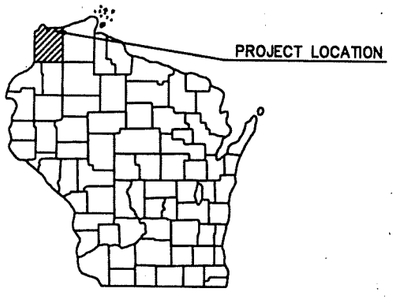
INDEX OF SHEETS

TOTAL SHEETS = 440



STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

TOWER AVENUE, CITY OF SUPERIOR

(34TH ST. – BELKNAP ST.)

S.T.H. 35

DOUGLAS COUNTY

STATE PROJECT NUMBER

8010-07-73

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
8010-07-73	—	—

ACCEPTED FOR

CITY of SUPERIOR

11-3-95 DATE — DIRECTOR OF PUBLIC WORKS

ORIGINAL PLANS PREPARED BY:

SEH ENGINEERS ▪ ARCHITECTS ▪ PLANNERS

CHARLES G. SCHMIDT E-21175 CHIPPEWA FALLS WI — PROFESSIONAL ENGINEER

11/02/95 DATE — SIGNATURE

ELECTRICAL/LIGHTING CONSULTANT:

DESIGN, INC. — ELECTRICAL/MECHANICAL CONSULTANTS — 704 SOUTH BARSTOW STREET, EAU CLAIRE, WISCONSIN 54701 (715)836-7858

MERVYN L. BERENS — EAU CLAIRE, WIS.

11-6-95 DATE — DESIGNER SIGNATURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

Surveyor	S.E.H.
Designer	S.E.H.
District Examiner	RICHARD H. WASHKUHN
District Supervisor	
Proj. Dev. Engineer	
C.O. Examiner	

APPROVED FOR DISTRICT OFFICE

DATE: 11-3-95 (Signature)

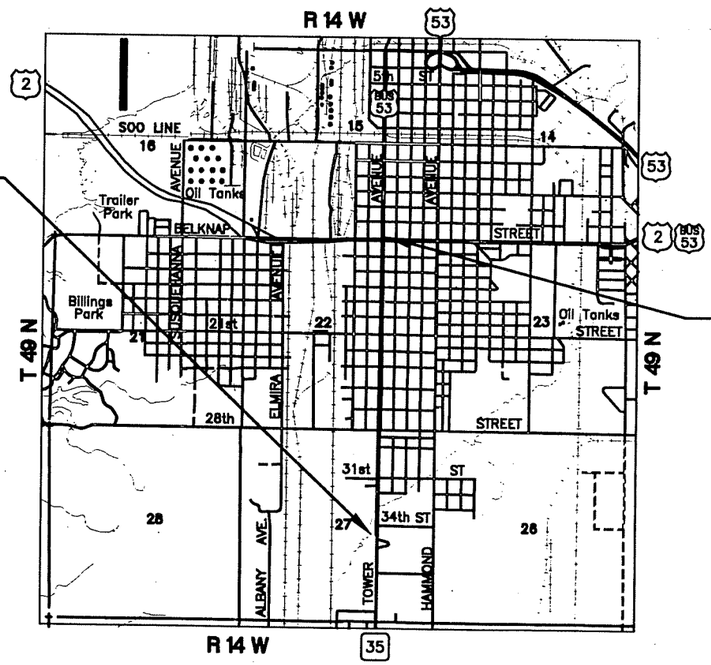
AUTHORIZED FOR CENTRAL OFFICE TRAFFIC

DATE: _____ (Signature)

AUTHORIZED FOR CENTRAL OFFICE DESIGN

DATE: 11-8-95 (Signature)

N



BEGIN PROJECT 8010-07-73
STA. 602+00
N= 565,113.47
E= 1,472,204.92

END PROJECT 8010-07-73
STA. 689+50

LAYOUT
SCALE 0 2000 FT.

TOTAL NET LENGTH OF CENTERLINE = 1.657 MI.

DESIGN DESIGNATION

A.D.T. (1995)	= 16,824
A.D.T. (2015)	= 25,880
D.H.V. (2015)	= 2,847
D.	= 60-40
T.	= 5.8
V.	= 35 MPH
ESAL	= 3,788,700

CONVENTIONAL SIGNS

COUNTY LINE
CORPORATE LIMITS
PROPERTY LINE
LOT LINE
LIMITED HIGHWAY EASEMENT
EXISTING RIGHT OF WAY
NEW RIGHT OF WAY
REFERENCE LINE
SLOPE INTERCEPTS
ORIGINAL GROUND
MARSH OR ROCK PROFILE
CULVERT IN PLACE
CULVERT REQUIRED
CULVERT REQUIRED (Profile)

COMBUSTIBLE FLUIDS (UNDER PRESSURE) — CAUTION
UNDERGROUND UTILITIES
GAS — G
ELECTRIC — E
TELEPHONE — T
SERVICE PEDESTAL
CABLE MARKER
POWER POLE
TELEPHONE POLE
RAILROADS
MARSH
WOODED AREA
RIGHT OF WAY MARKER POST

COORDINATE NOTE

ALL COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COORDINATE SYSTEM CENTRAL ZONE AND SCALED FROM U.S.G.S. TOPOGRAPHIC MAP SUPERIOR, WIS.-MINN., 1983, 7.5 MINUTE WISCONSIN QUADRANGLE, FOR IDENTIFICATION ONLY.

DRAWING NAME: 2330277L
LAYERS OFF:
SEH JOB #

WISDOT/VEHICLE NO. 10

STATE PROJECT NUMBER	SHEET NO.
8010-07-73	2.0

STANDARD ABBREVIATIONS, GENERAL NOTES, STANDARD DETAIL DRAWINGS & UTILITY CONTACTS

STANDARD ABBREVIATIONS

ABUT	ABUTMENT
AP	ACCESS POINT
AC	ACRE
AGG	AGGREGATE
AH	AHEAD
<	ANGLE
AEW	APRON ENDWALLS
ASPH	ASPHALTIC
AC	ASPHALT CEMENT
APM	ASPHALTIC PLANT MIX
AVG	AVERAGE
ADT	AVERAGE DAILY TRAFFIC
B & B	BALLED AND BURLAPPED
B & P	BALLED AND POTTED
BK	BACK
BF	BACK FACE
BR	BARE ROOT
BRP	BARE ROOT POTTED
BL OR B/L	BASE LINE
BM	BENCH MARK
BLK	BLOCK
BR	BRIDGE
CB	CATCH BASIN
℄ OR C/L	CENTER LINE
CC	CENTER TO CENTER
Δ	CENTRAL ANGLE OR DELTA
CONC	CONCRETE
CORR	CORRUGATED
CACP	CORRUGATED ALUMINUM CULVERT PIPE
CAPA	CORRUGATED ALUMINUM PIPE ARCH
CSCP	CORRUGATED STEEL CULVERT PIPE
CSPA	CORRUGATED STEEL PIPE ARCH
CSPCP	CORRUGATED STEEL PIPE CATTLE PASS
CO	COUNTY
CTH	COUNTY TRUCK HIGHWAY
CR	CREEK
CR	CRUSHED
CY OR CU YD	CUBIC YARD
CULT	CULTIVATED
CULV	CULVERT
CP	CULVERT PIPE
C & G	CURB AND GUTTER
(D)	DEED
DEF	DEFORMED
D	DEGREE OF CURVE
DHV	DESIGN HOUR VOLUME
DIA	DIAMETER
D	DIRECTIONAL DISTRIBUTION
DISCH	DISCHARGE
DIST	DISTRICT
DG	DITCH GRADE
DWY	DRIVEWAY
E	EAST OR EAST PROJECT COORDINATE
X	EAST GRID COORDINATE
EB	EASTBOUND
ELEC	ELECTRIC(AL)
EL OR ELEV	ELEVATION
EMB	EMBANKMENT
EW	ENDWALL
ENT	ENTRANCE
ESALS	EQUIVALENT SINGLE AXLE LOADS
EXC	EXCAVATION
EBS	EXCAVATION BELOW SUBGRADE
EXIST	EXISTING
EXP	EXPANSION
FF	FACE TO FACE
FP	FENCE POST
FERT	FERTILIZE
FE	FIELD ENTRANCE
F	FILL
FG	FINISHED GRADE
FL OR F/L	FLOW LINE
FT	FOOT
FTG	FOOTING
FDN	FOUNDATION
GN	GRID NORTH
HR	HANDICAP RAMP
HT	HEIGHT
HES	HIGH EARLY STRENGTH
CWT	HUNDREDWEIGHT
HYD	HYDRANT
IN DIA	INCH DIAMETER
INL	INLET
ID	INSIDE DIAMETER
INTERS	INTERSECTION
I	INTERSECTION ANGLE
INV	INVERT
IP	IRON PIPE OR PIN
JT	JOINT
JCT	JUNCTION
LC	LAND CONTRACT
LHF	LEFT-HAND FORWARD
L	LENGTH OF CURVE
LIN FT OR LF	LINEAR FOOT
LC	LONG CHORD OF CURVE
LS	LUMP SUM
MAINT	MAINTENANCE
MGR	MANAGER
MH	MANHOLE
MP	MARKER POST
M	MARSH
ML OR M/L	MATCH LINE
MATL	MATERIAL
NOM	NOMINAL
NRCPSS	NONREINFORCED CONCRETE PIPE STORM SEWER
NC	NORMAL CROWN
NW OR N/W	NORMAL WATER
N	NORTH OR NORTH PROJECT COORDINATE
Y	NORTH GRID COORDINATE
NB	NORTHBOUND
NO	NUMBER
OBLIT	OBLITERATE
OL	OUT LOT
OD	OUTSIDE DIAMETER
PSD	PASSING SIGHT DISTANCE
PAVT	PAVEMENT
PCP	PIPE CATTLE PASS
PLE	PERMANENT LIMITED EASEMENT
PU	PIPE UNDERDRAIN
PUDT	PIPE UNDERDRAIN DRAIN TILE
PUU	PIPE UNDERDRAIN UNPERFORATED
PT	POINT
PC	POINT OF CURVATURE
PI	POINT OF INTERSECTION
PRC	POINT OF REVERSE CURVATURE
PT	POINT OF TANGENCY
POC	POINT ON CURVE
POT	POINT ON TANGENT
PVC	POLYVINYL CHLORIDE
PCC	PORTLAND CEMENT CONCRETE
LB	POUND
PSI	POUNDS PER SQUARE INCH
PE	PRIVATE ENTRANCE
PROJ	PROJECT
QCD	QUITCLAIM DEED
R	RADIUS
RP	RADIUS POINT
RR	RAILROAD
RY	RAILWAY
R	RANGE
RECY	RECYCLED
RL OR R/L	REFERENCE LINE
RP	REFERENCE POINT
RCCP	REINFORCED CONCRETE CULVERT PIPE
RCHECP	REINFORCED CONCRETE HORIZONTAL ELLIPTICAL CULVERT PIPE
RCPA	REINFORCED CONCRETE PIPE ARCH
RCPCP	REINFORCED CONCRETE PIPE CATTLE PASS
RCPSS	REINFORCED CONCRETE PIPE STORM SEWER
REBAR	REINFORCEMENT BAR
REINF	REINFORCING OR REINFORCEMENT
REL	RELOCATE (d)
REM	REMAINING
REP	REPRESENTATIVE
REQD	REQUIRED
RES	RESIDENCE OR RESIDENTIAL
RW	RETAINING WALL
RT	RIGHT
RHF	RIGHT-HAND FORWARD
R/W	RIGHT-OF-WAY
R	RIVER
RD	ROAD
RDWY	ROADWAY
SALV	SALVAGED
SAN S	SANITARY SEWER
SEC	SECTION
SHLDR	SHOULDER
SHR	SHRINKAGE
SW	SIDEWALK
S	SOUTH
SB	SOUTHBOUND
SP	SPECIAL
SC	SPECIAL CROSSING
SPECS	SPECIFICATIONS
SQ	SQUARE
SF OR SQ FT	SQUARE FEET
SY OR SQ YD	SQUARE YARD
STD	STANDARD
SDD	STANDARD DETAIL DRAWINGS
STH	STATE TRUCK HIGHWAYS
STA	STATION
SSD	STOPPING SIGHT DISTANCE
SS	STORM SEWER
SPP	STRUCTURAL PLATE PIPE
SPPA	STRUCTURAL PLATE PIPE ARCH
STR	STRUCTURE OR STRUCTURAL
SUBD	SUBDIVISION
SE	SUPERELEVATION
SURF	SURFACE
SL OR S/L	SURVEY LINE
T	TANGENT
TEL	TELEPHONE
TEMP	TEMPORARY
TLE	TEMPORARY LIMITED EASEMENT
TPM	TEMPORARY PAVEMENT MARKING
TPMRT	TEMPORARY PAVMENT MARKING, REMOVEABLE TAPE
MBM	THOUSAND FEET BOARD MEASURE
TC	TOP OF CURB
T OR TN	TOWN
TRANS	TRANSITION
TL OR T/L	TRANSIT LINE
T	TRUCKS (PERCENT OF)
TYP	TYPICAL
UNCL	UNCLASSIFIED
UG	UNDERGROUND CABLE
USH	UNITED STATES HIGHWAY
VAR	VARIABLE
V	VELOCITY OR DESIGN SPEED
VERT	VERTICAL
VC	VERTICAL CURVE
VIT	VITRIFIED
VOL	VOLUME
WM	WATER MAIN
WV	WATER VALVE
W	WELL
W	WEST
WB	WESTBOUND
YD	YARD

