEE DRIVEWAY PROFILES

R/W

MATCH LINE STA. 51+00.00
OELKE DRIVE

982.50

979.00

R/W

STA 50+65.00
1-42" x 84"
CP CL. III REQ'D
3° R H.F

978.00

R/W

R/W

973.00

971.30

R/W

R/W

6:1
969.00

968.70

2.5:1

ROCK

END AREAS (SQ.FT.)
FILL = 558.
CUT = 25.

991.06
177+70.00
985.70

END AREAS (SQ.FT.)
FILL = 460.
CUT = 15

987.96
177+ 0.00
982.50

END AREAS (SQ.FT.)
FILL = 775.
CUT = 21.

983.95
176+ 0.00
977.30

END AREAS (SQ.FT.)
FILL = 727.
CUT = 20.

980.43
175+ 0.00
973.80

995 990 985 980 975 990 985 980 975 985 980 975 970 980 975 970 965

SCALE (FT)
5
0 10

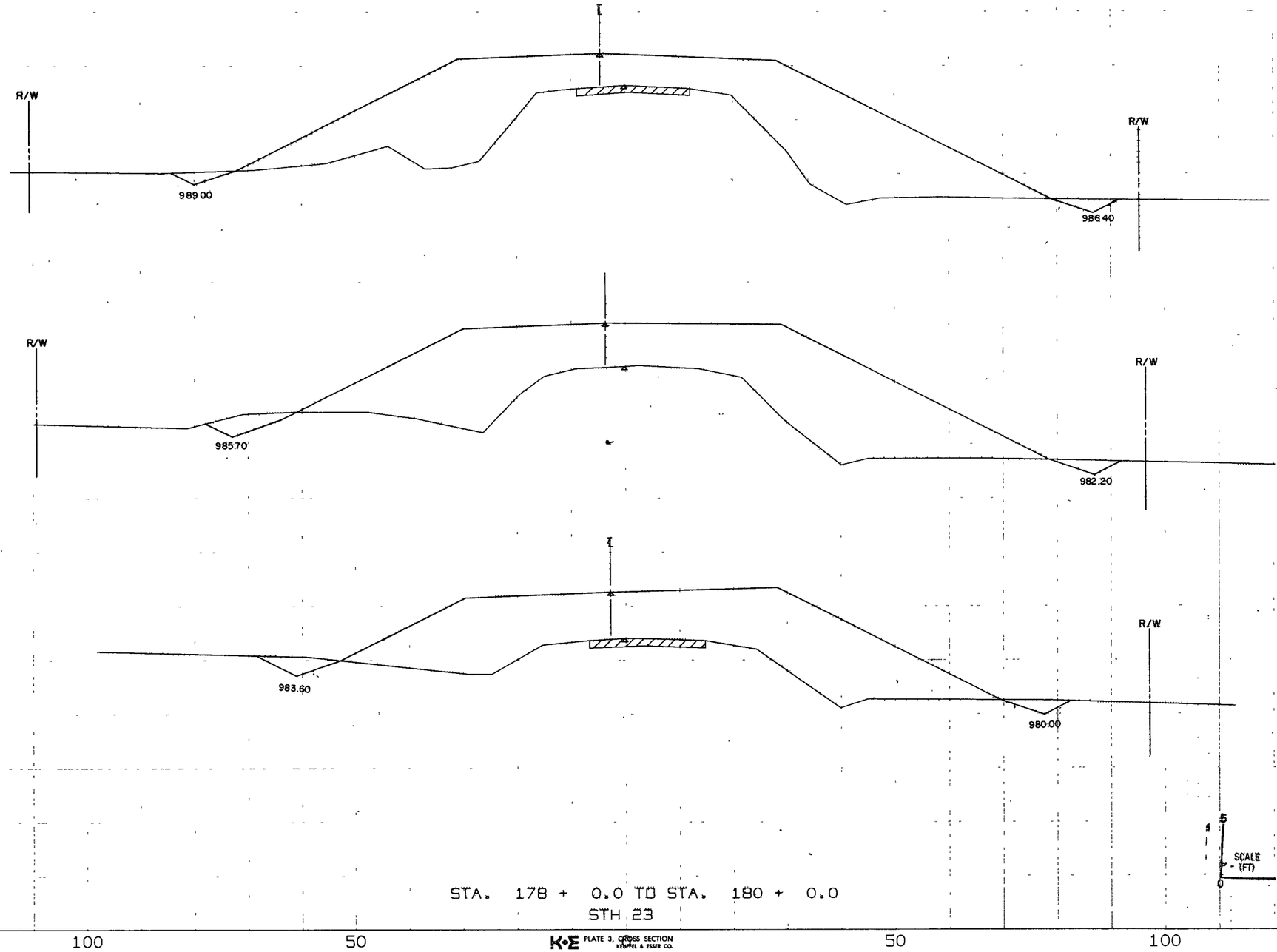
STA. 175 + 0.0 TO STA. 177 + 70.0
STH 23

150 100 50 50 100 150

K+E PLATE 3, CROSS SECTION
KEUFFEL & ESSER CO.

PLOTTED
TEMPLATE
AREAS
AREAS CHECKED
NOTE BOOK
NO.

1442-01-73 9.14



END AREAS (SQ.FT.)
FILL = 779.
CUT = 18.
1002.32
180+ 0.00
998.60

END AREAS (SQ.FT.)
FILL = 743.
CUT = 29.
997.39
179+ 0.00
992.80

END AREAS (SQ.FT.)
FILL = 575.
CUT = 30.
992.46
178+ 0.00
987.00

SCALE - (FT)
0 5 10

STA. 178 + 0.0 TO STA. 180 + 0.0
STH 23

150 100 50 0 50 100 150

K•E PLATE 3, CROSS SECTION KEUFFEL & ESSER CO.

AREAS CHECKED
NO.

1442-01-73 9.15

R/W R/W

END AREAS (SQ.FT.)
FILL = 0.
CUT = 1722.

1017.48
184+ 0.00
1023.00

R/W R/W

END AREAS (SQ.FT.)
FILL = 0.
CUT = 462.

1014.41
183+ 0.00
1017.00

R/W R/W

1003.90 1005.00

END AREAS (SQ.FT.)
FILL = 74.
CUT = 70.

1010.86
182+ 0.00
1010.80

R/W R/W

993.80 994.40

END AREAS (SQ.FT.)
FILL = 538.
CUT = 21.