UTILITY CONTACTS

CITY OF SUPERIOR
SANITARY SEWER SYSTEM (PUBLIC WORKS)
SUPERIOR, WISCONSIN 54880
TELEPHONE: (715) 394-0333
ATTENTION: PAUL KING (CITY ENGINEER)

SUPERIOR WATER, LIGHT & POWER CO.
1230 TOWER AVE.
SUPERIOR, WISCONSIN 54880
TELEPHONE: (715) 394-5511
ATTENTION: DAVID SMITH (ELECTRIC)
ATTENTION: DALE GROTHE (WATER & GAS)

AMERITECH
304 S. DEWEY STREET, 4TH FLOOR
EAU CLAIRE, WISCONSIN 54703
TELEPHONE: (715) 839-5819
ATTENTION: PAM PARKER

BRESNAN COMMUNICATIONS
302 E. SUPERIOR ST.
DULUTH, MINNESOTA 55802
TELEPHONE: (218) 722-2815
ATTENTION: JIM MATUSZEWSKI

MURPHY OIL COMPANY
2407 STINSON AVENUE
P.O. BOX 2066
SUPERIOR, WISCONSIN 54880
TELEPHONE: (715) 398-8235
ATTENTION: WILLIAM CHELLEW

DIGGERS HOTLINE
2040 WEST WISCONSIN AVENUE
SUITE 10
MILWAUKEE, WISCONSIN 53233
TELEPHONE: 1-800-242-8511

DNR LIAISON
HWY 70 W. P.O. BOX 309
SPOONER, WISCONSIN 54801
TELEPHONE: (715) 635-4228
ATTENTION: DAN MICHELS

GENERAL NOTES

ELEVATIONS SHOWN ON THE PLAN ARE REFERENCED TO THE USGS DATUM

WHEN THE QUANTITY OF THE ITEMS OF BASE OR SURFACE COURSE IS MEASURED FOR PAYMENT BY THE TON, THE DEPTH OR 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.

THE LOCATION 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.

IN PERFORMANCE OF THE WORK UNDER THE ITEMS "CLEARING" AND "GRUBBING" NO TREES OR SHRUBS ARE TO BE REMOVED WITHOUT THE APPROVAL OF THE ENGINEER.

CURVE DATA IS BASED ON THE ARC DEFINITION.

ALL UTILITIES WILL BE MOVED BY THEIR OWNERS WHERE REQUIRED.

THE EXACT LOCATION OF THE EROSION CONTROL DEVICES WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.

DISTURBED AREAS WITHIN THE CONSTRUCTION LIMITS, EXCLUDING ROADBED, ETC. ARE TO BE FERTILIZED, SEEDED, OR SODDED.

SEED MIXTURE #10 SHALL BE USED.

BEARINGS SHOWN ON THE PLANS ARE GRID BEARINGS TO THE NEAREST SECOND.

THE EXACT LOCATION OF P.E.'S AND C.E.'S SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.

SIGN PLATE DETAILS SHALL BE IN ACCORDANCE WITH THE FEDERAL HIGHWAY ADMINISTRATION "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES" UNLESS OTHERWISE PROVIDED FOR IN THE PLAN.

EXCAVATION BELOW SUBGRADE (EBS) IS NOT USED TO BALANCE YARDAGE AND IS NOT SHOWN ON CROSS SECTIONS BUT IS MEASURED AND PAID FOR AS UNCLASSIFIED EXCAVATION.

CONSTRUCTION PERMITS FOR DRIVEWAY CONSTRUCTION HAVE BEEN OBTAINED AND SUCH RIGHTS WILL BE EXTENDED TO THE CONTRACTOR.

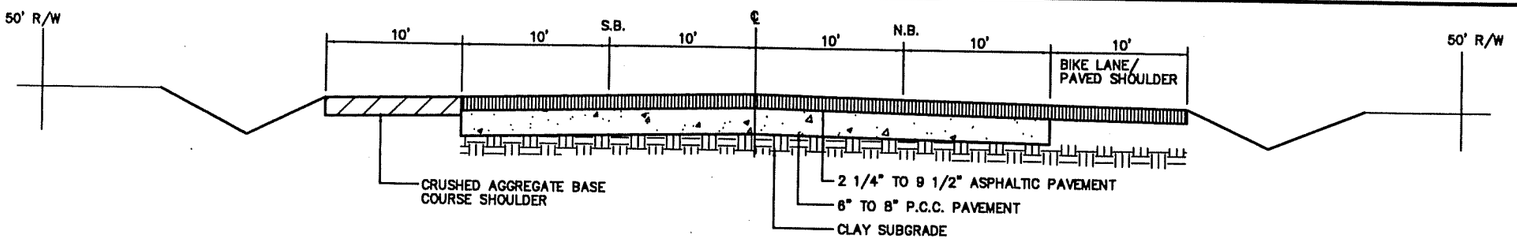
TACK COAT HAS BEEN ESTIMATED AT AN APPLICATION RATE OF 0.025 GALLONS PER SQUARE YARD AND SHALL BE PLACED BETWEEN LAYERS OF ASPHALTIC PAVEMENT AND BETWEEN THE EXISTING CONCRETE PAVEMENT AND ASPHALTIC PAVEMENT.

STANDARD DETAIL DRAWINGS

8A5-11a, b, & c	INLET COVERS
8A5-11d	INLET AND MANHOLE COVERS
8A6-3	CATCH BASINS, TYPE 1 & 2
8A7-3	CATCH BASINS, TYPE 3 & 5
8B6-3	MANHOLES, TYPE 1
8B7-3	MANHOLES, TYPES 2 AND 3
8C1-5	INLETS, TYPES 1, 2, 3 AND 4
8D1-11	CONCRETE CURB, CONCRETE CURB AND GUTTER AND PAVEMENT TIES
8D4-3	CONCRETE SURFACE DRAIN & ASPHALTIC FLUME
8D5-8	CURB RAMPS
8D15-1a	EDGEDRAIN OUTLET DETAILS
8D15-1b	EDGEDRAIN AND CRUSHED AGGREGATE BASE COURSE, OPEN GRADED NO. 1 OR NO. 2
8E8-2	TYPICAL INSTALLATIONS OF EROSION BALES
8E9-4	SILT FENCE
8F1-11	APRON ENDWALLS FOR CULVERT PIPE
9B2-5	CONDUIT
9B4-1	PULL BOX
9C3-1	CAST BASES
9C5-1	CONCRETE CONTROL CABINET BASES
9D1-1	CABINET SERVICE INSTALLATION
9D2-1	SIGNAL OR LIGHTING CONTROL CABINET
9E1-1a	POLE MOUNTINGS FOR TRAFFIC SIGNALS, TYPE 2
9E1-1b	POLE MOUNTINGS FOR TRAFFIC SIGNALS & LIGHT UNITS, TYPE 3
9E1-1c	POLE MOUNTING FOR TRAFFIC SIGNALS AND LIGHTING UNITS, TYPE 4
9E1-1e	HARDWARE DETAILS FOR POLE MOUNTINGS
9E3-1	NON-FREEWAY LIGHTING UNIT POLE WIRING
9F2-1	LOOP DETECTOR INSTALLED IN NEW CONCRETE PAVEMENT 8X8X8-INCH JUNCTION BOX.
9F3-1	LOOP DETECTOR INSTALLED IN NEW CONCRETE PAVEMENT 8X8X8-INCH JUNCTION BOX (MULTIPLE LEAD-OUT).
9F8-1	LOOP DETECTOR PLACED IN CRUSHED AGGREGATE BASE (NEW ASPHALTIC PAVEMENT)
9F12-1	LOOP DETECTOR INSTALLED IN EXISTING CONCRETE PAVEMENT
9F13-1	LOOP DETECTOR INSTALLED IN EXISTING ASPHALTIC PAVEMENT
13C1-9	CONCRETE PAVEMENT LONGITUDINAL JOINTS AND PAVEMENT TIES
13C13-1	DOWELED NON-REINFORCED CONCRETE PAVEMENT (TRANSVERSE JOINTS SPACED AT 20' AND NORMAL)
14A2-1	TREE PLANTING DETAIL
14B3-2	CLASS "B" STEEL PLATE BEAM GUARD
14B7-9A	TEMPORARY PRECAST CONCRETE BARRIER
14B7-9b	PRECAST CONCRETE BARRIER END SECTION AND PORTABLE CRASH CUSHION
15C2-3	BARRICADES AND TRAFFIC CONTROL FOR ROAD CLOSURES
15C7-5a	PAVEMENT MARKING SYMBOLS
15C8-7a	PAVEMENT MARKING (MAINLINE)
15C8-7b	PAVEMENT MARKING (INTERSECTIONS)
15C8-7c	PAVEMENT MARKING (LEFT TURN LANE)
15C8-7d	PAVEMENT MARKING (ISLANDS, STOP LINE & CROSS WALK)
15C9-3	PAVEMENT MARKING DETAILS FOR RAILROAD-HIGHWAY GRADE CROSSINGS
15C12-2	TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)