1006.83
181+ 0.00
1004.40

SCALE (FT) 0 5 10

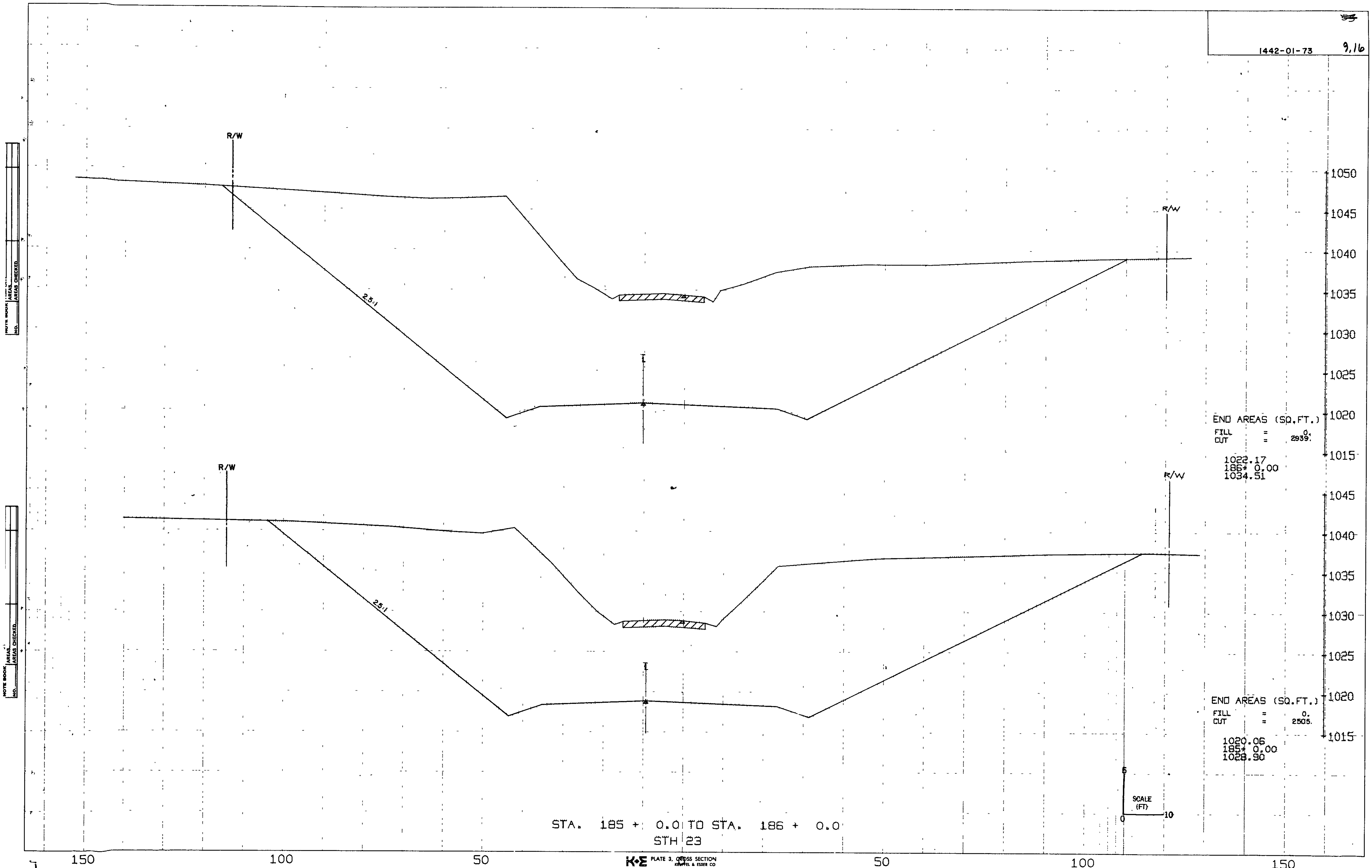
STA. 181 + 0.0 TO STA. 184 + 0.0
STH 23

150 100 50 PLATE 3, CROSS SECTION 50 100 150

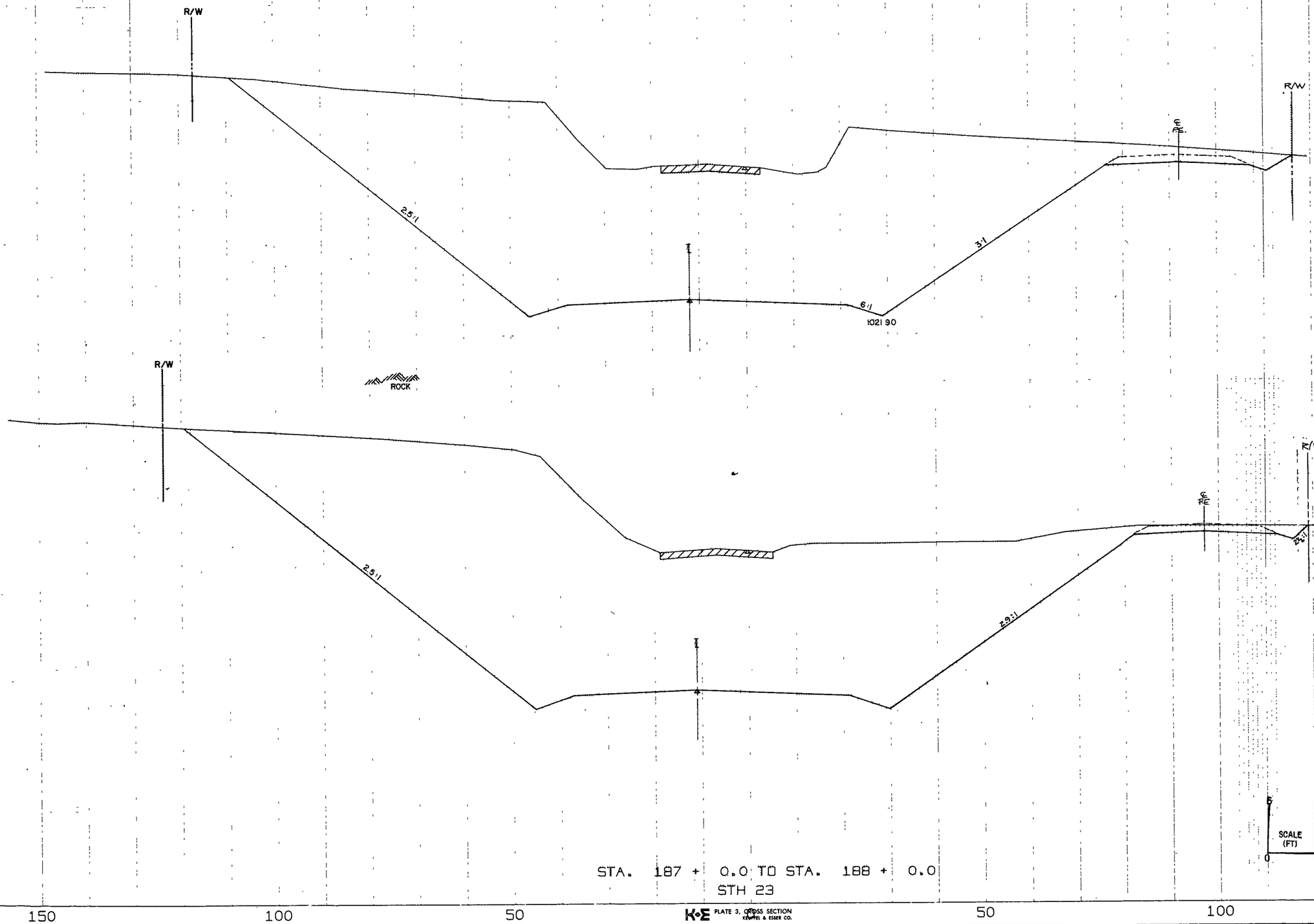
K&E KEUFFEL & ESSER CO.

1030 1025 1020 1015 1010 1020 1015 1010 1015 1010 1005 1000 1010 1005 1000 995 990

SURVEY PLOTTED TEMPLATE AREAS CHECKED
NOTE BOOK AREAS
NO.


1442-01-73
9,16
R/W
2.5:1
R/W
END AREAS (SQ.FT.)
FILL = 0.
CUT = 2939.
1022.17
186+ 0.00
1034.51
1050
1045
1040
1035
1030
1025
1020
1015
R/W
2.5:1
R/W
END AREAS (SQ.FT.)
FILL = 0.
CUT = 2505.
1020.06
185+ 0.00
1028.90
1045
1040
1035
1030
1025
1020
1015
SCALE (FT)
0
5
10
STA. 185 + 0.0 TO STA. 186 + 0.0
STH 23
150
100
50
50
100
150
NOTE BOOK
NO.
AREAS
AREAS CHECKED
K+E PLATE 3, CROSS SECTION KEUFFEL & ESSER CO

1442-01-73 9.17



END AREAS (SQ.FT.)
FILL = 0.
CUT = 2405.

1024.93
188+ 0.00
1037.60

END AREAS (SQ.FT.)
FILL = 0.
CUT = 2922.