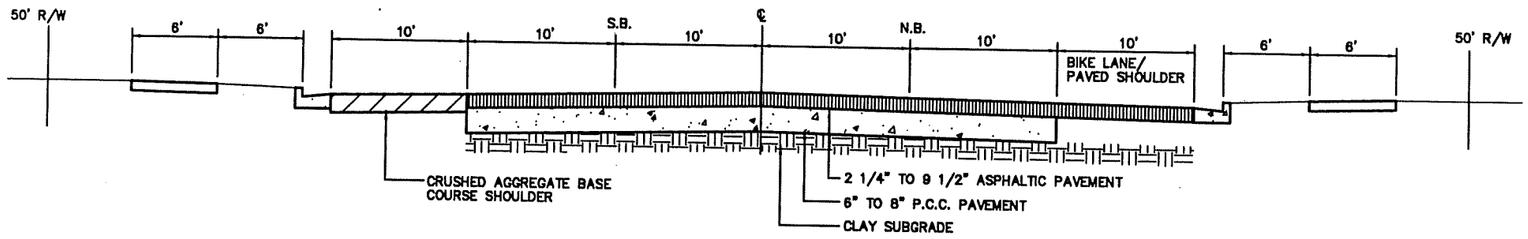
STATE PROJECT NUMBER	SHEET NO.
8010-07-73	2.1

TYPICAL SECTIONS



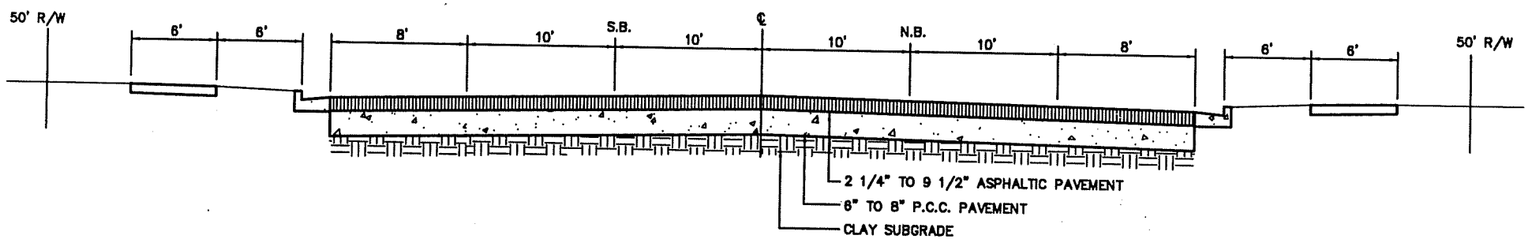
EXISTING RURAL SECTION

STA. 606+50 TO STA. 613+25



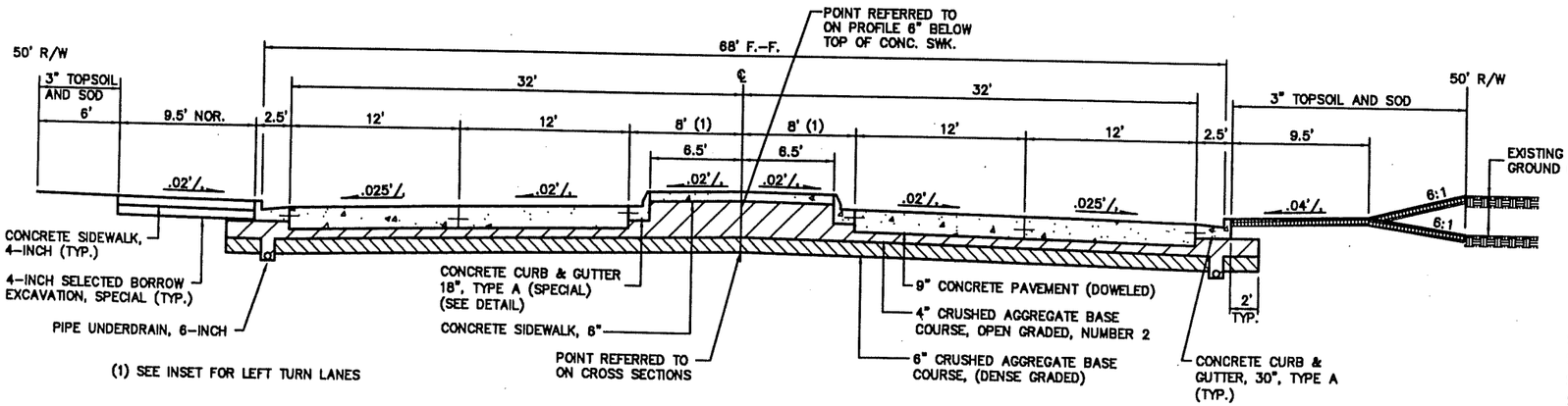
EXISTING URBAN SECTION

STA. 613+25 TO STA. 635+80



EXISTING URBAN SECTION

STA. 635+80 TO STA. 689+50

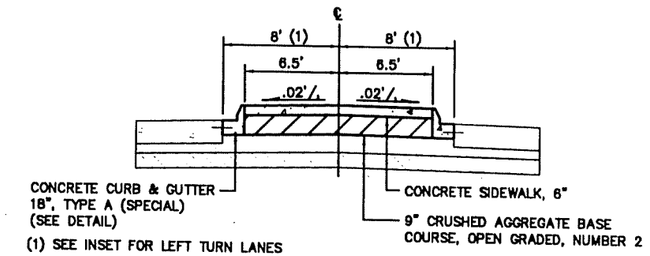


(1) SEE INSET FOR LEFT TURN LANES

TYPICAL FINISHED SECTION

RAISED MEDIAN

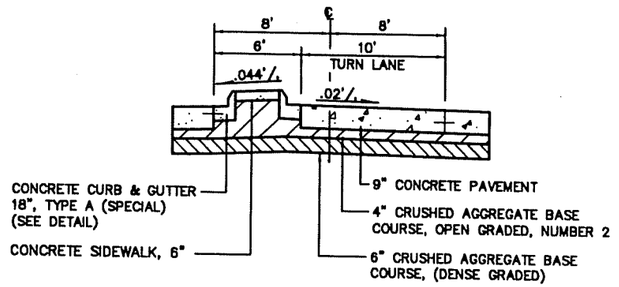
STA. 606+50 TO STA. 608+88



(1) SEE INSET FOR LEFT TURN LANES

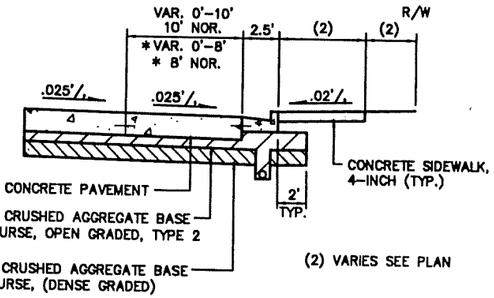
RAISED MEDIAN SECTION

STA. 602+00 TO STA. 606+50



RAISED MEDIAN WITH LEFT TURN LANE

STA. 606+50 TO STA. 608+38	STA. 631+09 TO STA. 635+00
STA. 609+38 TO STA. 609+85	STA. 635+83 TO STA. 640+70
STA. 611+35 TO STA. 612+20	STA. 657+42 TO STA. 661+32
STA. 618+49 TO STA. 621+70	STA. 662+15 TO STA. 666+08
STA. 622+65 TO STA. 624+65	STA. 683+62 TO STA. 687+62



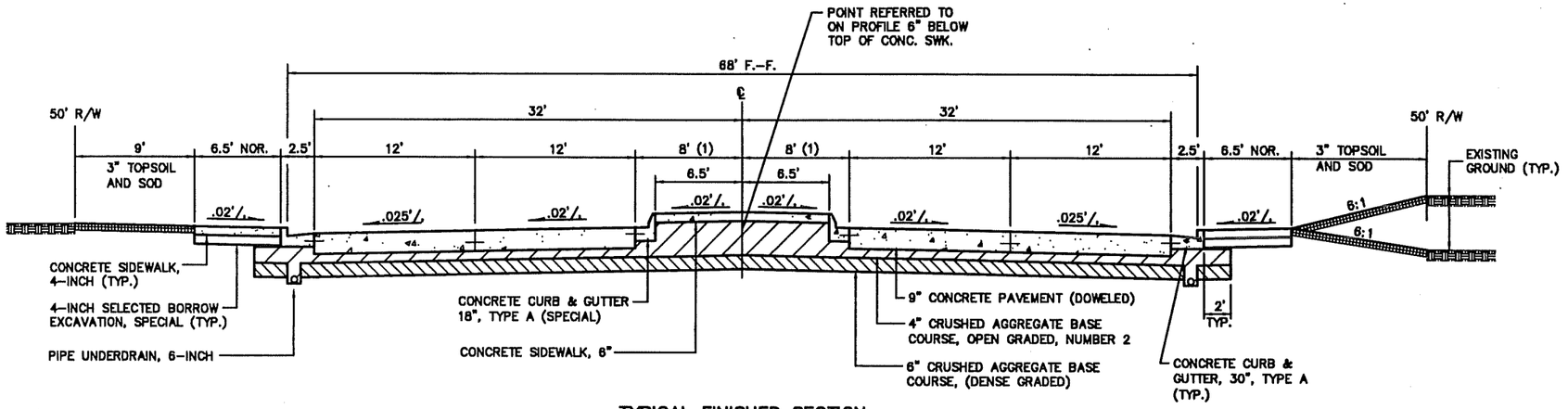
(2) VARIES SEE PLAN

TYPICAL BUS TURNOUT / RIGHT TURN LANE

STA. 607+35 TO STA. 608+88, RT.	STA. 632+75 TO STA. 635+41, RT.
STA. 607+40 TO STA. 608+88, LT.	STA. 633+90 TO STA. 635+41, LT.
STA. 618+02 TO STA. 619+50, RT.	* STA. 635+41 TO STA. 636+85, RT.
STA. 620+60 TO STA. 622+23, LT.	STA. 635+41 TO STA. 638+10, LT.
STA. 622+23 TO STA. 623+65, RT.	* STA. 646+80 TO STA. 648+40, LT.
STA. 625+60 TO STA. 627+00, LT.	* STA. 652+84 TO STA. 654+30, LT.
STA. 628+25 TO STA. 629+70, LT.	* STA. 658+75 TO STA. 660+50, LT.
STA. 629+25 TO STA. 630+61, RT.	* STA. 683+24 TO STA. 684+65, RT.

STATE PROJECT NUMBER	SHEET NO.
8010-07-73	2.2

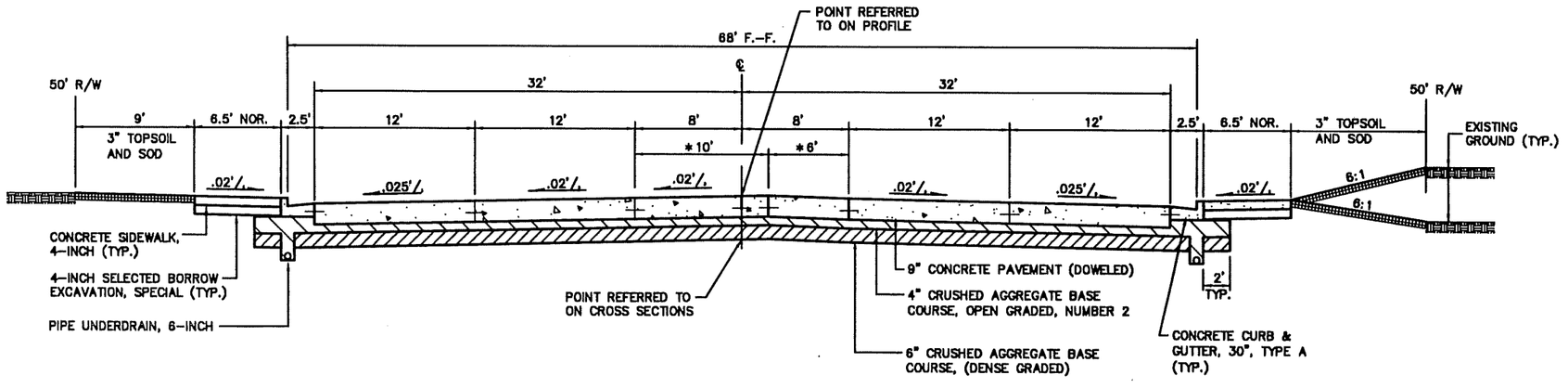
TYPICAL SECTIONS



(1) SEE INSET FOR LEFT TURN LANES

TYPICAL FINISHED SECTION
RAISED MEDIAN

STA. 608+88 TO STA. 609+85
STA. 611+35 TO STA. 641+11
STA. 657+04 TO STA. 661+74



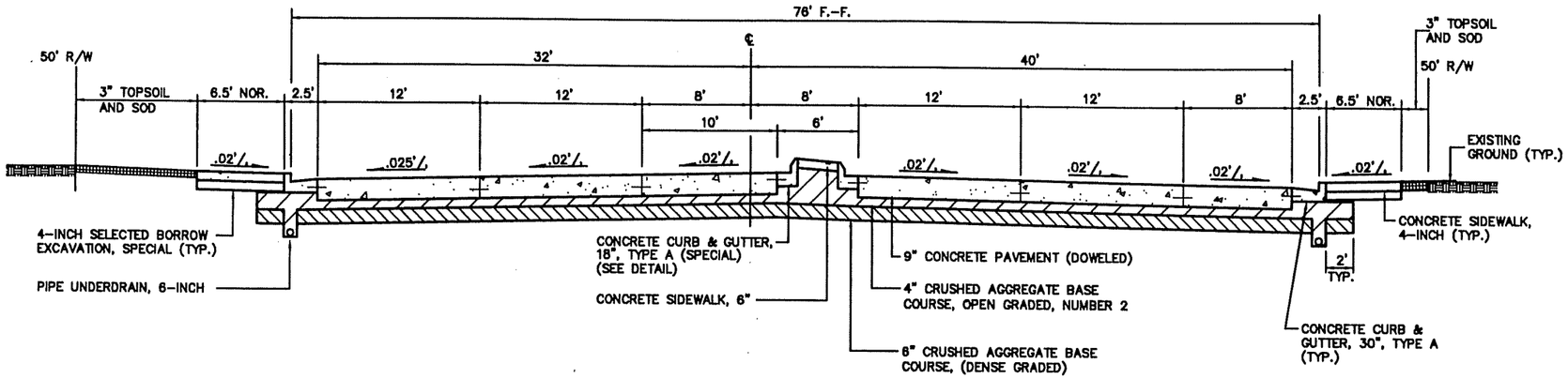
TYPICAL FINISHED SECTION
FLUSH MEDIAN

* STA. 609+85 – STA. 611+35
STA. 641+11 – STA. 657+04
STA. 688+11 – STA. 688+75

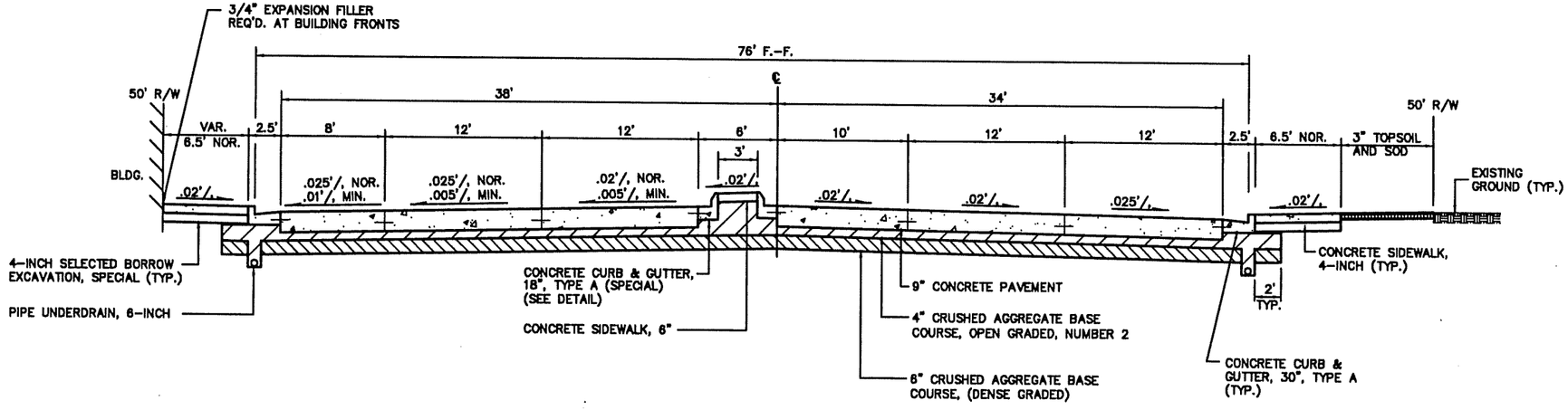
2300TYP2

STATE PROJECT NUMBER	SHEET NO.
8010-07-73	2.3

TYPICAL SECTIONS



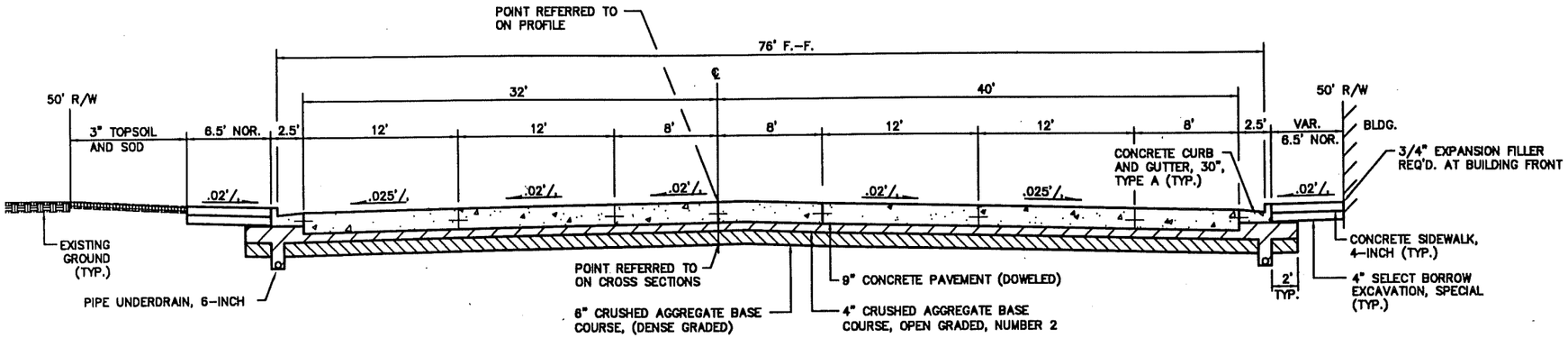
TYPICAL FINISHED SECTION
WITH PARKING (RT. SIDE)
STA. 661+74 – STA. 666+46



TYPICAL FINISHED SECTION
WITH PARKING (LT. SIDE)
STA. 683+24 – STA. 688+11

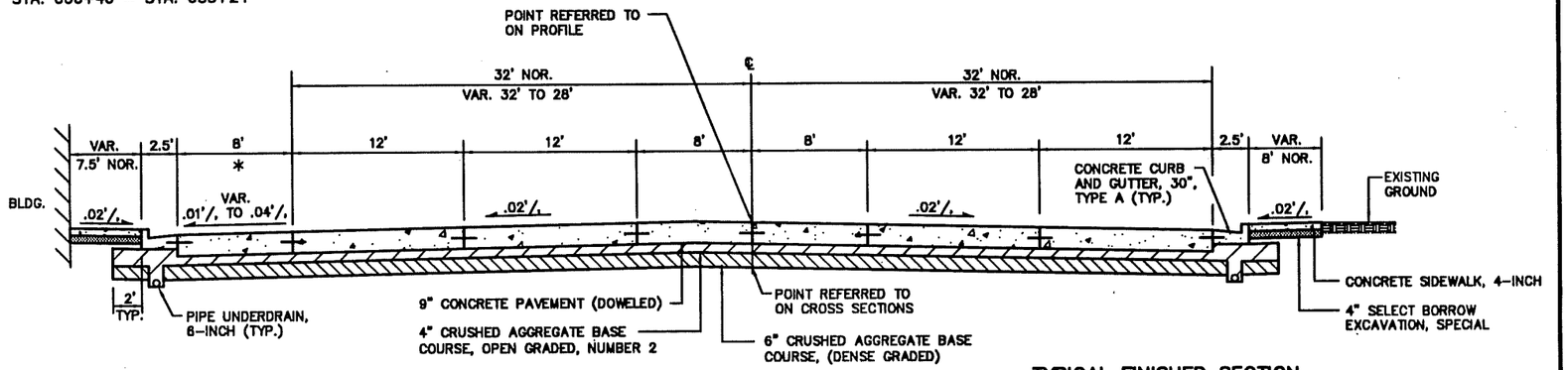
STATE PROJECT NUMBER	SHEET NO.
8010-07-73	2.4

TYPICAL SECTIONS



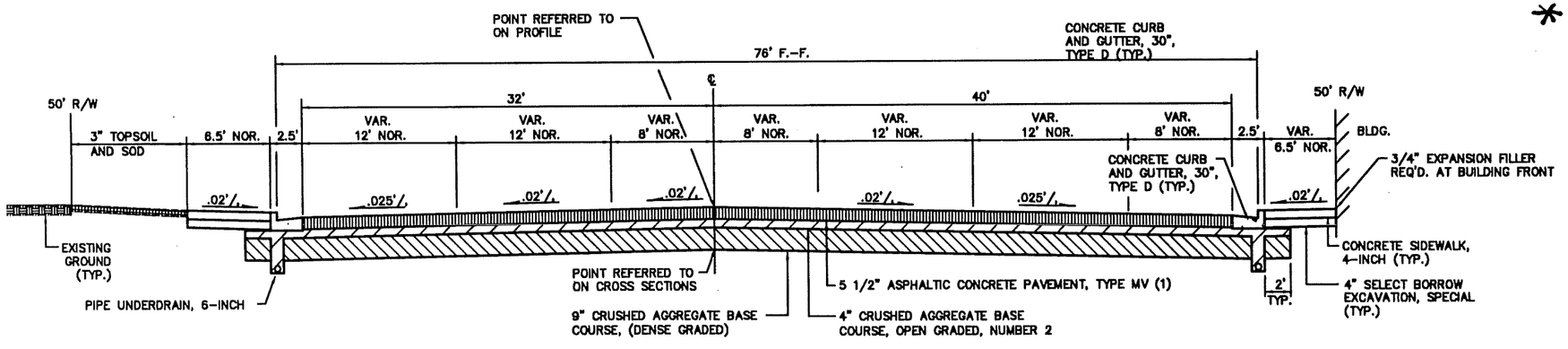
TYPICAL FINISHED SECTION
WITH PARKING (RT. SIDE)