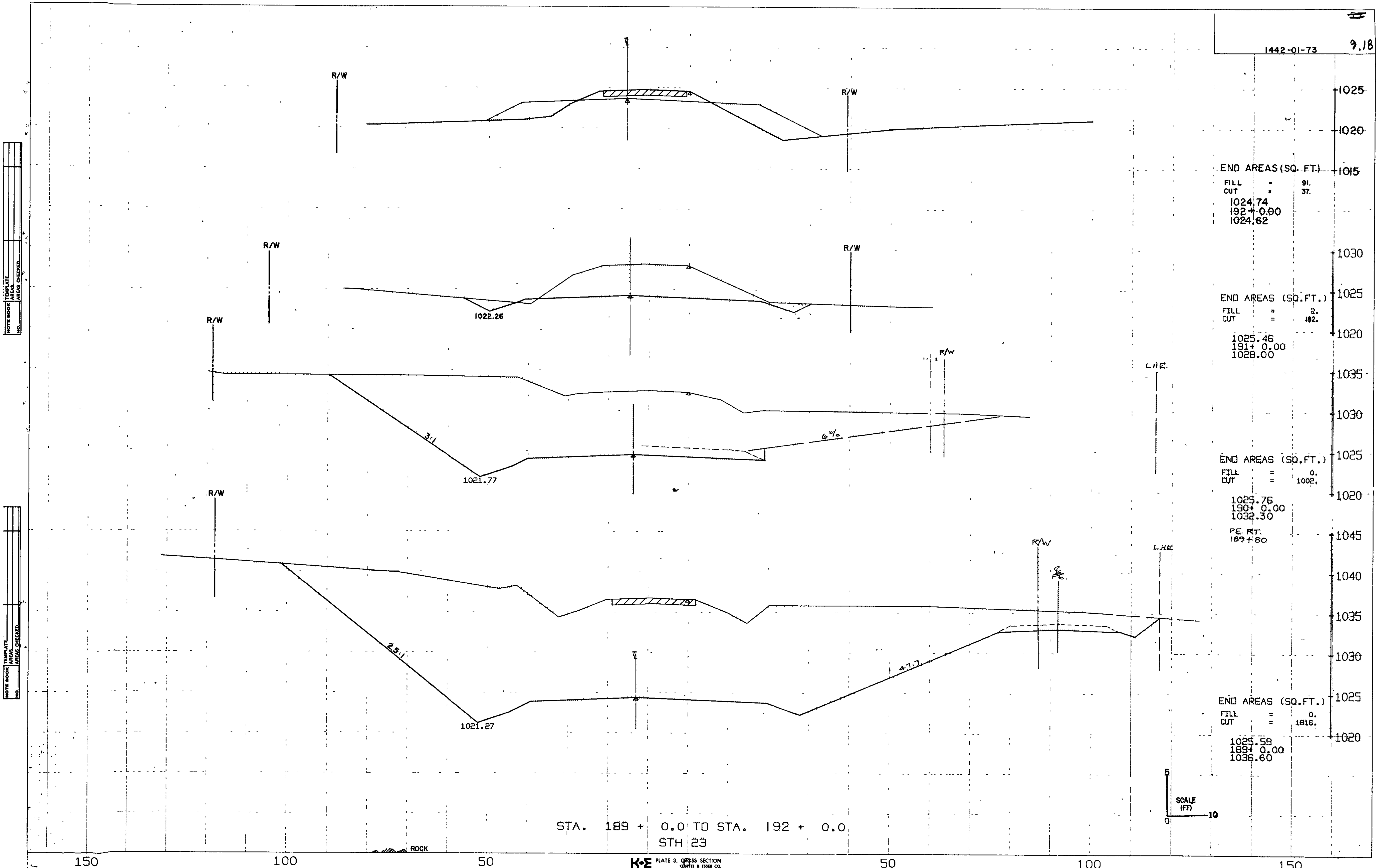
1023.79
187+ 0.00
1037.50

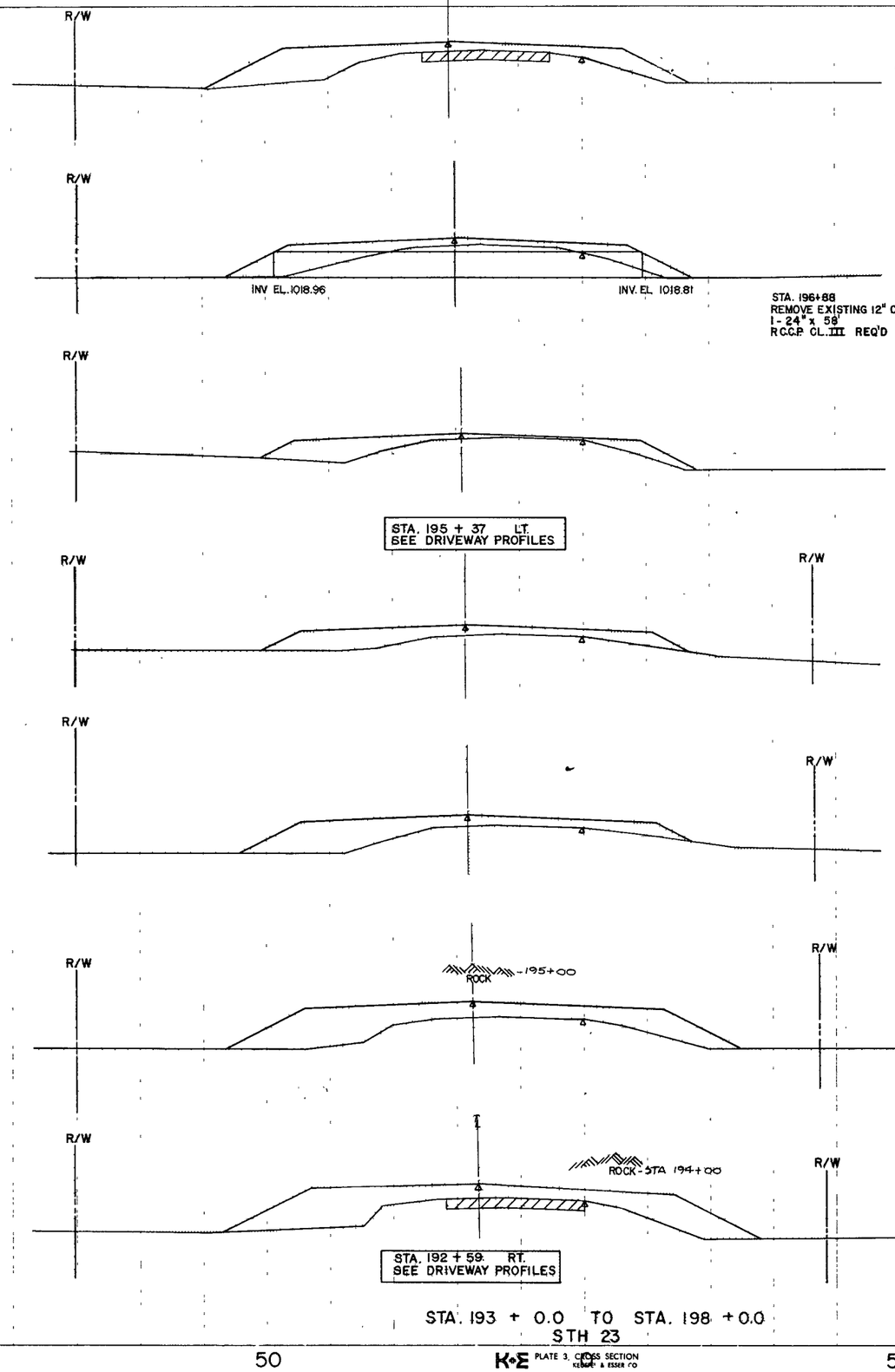
SCALE (FT) 0 10

STA. 187 + 0.0 TO STA. 188 + 0.0
STH 23

K&E PLATE 3, CROSS SECTION KEUFFEL & ESSER CO.

SURVEY | PLOTTED
NOTE BOOK | TEMPLATE
AREAS | AREAS CHECKED
NO.


1442-01-73
9.18
R/W
1025
1020
1015
END AREAS (SQ. FT.)
FILL = 91.
CUT = 37.
1024.74
192 + 0.00
1024.62
1030
1025
1020
1022.26
END AREAS (SQ. FT.)
FILL = 2.
CUT = 182.
1025.46
191 + 0.00
1028.00
L.H.E.
1035
1030
1025
1020
3:1
6%
1021.77
END AREAS (SQ. FT.)
FILL = 0.
CUT = 1002.
1025.76
190 + 0.00
1032.30
P.E. RT.
189 + 80
1045
1040
1035
1030
1025
1020
2.5:1
47.7
1021.27
END AREAS (SQ. FT.)
FILL = 0.
CUT = 1816.
1025.59
189 + 0.00
1036.60
SCALE (FT)
0
5
10
STA. 189 + 0.0 TO STA. 192 + 0.0
STH 23
ROCK
150
100
50
50
100
150
K+E PLATE 3, CROSS SECTION KEUFFEL & ESSER CO.
NOTE BOOK
TEMPLATE
AREAS
AREAS CHECKED
NO.



STA. 193 + 0.0 TO STA. 198 + 0.0
STH 23

END AREAS (SQ.FT.)
FILL = 67.
CUT = 0.

1023.45
198+0.00
1021.10

END AREAS (SQ.FT.)
FILL = 71.
CUT = 0.

1023.10
197+ 0.00
1020.80

END AREAS (SQ.FT.)
FILL = 50.
CUT = 0.

1022.79
196+ 0.00
1021.10

END AREAS (SQ.FT.)
FILL = 62.
CUT = 0.

1022.81
195+0.00
1020.70

END AREAS (SQ.FT.)
FILL = 84.
CUT = 0.

1022.87
194+75.00
1020.70

END AREAS (SQ.FT.)
FILL = 136.
CUT = 0.

1023.21
194+0.00
1020.70

END AREAS (SQ.FT.)
FILL = 133.
CUT = 0.

1023.75
193+0.00
1021.50

1020
1015
1025
1020
1015
1025
1020
1015
1025
1020
1015
1025
1020
1015

SCALE (FT)
0 5 10

1442-01-73

9.19

150 100 50 50 100 150

K&E PLATE 3. CROSS SECTION KEUFFEL & ESSER CO

TEMPLATE
AREAS
AREAS CHECKED
NOTE BOOK
NO.

1442-01-73 9,20

MATCH LINE STATION
51+00.00 ℄ C.T.H. "UU" NORTH

MATCH LINE STATION
49+00.00 ℄ C.T.H. "UU" SOUTH

STA 49+54.00 C.T.H."UU"
1-14"x 23"x87' R.C.E.P
H.E. III R.C.E.P

4:1

1021.00

164'

R/W

END AREAS (SQ.FT.)
FILL = 89.
CUT = 55.
1025.39
203+40.00
1022.20

END AREAS (SQ.FT.)
FILL = 199.
CUT = 3.
1025.24
203+ 0.00
1022.20

END AREAS (SQ.FT.)
FILL = 137.
CUT = 0.
1024.89
202+ 0.00
1021.90

END AREAS (SQ.FT.)
FILL = 118.
CUT = 0.
1024.53
201+ 0.00
1021.90

END AREAS (SQ.FT.)
FILL = 105.
CUT = 0.
1024.17
200+ 0.00
1021.40

END AREAS (SQ.FT.)
FILL = 92.
CUT = 0.
1023.81
199+ 0.00
1021.10

1025
1020
1015

SCALE (FT)
0 5 10

STA. 199 + 0.0 TO STA. 203 + 40.0
STH 23

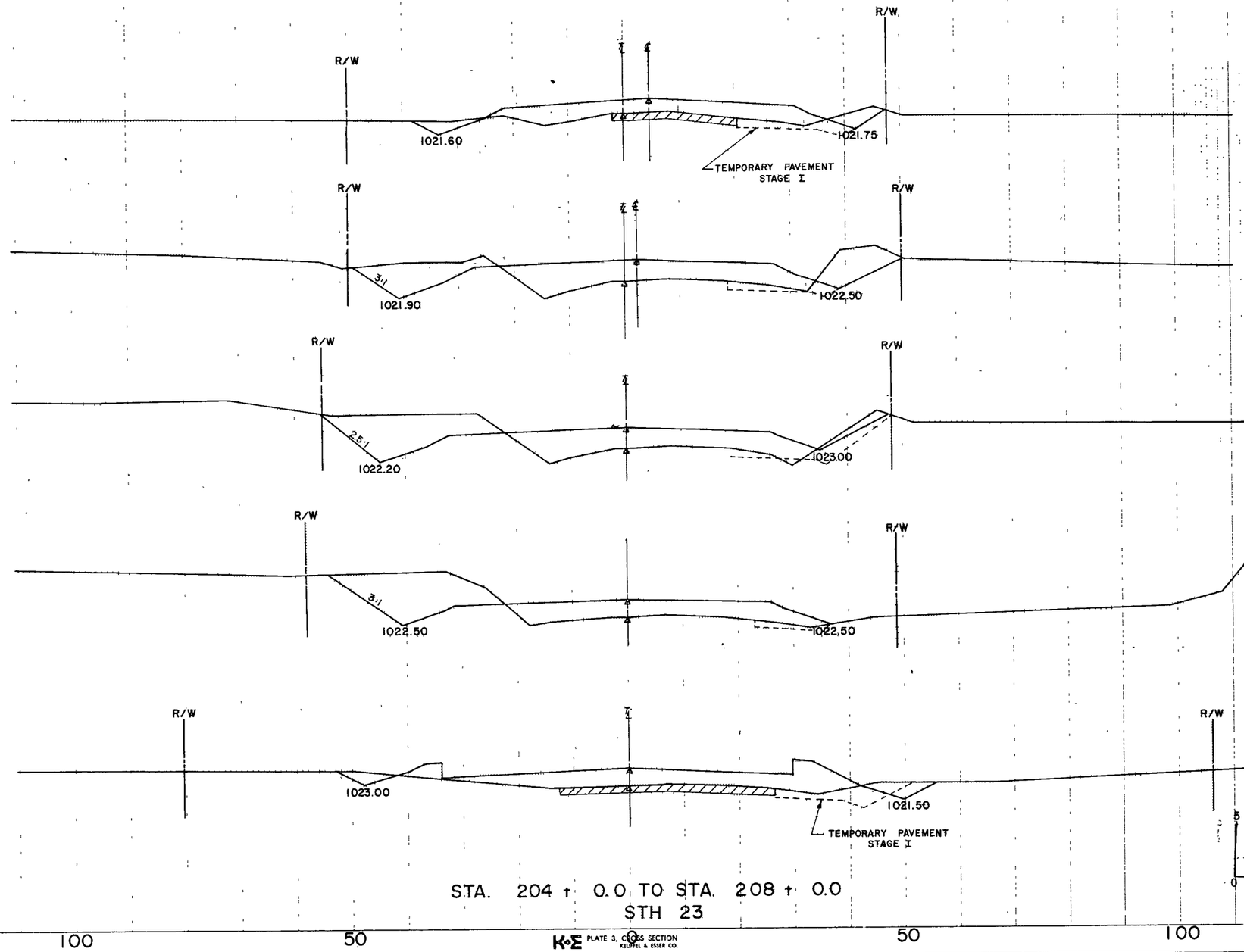
150 100 50 50 100 150

K&E PLATE 3, CROSS SECTION KEUFFEL & ESSER CO.