STA. 666+46 – STA. 683+24



TYPICAL FINISHED SECTION
BELKNAP STREET

STA. 9+25 TO STA. 9+70
STA. 10+34 TO STA. 16+50
* STA. 10+34 TO STA. 13+85.52



(1) 1 1/2" SURFACE
2" UPPER BINDER
2" LOWER BINDER

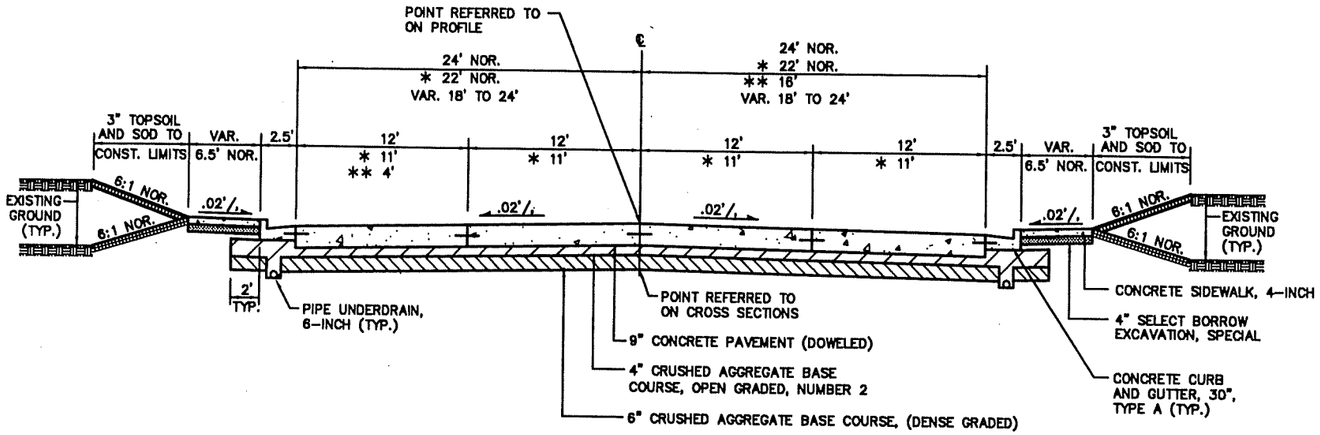
TYPICAL FINISHED SECTION
WITH PARKING (RT. SIDE)

STA. 688+75 – STA. 689+50

2320TYP4

STATE PROJECT NUMBER	SHEET NO.
8010-07-73	2.5

TYPICAL SECTIONS

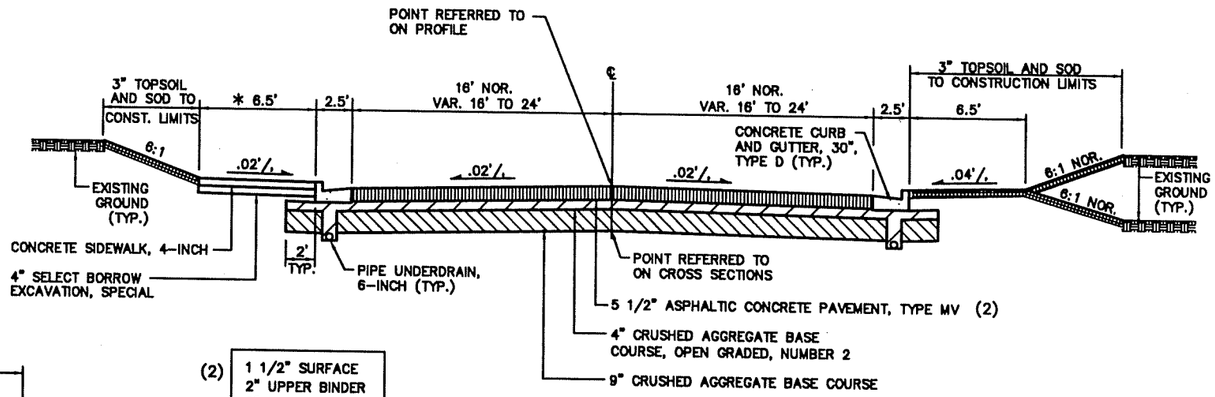


TYPICAL FINISHED SECTION

31ST STREET
STA. 49+00 TO STA. 49+68
** STA. 50+32 TO STA. 51+00

28TH STREET
STA. 278+25 TO STA. 279+68
STA. 200+32 TO STA. 280+85

21ST STREET
* STA. 208+00 TO STA. 209+68
* STA. 210+32 TO STA. 212+10

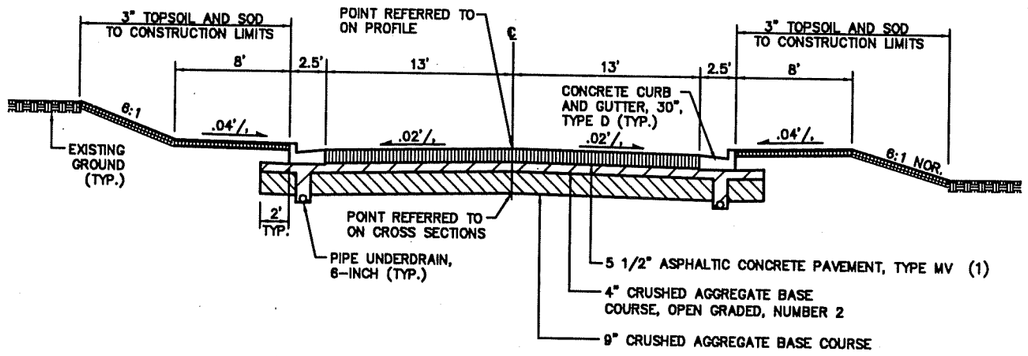


(2) 1 1/2" SURFACE
2" UPPER BINDER
2" LOWER BINDER

TYPICAL FINISHED SECTION

31ST STREET
STA. 41+80 TO STA. 49+00
STA. 51+00 TO STA. 52+50

28TH STREET
* STA. 277+75 TO STA. 278+25
* STA. 280+85 TO STA. 282+35



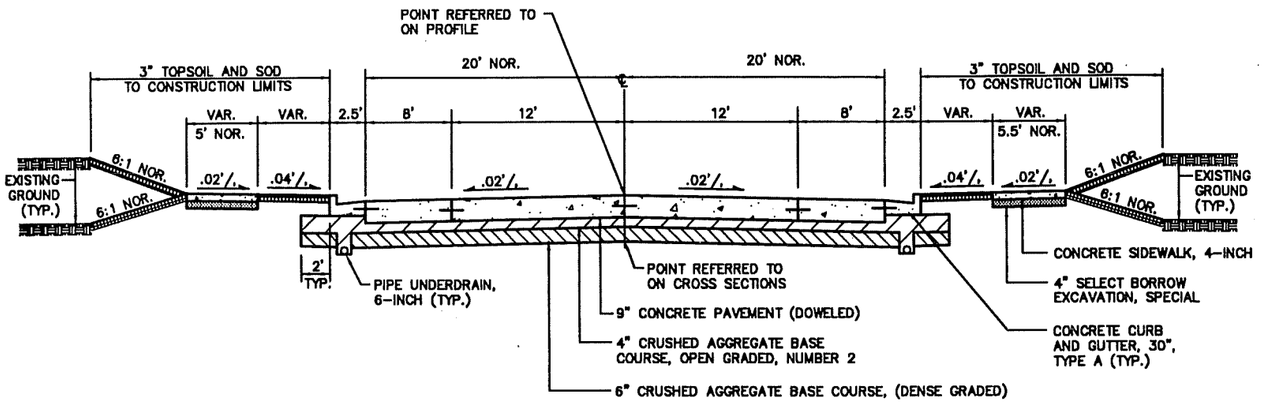
(1) 1 1/2" SURFACE
2" UPPER BINDER
2" LOWER BINDER

TYPICAL FINISHED SECTION
WEST FRONTAGE ROAD
STA. 47+18.61 TO STA. 54+98.71 BK.
STA. 55+23.39 AH. TO STA. 64+43

2327TYP5

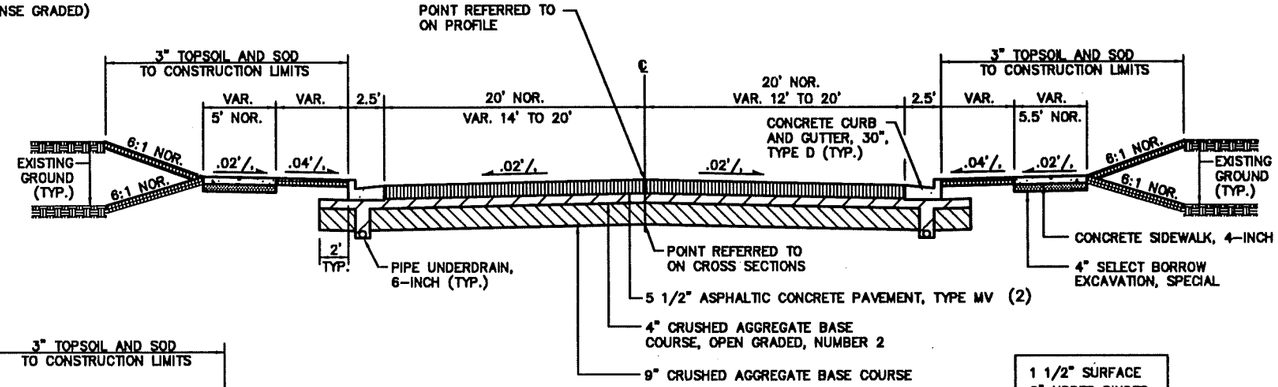
STATE PROJECT NUMBER	SHEET NO.
8010-07-73	2.6

TYPICAL SECTIONS



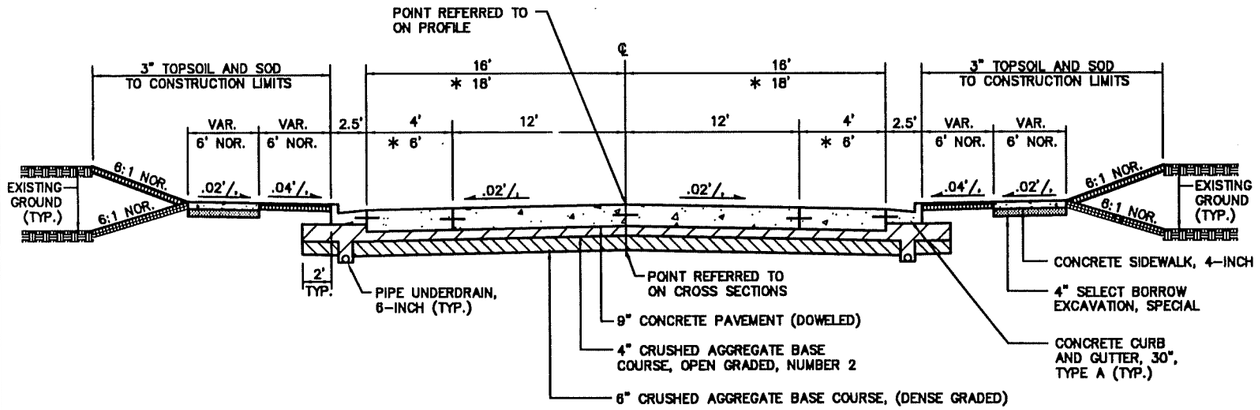
TYPICAL FINISHED SECTION
OGDEN AVENUE

STA. 99+00 TO STA. 99+68
STA. 100+32 TO STA. 101+25



TYPICAL FINISHED SECTION
OGDEN AVENUE

STA. 97+75 TO STA. 99+00



TYPICAL FINISHED SECTION

34TH STREET
* STA. 39+10 TO STA. 39+68
* STA. 40+32 TO STA. 40+87

32ND STREET
STA. 320+32 TO STA. 320+75
STA. 57+82.1 W. FR. RD., 13' LT. TO 118' LT.

29TH STREET
STA. 290+32 TO STA. 290+75

26TH STREET
* STA. 259+75 TO STA. 259+68
STA. 260+32 TO STA. 261+00

24TH STREET
STA. 239+25 TO STA. 239+68
STA. 240+32 TO STA. 240+75

23RD STREET
STA. 229+25 TO STA. 229+68
STA. 230+32 TO STA. 230+75

22ND STREET
STA. 219+25 TO STA. 219+68
STA. 220+32 TO STA. 220+75

20TH STREET
STA. 199+25 TO STA. 199+68
STA. 200+32 TO STA. 200+75

19TH STREET
STA. 189+25 TO STA. 189+68
STA. 190+32 TO STA. 190+75

18TH STREET
STA. 179+25 TO STA. 179+68
STA. 180+32 TO STA. 181+00

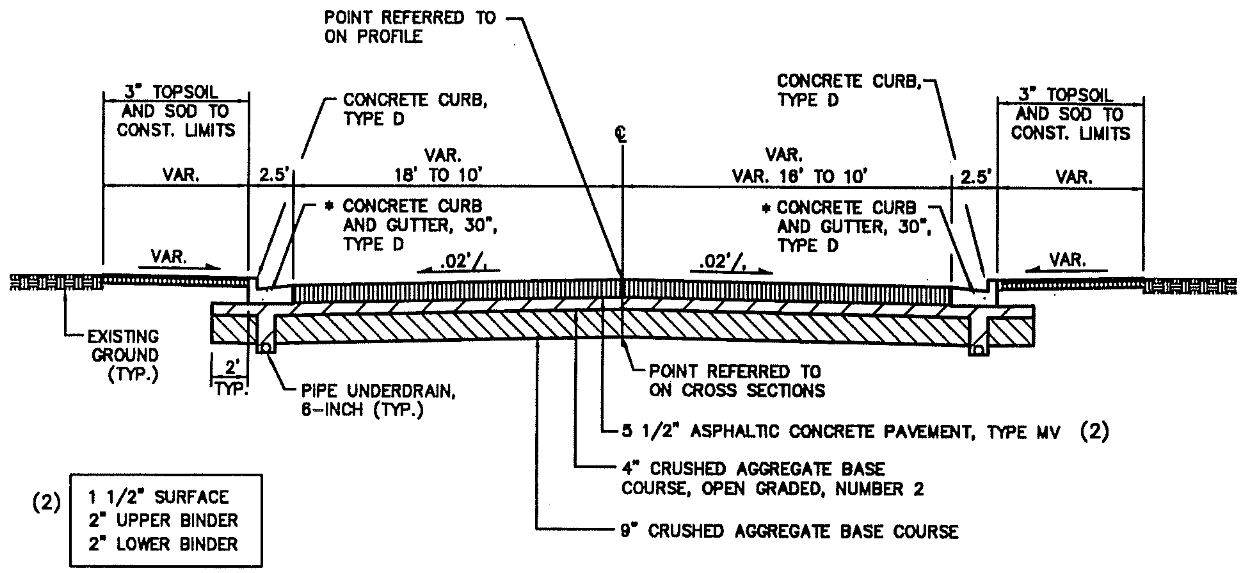
17TH STREET
STA. 169+25 TO STA. 169+68
STA. 170+32 TO STA. 170+75

16TH STREET
STA. 159+25 TO STA. 159+68
STA. 160+32 TO STA. 160+75

2320TYP6

STATE PROJECT NUMBER	SHEET NO.
8010-07-73	2.7

TYPICAL SECTIONS



TYPICAL FINISHED SECTION

29TH STREET
* STA. 290+75 TO STA. 291+25, RT.
* STA. 290+75 TO STA. 291+35, LT.

26TH STREET
STA. 259+00 TO STA. 259+75, RT.

24TH STREET
STA. 240+75 TO STA. 241+00

22ND STREET
STA. 220+75 TO STA. 221+25

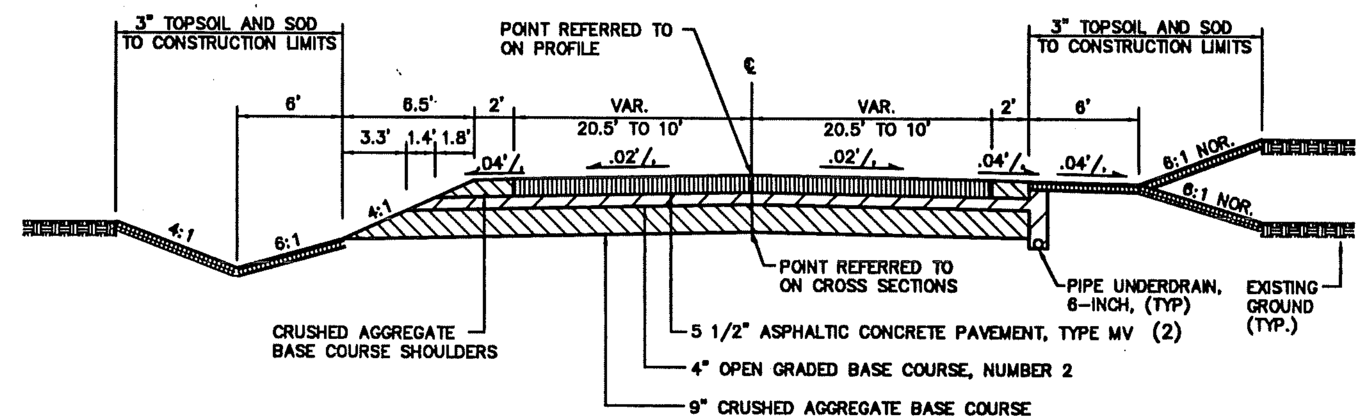
20TH STREET
STA. 200+75 TO STA. 201+00

19TH STREET
STA. 188+75 TO STA. 189+25
STA. 190+75 TO STA. 191+00

17TH STREET
STA. 169+00 TO STA. 169+25
STA. 170+75 TO STA. 171+00

16TH STREET
STA. 159+00 TO STA. 159+25
STA. 160+75 TO STA. 161+00

KMART ENTRANCE
STA. 628+00, LT.



TYPICAL FINISHED SECTION

32ND STREET
STA. 320+75 TO STA. 321+00

29TH STREET
STA. 291+25 TO STA. 291+50, RT.
STA. 291+35 TO STA. 291+50, LT.

26TH STREET
STA. 259+00 TO STA. 259+75, LT.

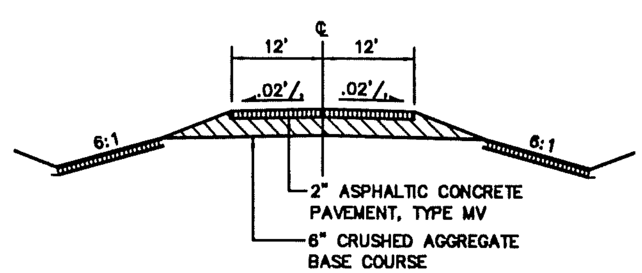
24TH STREET
STA. 239+00 TO STA. 239+25

23RD STREET
STA. 228+75 TO STA. 229+25
STA. 230+75 TO STA. 231+00

22ND STREET
STA. 218+75 TO STA. 219+25

20TH STREET
STA. 199+00 TO STA. 199+25

18TH STREET
STA. 179+00 TO STA. 179+25

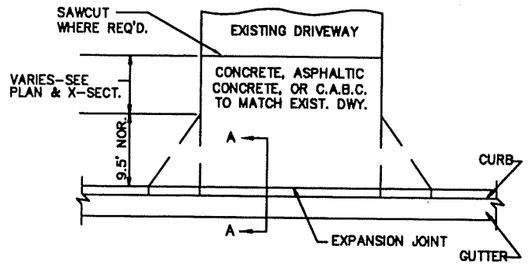


C.E. STA. 51+22 W. FR. RD., LT.
23.5' LT. TO 93' LT.

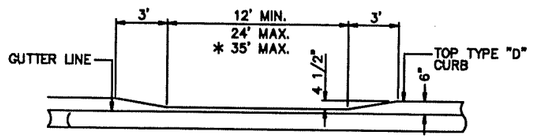
C.E. STA. 53+57 W. FR. RD., RT.
23.5' LT. TO 82' RT.

STATE PROJECT NUMBER	SHEET NO.
8010-07-73	2.8

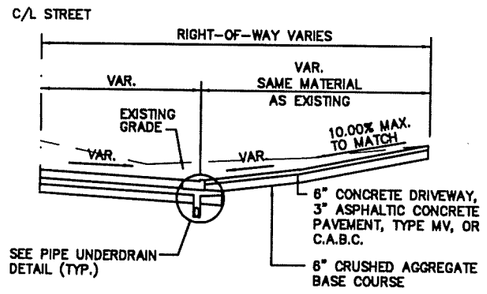
DETAILS



PLAN



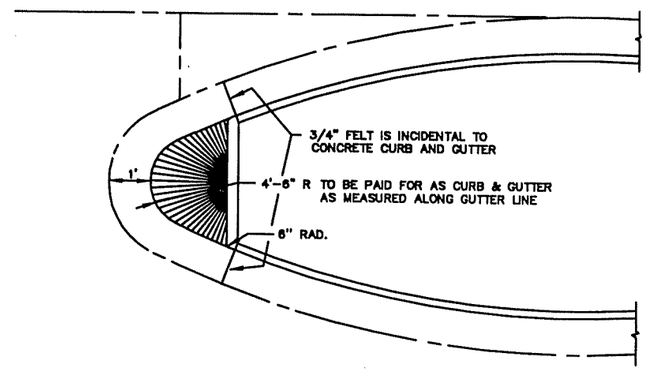
ELEVATION

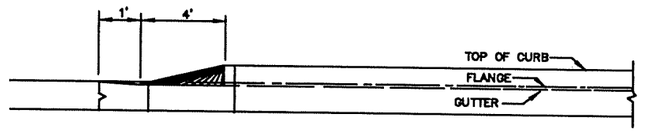


SECTION A-A

* COMMERCIAL DRIVEWAY ONLY

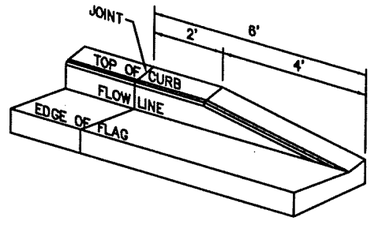
TYPICAL RESIDENTIAL & COMMERCIAL DRIVEWAY DETAIL



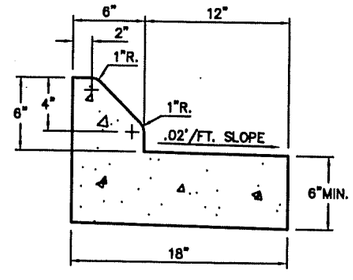


DETAIL OF ISLAND NOSE

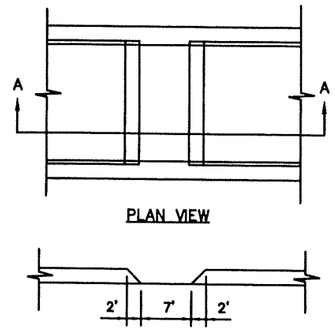
(TO BE USED FOR ALL ISLAND NOSE RADII)



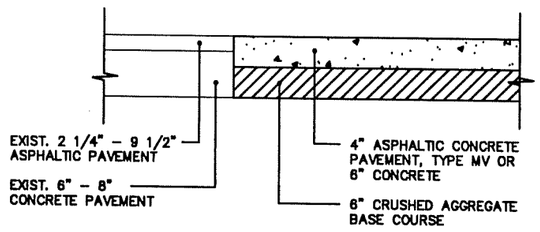
CURB END TREATMENT DETAIL



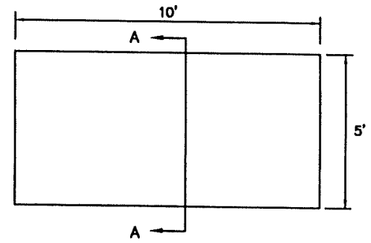
CONCRETE CURB & GUTTER 18", TYPE A (SPECIAL)