SURVEY PLOTTED TEMPLATE AREAS CHECKED
NOTE BOOK NO.

1442-01-73 9.74

NOTE BOOK
TEMPLATE AREAS
AREAS CHECKED
NO.



END AREAS (SQ. FT.)
FILL = 78.
CUT = 19.
1026.17
208 + 0.0
1023.30

END AREAS (SQ. FT.)
FILL = 103
CUT = 75.
1026.52
207 + 0.0
1023.20

END AREAS (SQ. FT.)
FILL = 99.
CUT = 32.
1026.32
206 + 0.0
1023.20

END AREAS (SQ. FT.)
FILL = 84.
CUT = 85.
1025.96
205 + 0.0
1023.10

END AREAS (SQ. FT.)
FILL = 113.
CUT = 20.
1025.61
204 + 0.0
1022.80

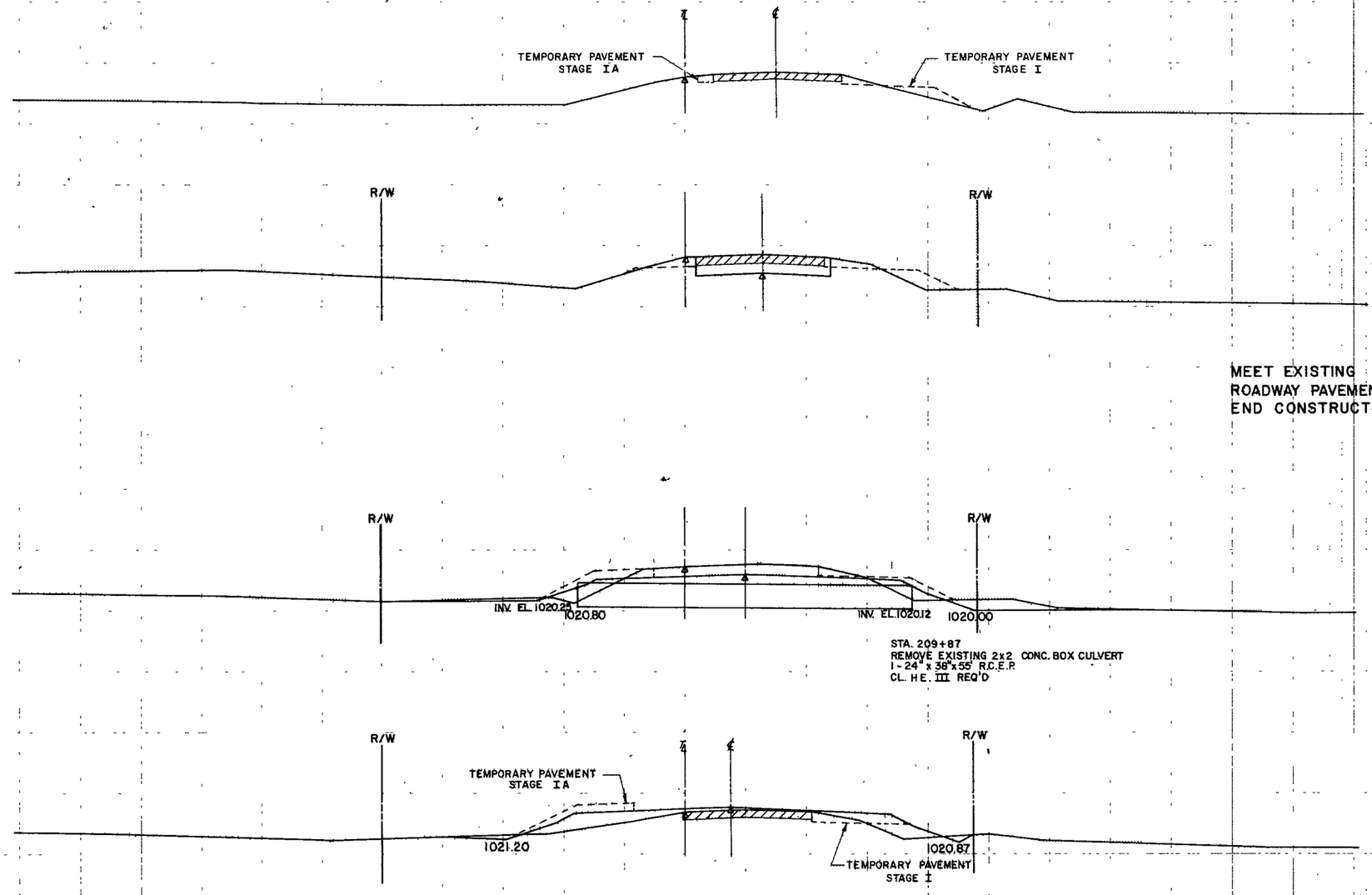
1030 1025 1020 1030 1025 1020 1030 1025 1020 1030 1025 1020

STA. 204 + 0.0 TO STA. 208 + 0.0
STH 23

150 100 50 0 50 100 150

K·E PLATE 3, CROSS SECTION KEUFFEL & ESSER CO.

1442-01-73 9.22



END AREAS (SQ. FT.)
FILL = 00
CUT = 00.
T023.80
212 + 0.0

END AREAS (SQ. FT.)
FILL = 00.
CUT = 32
1024.20
211 + 0.0
1024.00

END AREAS (SQ. FT.)
FILL = 16.
CUT = 66
1024.47
210 + 0.0
1023.60

END AREAS (SQ. FT.)
FILL = 48.
CUT = 13.
1025.26
209 + 0.0
1023.40

1025
1020
1015
1025
1020
1015
1035
1030
1025
1020
1015
1030
1025
1020
1015

NOTE BOOK, TEMPLATE, AREAS, AREAS CHECKED, NO.

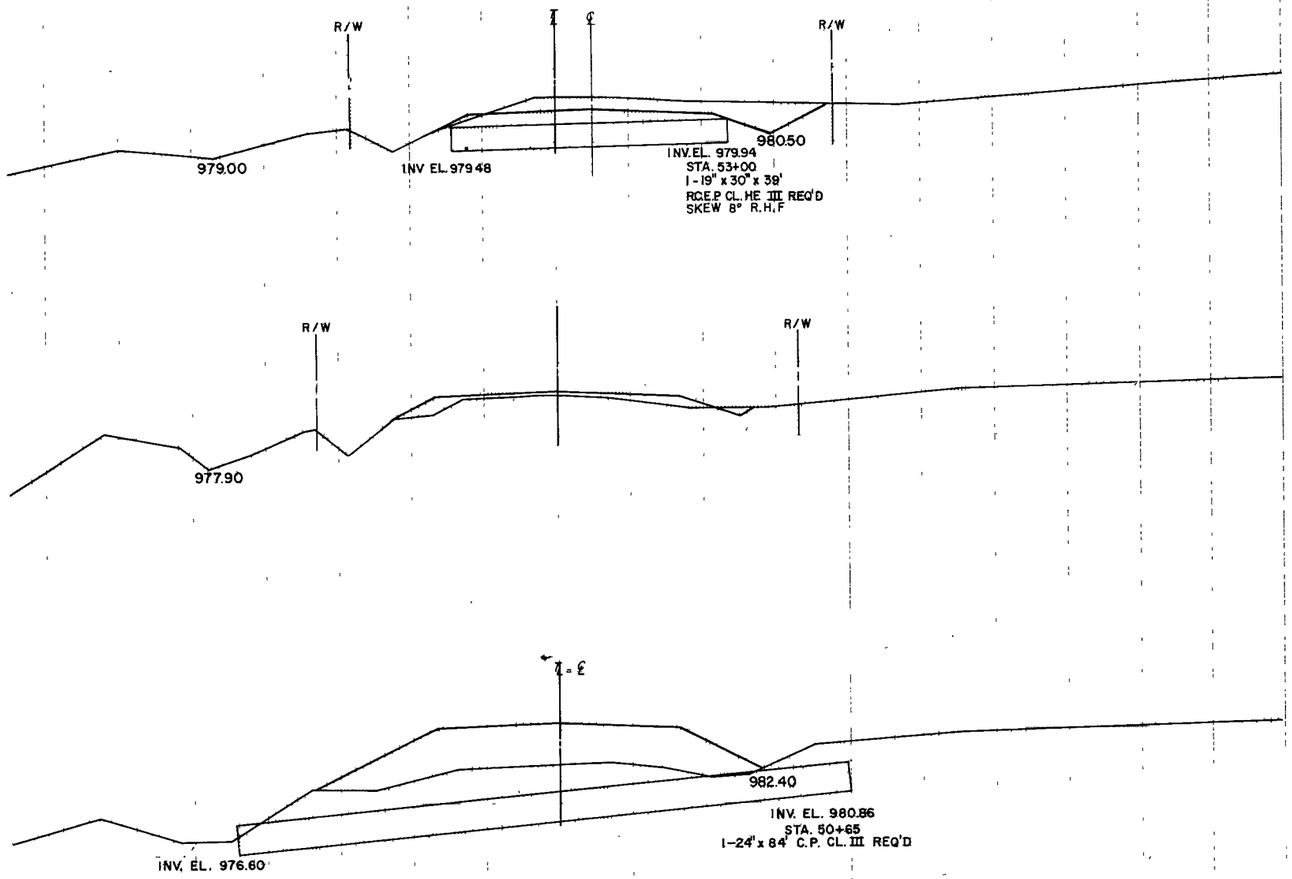
NOTE BOOK, TEMPLATE, AREAS, AREAS CHECKED, NO.

STA. 209 + 0.0 TO STA. 212 + 0.0
STH 23

150 100 50 0 50 100 150

K-Σ PLATE 3, CROSS SECTION CUFFEL & ESSER CO

1442-01-73 9.23



END AREAS (SQ. FT.)
FILL = 3.
CUT = 52.
983.20
53 + 0.0
983.08

END AREAS (SQ. FT.)
FILL = 22
CUT = 5.
984.02
52 + 0.0
982.73

END AREAS (SQ. FT.)
FILL = 148.
CUT = 00.
986.46
51 + 0.0
982.64

985
980
975
985
980
975
990
985
980
975

SCALE (FT)
5
0
10

STA. 51 + 0.0 TO STA. 53 + 0.0
OELKE DRIVE

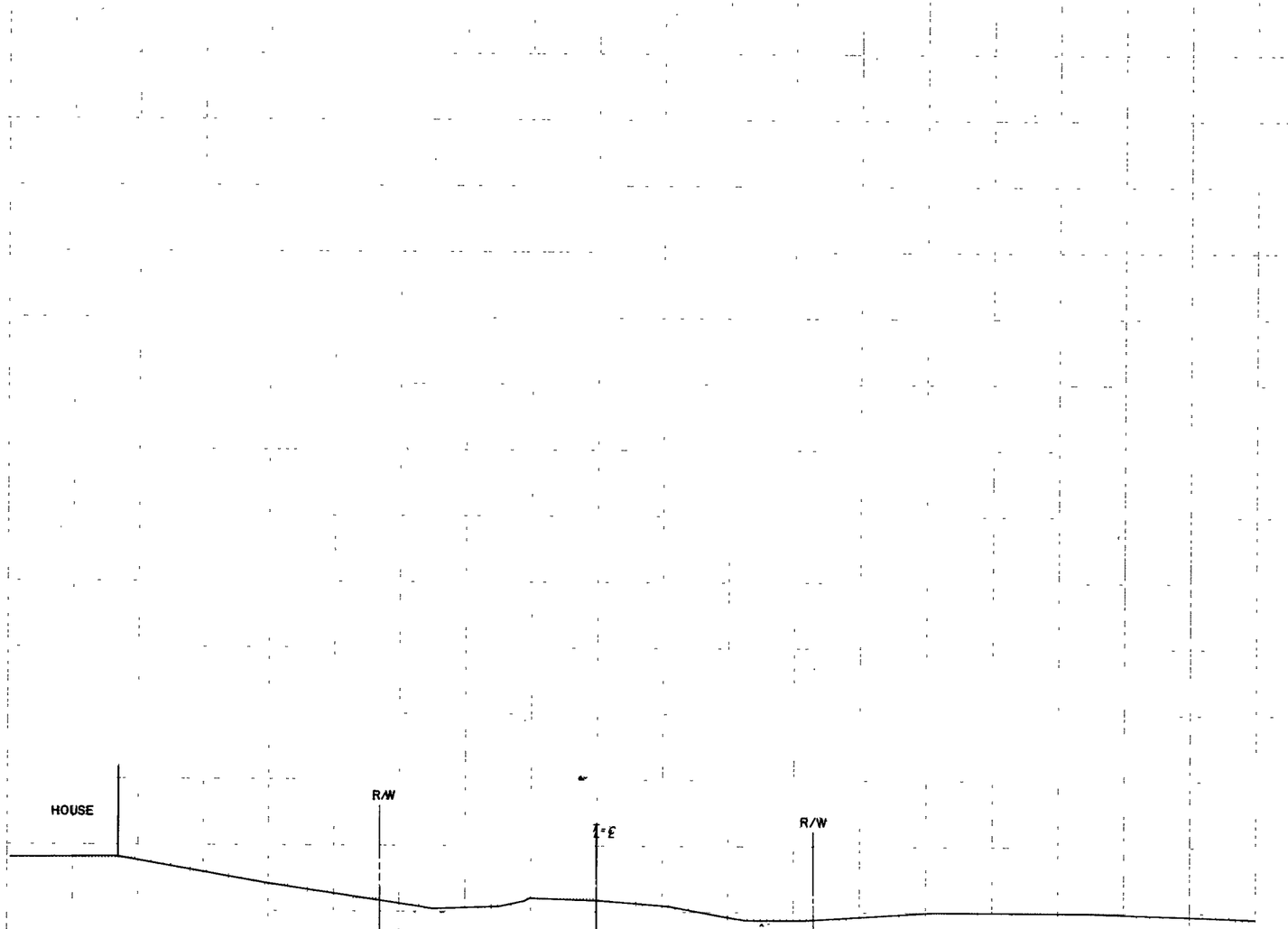
150 100 50 50 100 150

K-E PLATE 3, CROSS SECTION KEUFFEL & ESSER CO.

NOTE BOOK TEMPLATE
NO. AREAS
AREAS CHECKED

1442-01-73 9,24

NO. AREAS AREAS CHECKED



END AREAS (SQ. FT.)
FILL = 00.
CUT = 00
55 + 00
985.86

END AREAS (SQ. FT.)
FILL = 4.
CUT = 28.
983.95
53 + 66.00
982.00

990
985
980
985
980
975

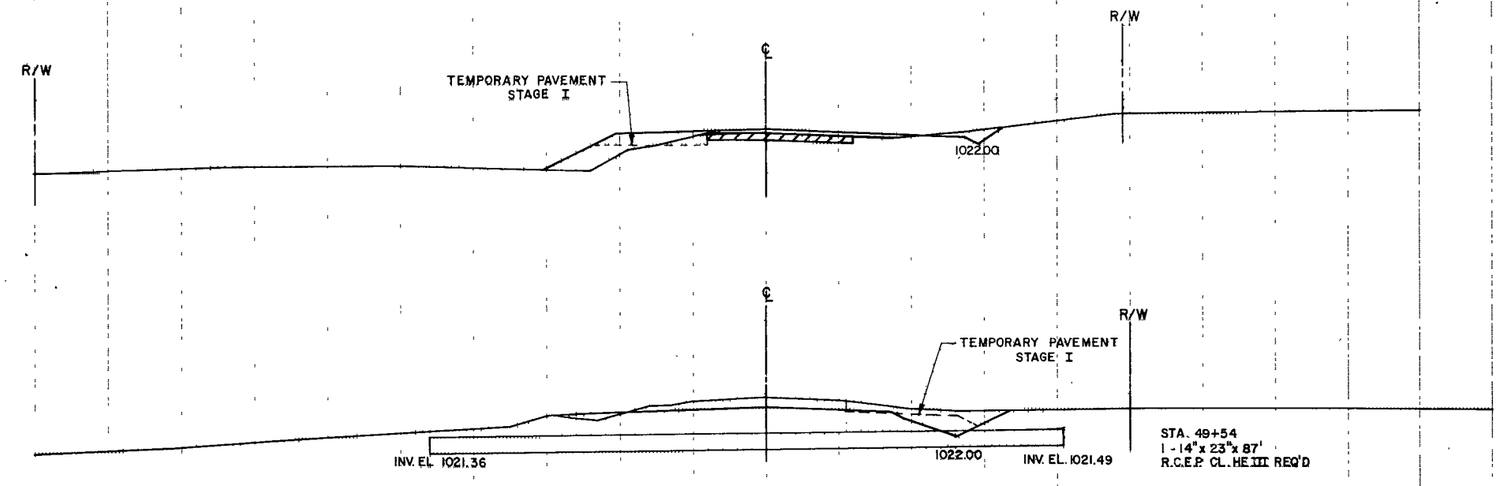
SCALE, (FT)
0 5 10

STA. 53 + 66.00 TO STA. 55 + 0.0
OELKE DRIVE

150 100 50 50 100 150

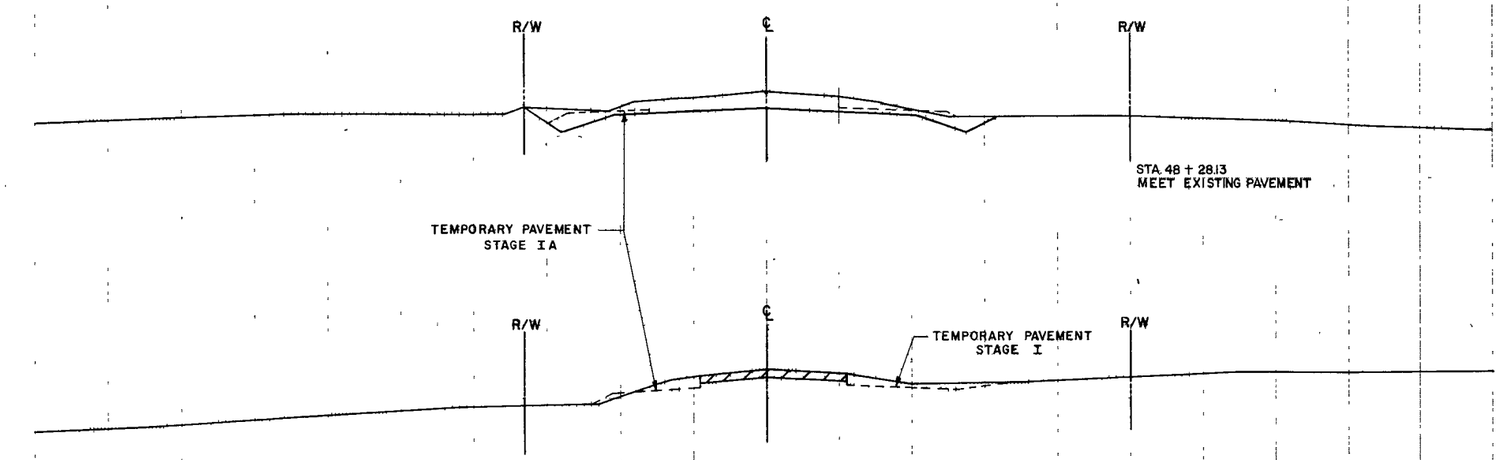
K+E PLATE 3. CROSS SECTION KEUFFEL & ESSER CO.