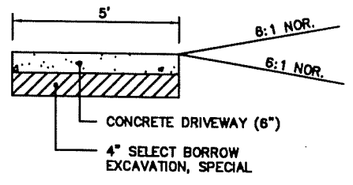


RAISED MEDIAN CROSSWALK DETAIL



BASE PATCHING DETAIL





SECTION A-A

BUS SHELTER PAD DETAIL

RUNOFF COEFFICIENT TABLE

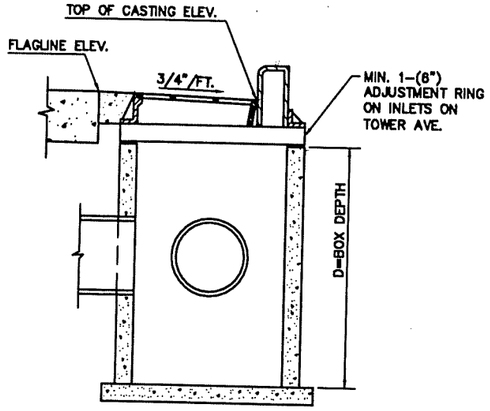
	HYDROLOGIC SOIL GROUP											
	A			B			C			D		
	SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)		
LAND USE	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER
ROW CROPS	.08 .22	.16 .30	.22 .38	.12 .26	.20 .34	.27 .44	.15 .30	.24 .37	.33 .50	.19 .34	.28 .41	.38 .56
MEDIAN STRIP-TURF	.19 .24	.20 .28	.24 .30	.19 .25	.22 .28	.28 .33	.20 .26	.23 .30	.30 .37	.20 .27	.25 .32	.30 .40
SIDE SLOPE-TURF			.25 .32			.27 .34			.28 .36			.30 .38
PAVEMENT:	.70 - .95											
ASPHALT	.80 - .95											
CONCRETE	.70 - .80											
BRICK	.75 - .85											
DRIVES, WALKS	.75 - .85											
ROOFS	.75 - .95											
GRAVEL ROADS, SHOULDERS	.40 - .60											

TOTAL PROJECT AREA= 35 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES= 30 ACRES

/LIBR/COEFFTBL.DWG

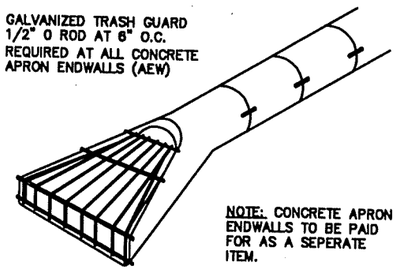
STATE PROJECT NUMBER	SHEET NO.
8010-07-73	2.9

DETAILS

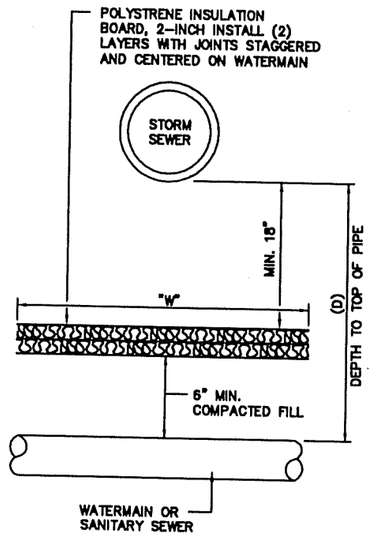


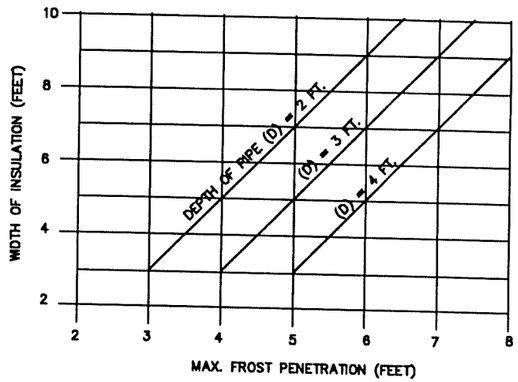
TOP OF CASTING ELEV. = FLAGLINE ELEV.
-0.12'(30°C & G)
-0.10'(DEPRESSION)

INLET GRATE DEPRESSION DETAIL

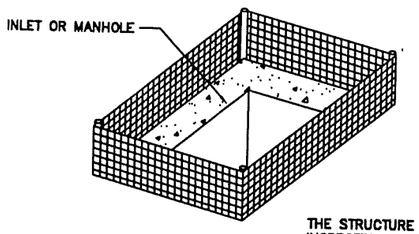


PIPE GRATE DETAIL

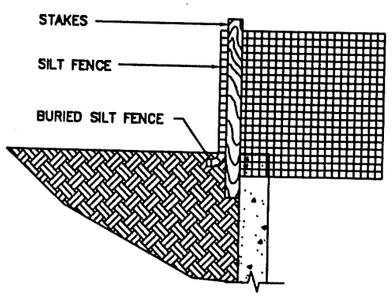




WATERMAIN OR SANITARY SEWER INSULATION DETAIL

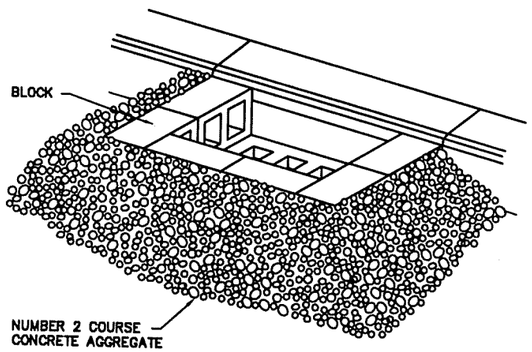


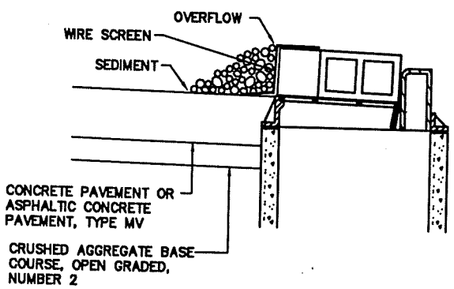
THE STRUCTURE SHALL BE INSPECTED AFTER EACH RAIN AND REPAIRS MADE AS NEEDED.



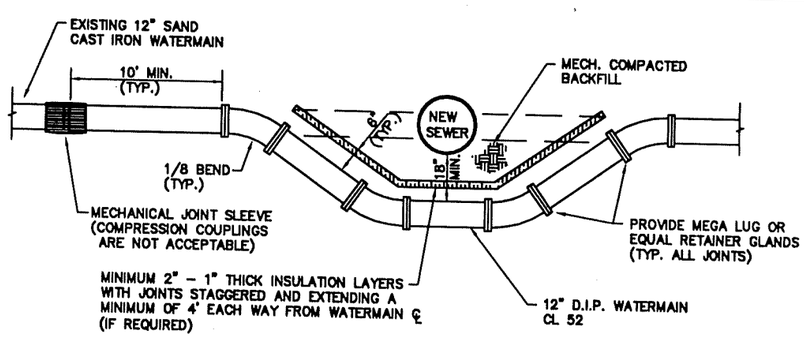
SILT FENCE (MANHOLE & INLET) SEDIMENT FILTER