1442-01-73 9.25



END AREAS (SQ. FT.)
FILL = 12.
CUT = 3.
1023.96
51 + 0.0
1022.72

END AREAS (SQ. FT.)
FILL = 8.
CUT = 37.
1025.15
49 + 0.0
1024.77



END AREAS (SQ. FT.)
FILL = 00.
CUT = 20
1025.78
48 + 50.00
1025.97

END AREAS (SQ. FT.)
FILL =
CUT =
48 + 0.0
1027.02

SCALE (FT)
0 5 10

STA. 48 + 0.0 TO STA. 51 + 0.0
C.T.H. UU

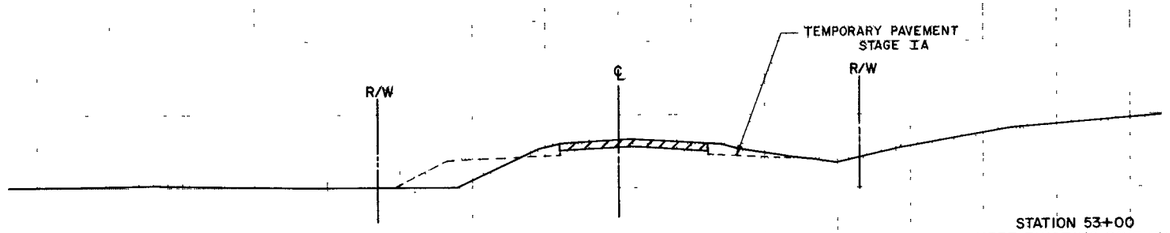
150 100 50 0 50 100 150

K+E PLATE 3, CROSS SECTION KEUFFEL & ESSER CO.

NOTE BOOK TEMPLATE
NO. AREAS CHECKED

1442-01-73 9,26

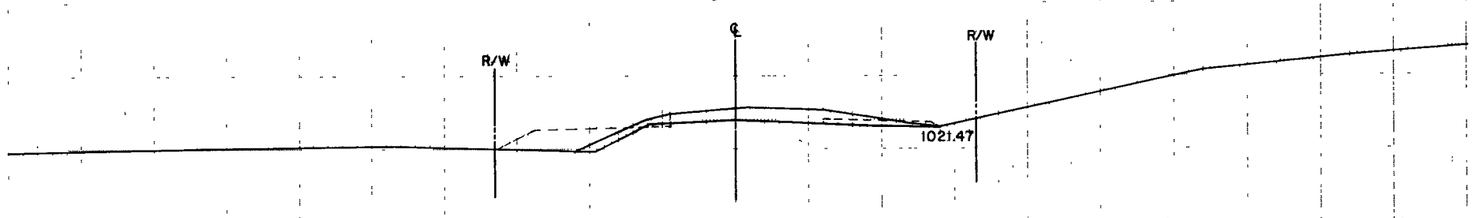
NOTE BOOK AREAS
NO AREAS CHECKED



STATION 53+00
MEET EXISTING PAVEMENT

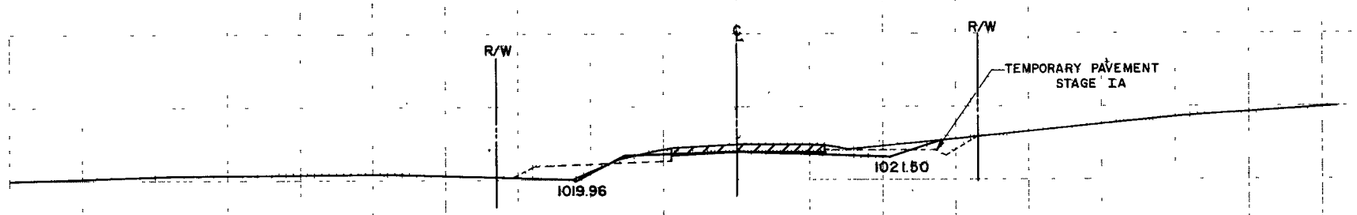
END AREAS (SQ. FT.)
FILL = 00.
CUT = 00.

54 + 0.0
1023.32



END AREAS (SQ. FT.)
FILL = 00.
CUT = 28

1022.86
53 + 0.0
1022.98



END AREAS (SQ. FT.)
FILL = 00.
CUT = 21.

1022.95
52 + 0.0
1022.42

SCALE (FT)
0 10

STA. 52 + 0.0 TO STA. 54 + 0.0
C.T.H. UU

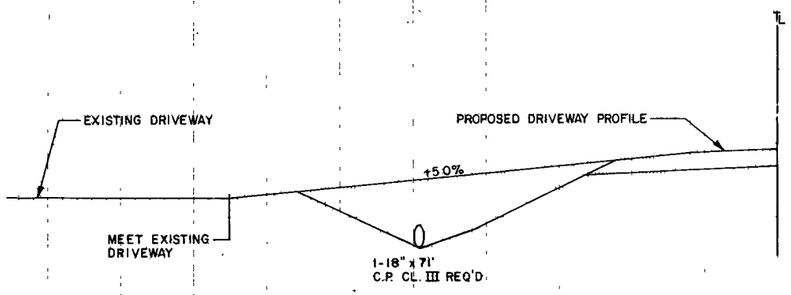
150 100 50 50 100 150

1025
1020
1015

K+E PLATE 3, CROSS SECTION KEUFFEL & ESSER CO.

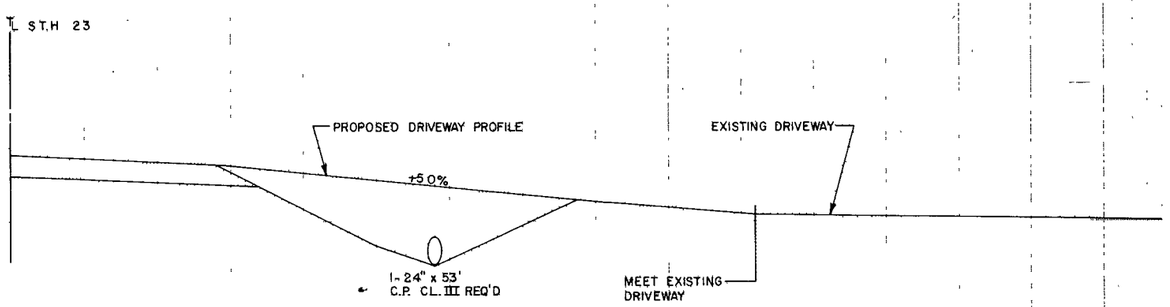
1442-01-73 9,27

NOTE BOOK | TEMPLATE
NO. | AREAS CHECKED



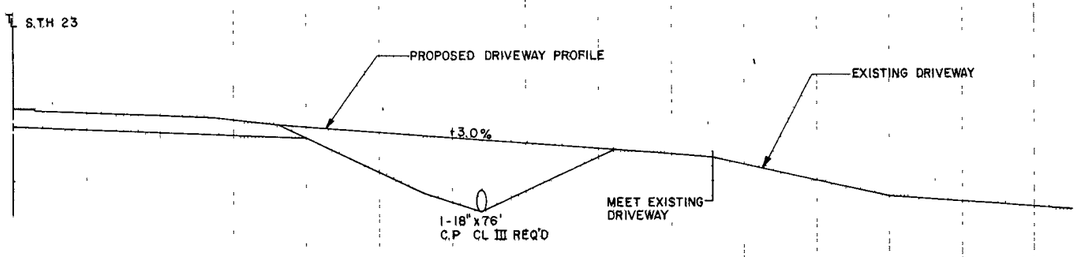
GRAVEL FIELD ENTRANCE
168 + 63.00 LT.

975
970
965
960



GRAVEL DRIVE
168 + 61.00 RT.

975
970
965
960



GRAVEL FIELD ENTRANCE
166 + 80.00 RT.

975
970
965
960

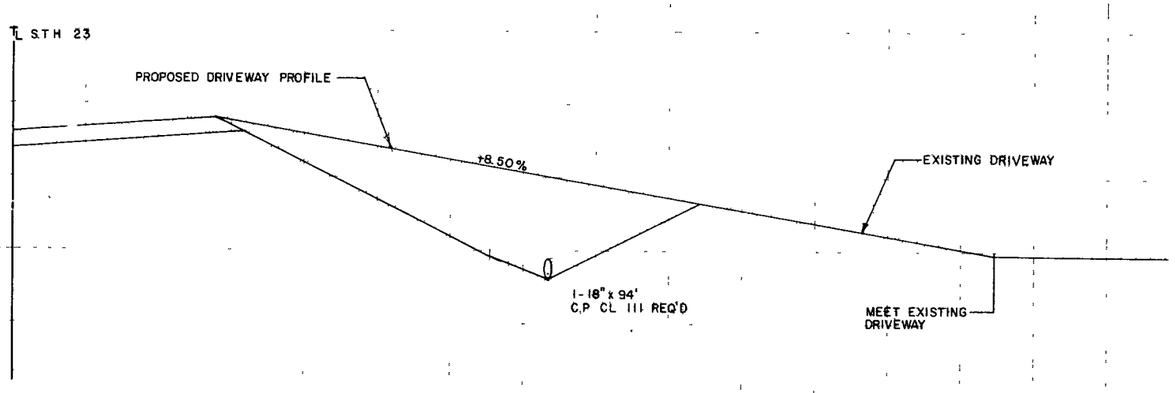
SCALE (FT)
0 5 10

STA. 166+80.00 TO STA. 168+63.00
DRIVEWAY PROFILES ALONG S.T.H. 23

100 50 0 100 150 200

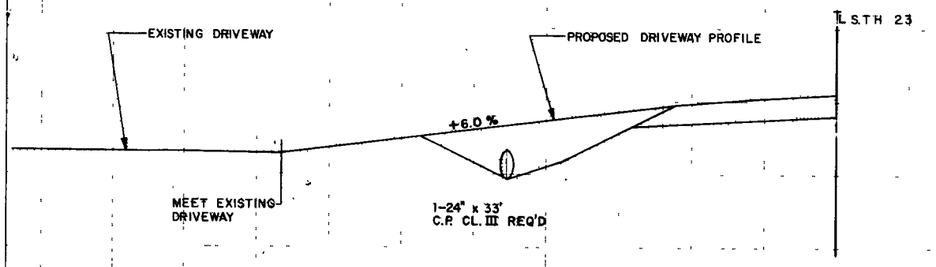
K+E PLATE 3, SECTION KEUFFEL & ESSER CO

1442-01-73 9,28



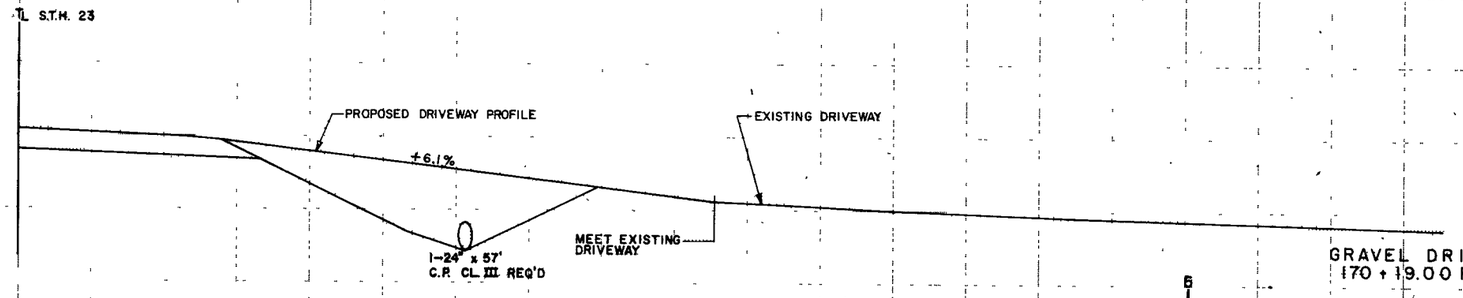
990
985
980
975
970

GRAVEL FIELD ENTRANCE
177+05.00 RT.



975
970
965
960

GRAVEL DRIVE
170+20.00 LT.



975
970
965
960

GRAVEL DRIVE
170+19.00 RT.

SCALE (FT)
0 5 10

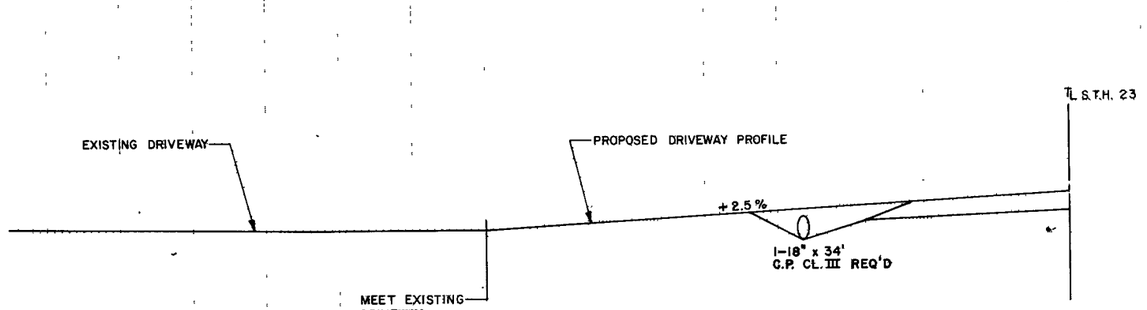
STA. 170+19.00 TO STA. 177+05
DRIVEWAY PROFILES ALONG S.T.H. 23

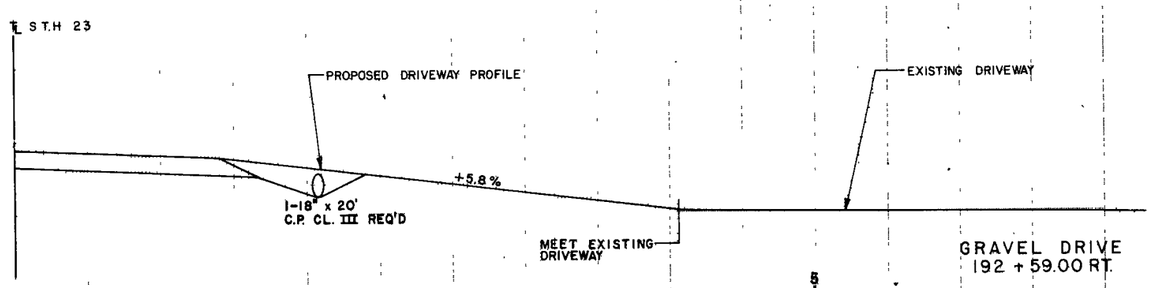
100 50 0 50 100 150 200

K+E PLATE 3, 5 SECTION KEUFFEL & ESSER CO.

1442-01-73 9.24

NOTE BOOK, TEMPLATE
AREAS
NO. AREAS CHECKED





1030
1025
1020
1015

GRAVEL DRIVE
195 + 37.00 LT.

1030
1025
1020
1015

GRAVEL DRIVE
192 + 59.00 RT.

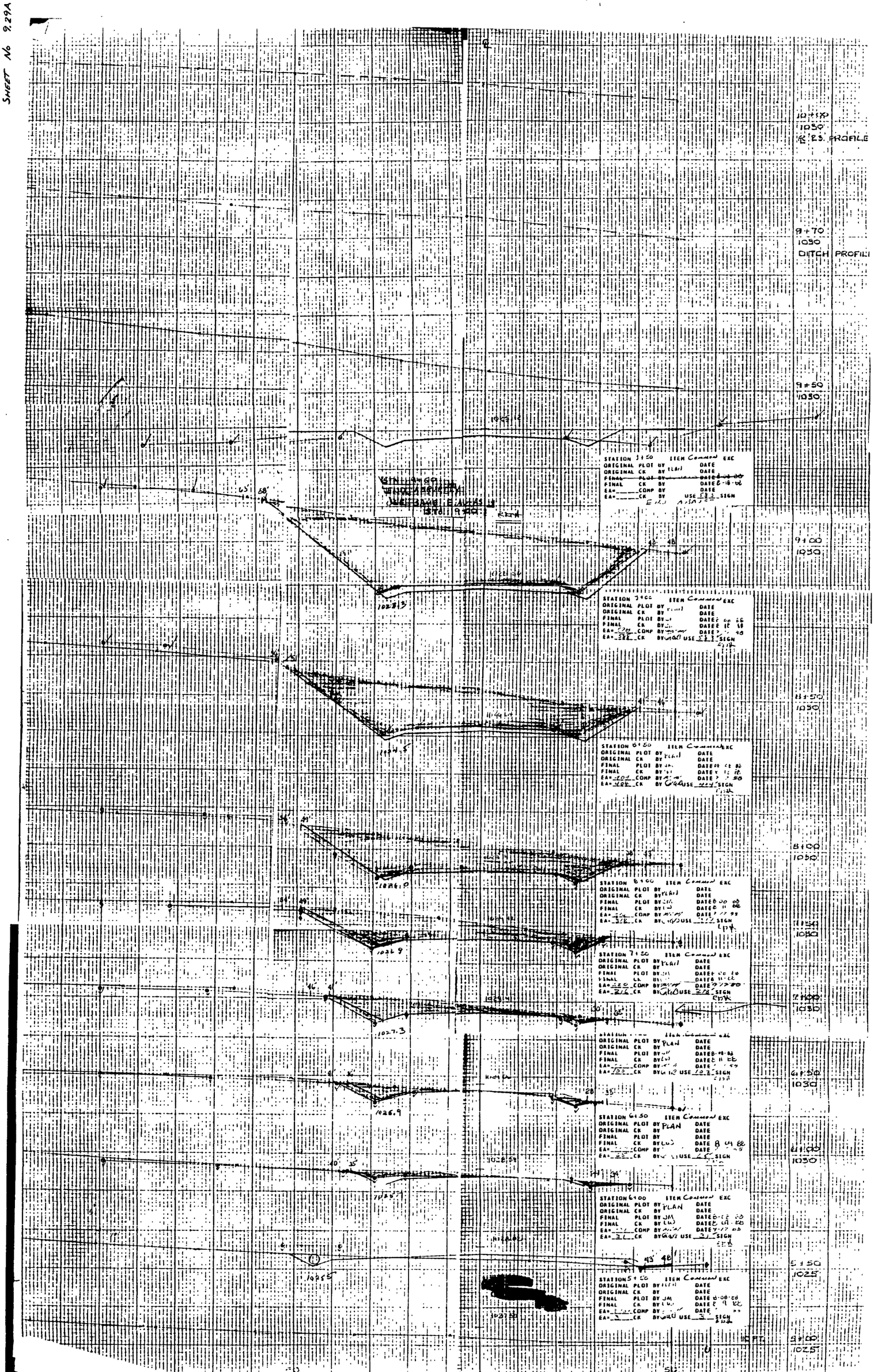
SCALE (FT)
0 5 10

STA. 192 + 59.00 TO 195 + 37.00
DRIVEWAY PROFILES ALONG S.T.H. 23

150 100 50 0 50 100 150

K+E PLATE 3, CROSS SECTION KEUFFEL & ESSER CO

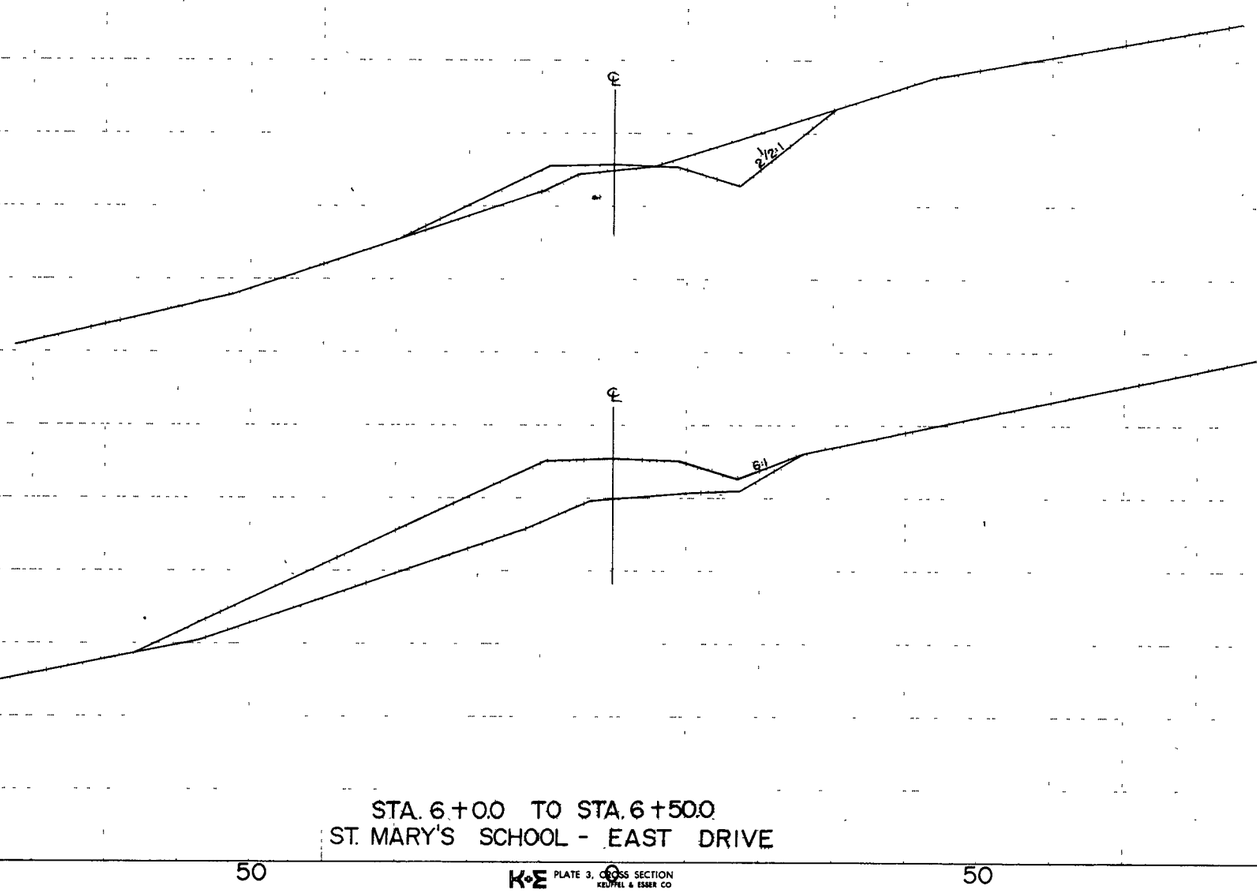
SHEET NO 9.29A



1442-01-73 9.30

AREAS
NO. AREAS CHECKED

STATION 7+00.00
MEET EXISTING PAVEMENT



END AREAS (SQ. FT.)
FILL = 31.
CUT = 49.
873.48
6+50.00
872.65

END AREAS (SQ. FT.)
FILL = 184.
CUT = 0.
878.19
6+00.00
874.99

SCALE (FT)
0 5 10

STA. 6+0.0 TO STA. 6+50.0
ST. MARY'S SCHOOL - EAST DRIVE

150 100 50 0 50 100 150

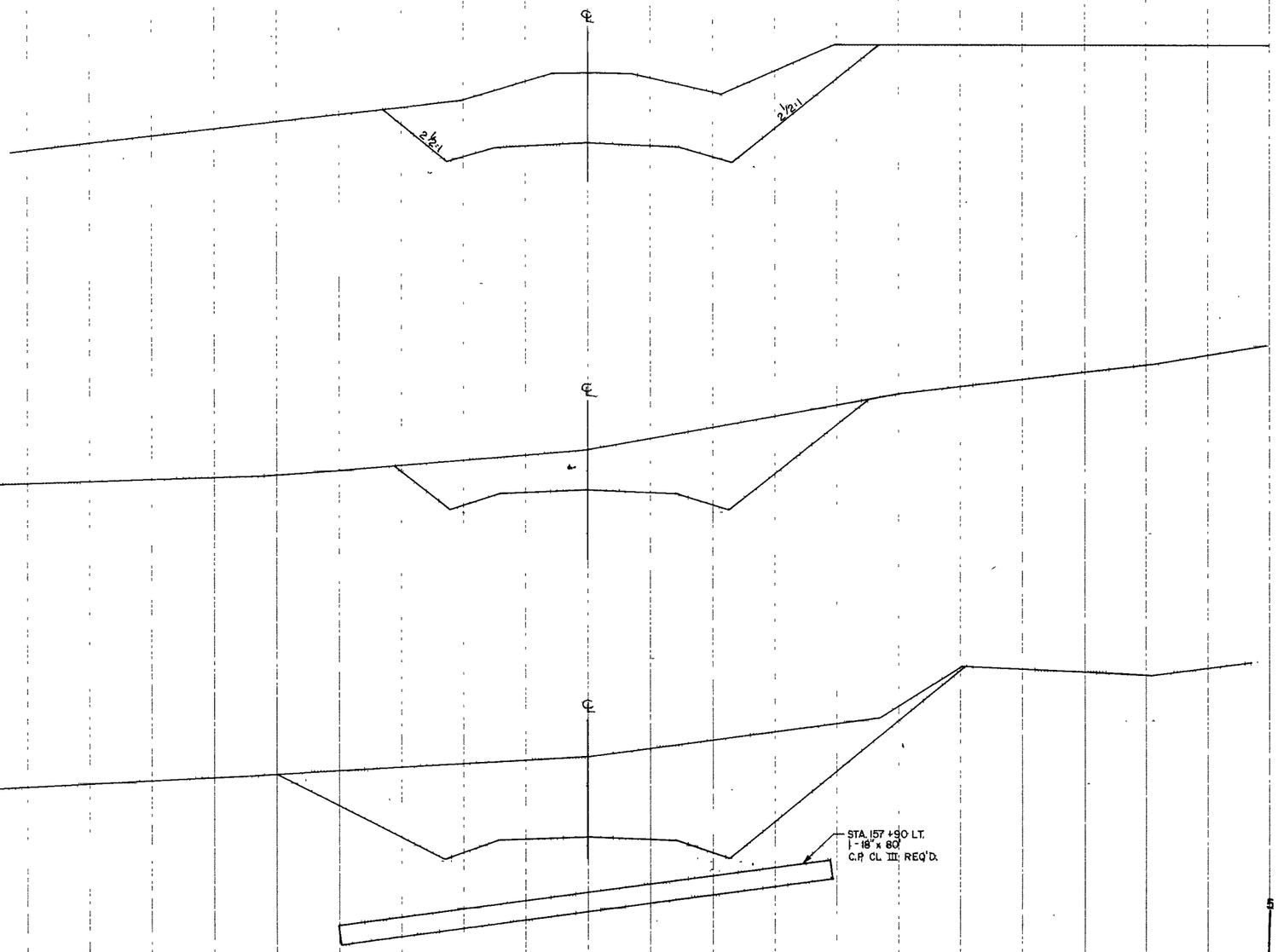
880 875 870 865 860 880 875 870 865 860

K•E PLATE 3, CROSS SECTION KEUFFEL & ESSER CO

1442-01-73

9,31

NOTE BOOK | TEMPLATE
NO. | AREAS CHECKED



END AREAS (SQ. FT.)
FILL = 0.
CUT = 329.
971.94
6+50.00
976.80

END AREAS (SQ. FT.)
FILL = 0.
CUT = 250.
969.14
6+00.00
971.57

END AREAS (SQ. FT.)
FILL = 0.
CUT = 510.
966.30
5+59.00
972.20

980 975 970 965 960

980 975 970 965 960

SCALE (FT)
5
0
10

150 100 50 50 100 150

STA. 5 + 59.0 TO STA. 6 + 50.0
NAZARETH HEIGHTS INFIRMARY DRIVE

K·E PLATE 3, CROSS SECTION
KEUFFEL & ESSER CO.

1442-01-73 9.32

MEET EXISTING DRIVEWAY

970.25

2½:1

END AREAS (SQ. FT.)
FILL = 0.
CUT = 18.
970.77
8+50.00
970.77

END AREAS (SQ. FT.)
FILL = 8.
CUT = 67.
972.53
8+00.00
972.53

END AREAS (SQ. FT.)
FILL = 3.
CUT = 37.
973.66
7+50.00
973.70

END AREAS (SQ. FT.)
FILL = 0.
CUT = 128.
973.44
7+00.00
975.20

980 975 970 965 980 975 970 965 980 975 970 965

SCALE (FT) 0 5 10

STA. 7+00 TO STA. 8+50.0
NAZARETH HEIGHTS | INFIRMARY DRIVE

150 100 50 0 50 100 150

K-E PLATE 3, CROSS SECTION KEUFFEL & ESSER CO.

NOTE BOOK TEMPLATE AREAS AREAS CHECKED NO.