NOTE: TO BE INSTALLED UPON COMPLETION OF BACKFILLING THE STRUCTURE

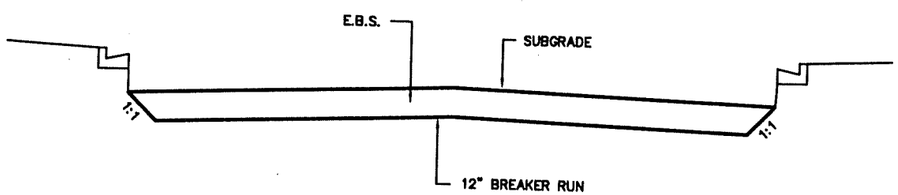




BLOCK AND GRAVEL (MANHOLE & INLET) SEDIMENT FILTER

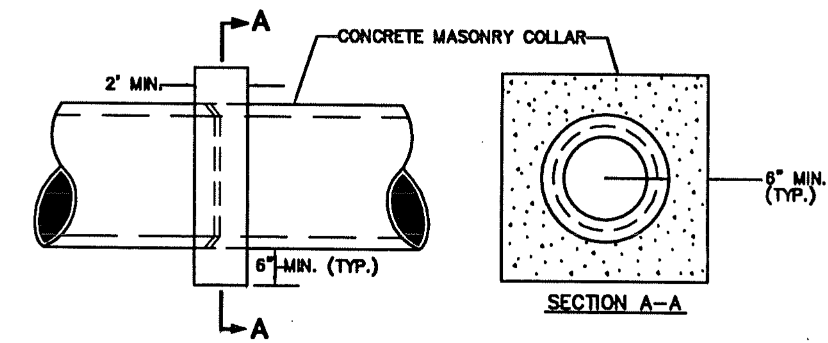


LOWER WATERMAIN DETAIL

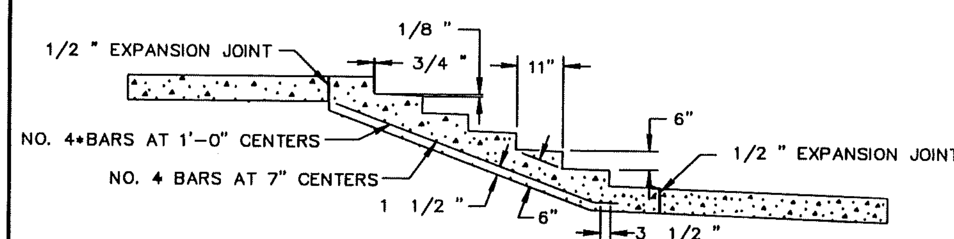


BREAKER RUN DETAIL

STATE PROJECT NUMBER	SHEET NO.
8010-07-73	2.10
DETAILS	

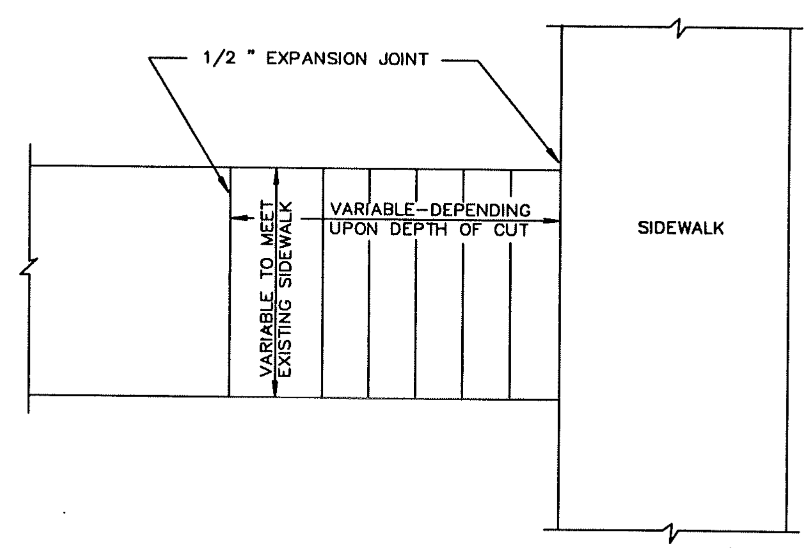


CONCRETE COLLAR DETAIL

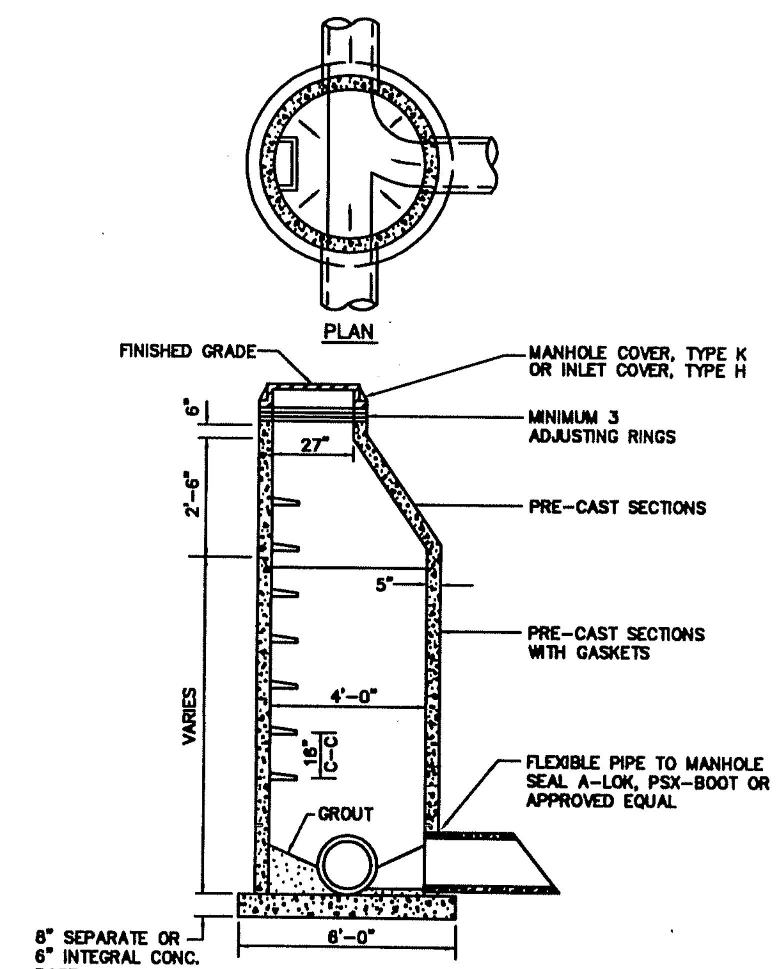


*BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 1 1/2 " CLEAR

SECTION A-A



DETAIL OF CONCRETE STEPS



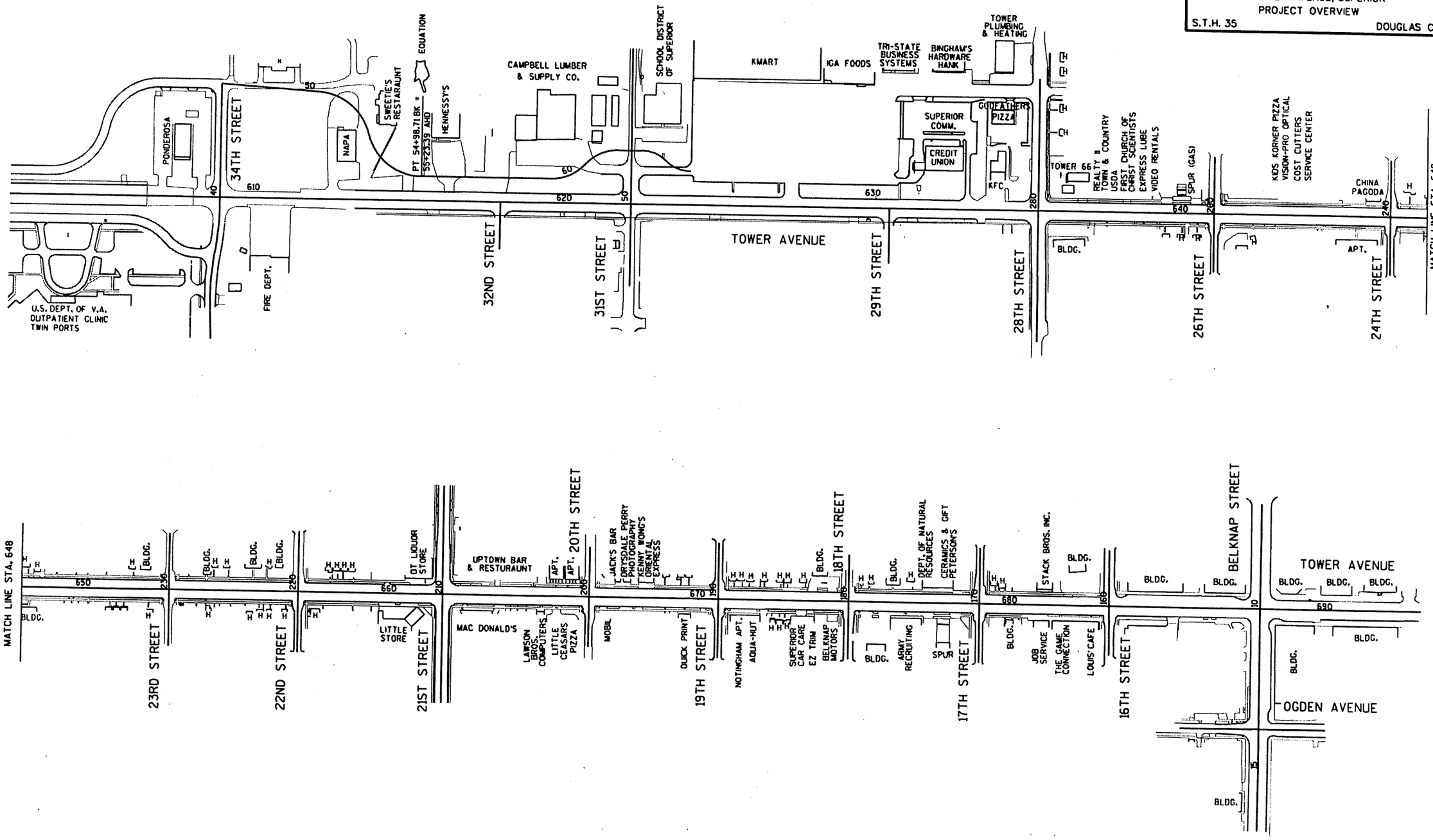
STANDARD SANITARY MANHOLE

(ECCENTRIC)

DRAWING NAME:
LAYERS OFF:
SEH JOB #

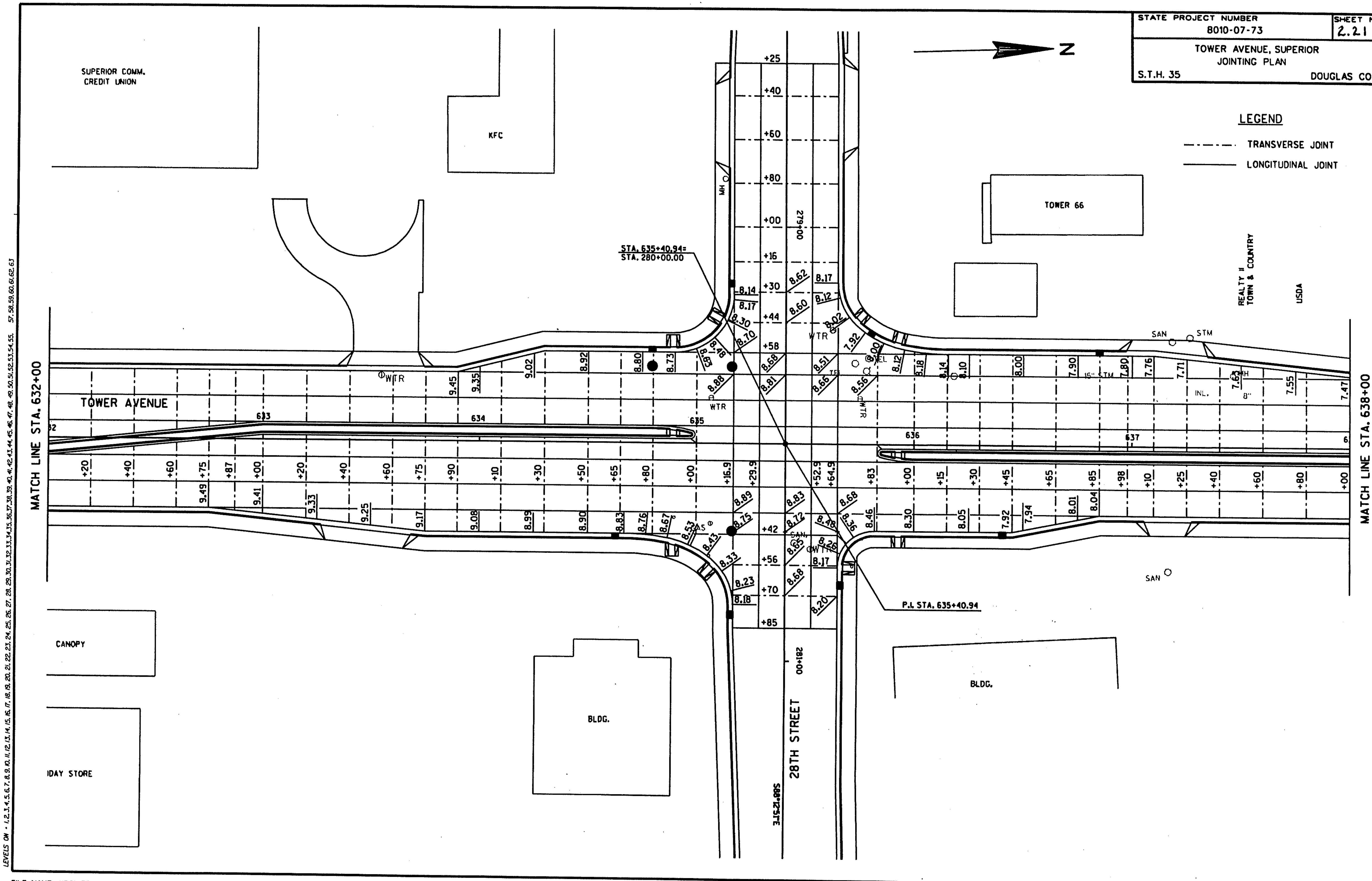
STATE PROJECT NUMBER	SHEET NO
8010-07-73	2.15

TOWER AVENUE, SUPERIOR
PROJECT OVERVIEW
S.T.H. 35 DOUGLAS CO.



LEVELS ON - 1,2,3,4,5,6,7,8,9,10,11,12, 17, 20,21,22,23,24,25,26,27,28, 30, 32,33,34,35,36,37,38,39,40,41,42,43,44, 51,52,53,54,55,56,57,58,59,60,61,62,63

FILE NAME: HDGN:


STATE PROJECT NUMBER
8010-07-73
SHEET NO
2.21
TOWER AVENUE, SUPERIOR
JOINTING PLAN
S.T.H. 35
DOUGLAS CO.
N
LEGEND
TRANSVERSE JOINT
LONGITUDINAL JOINT
SUPERIOR COMM. CREDIT UNION
KFC
TOWER 66
REALTY II TOWN & COUNTRY
USDA
TOWER AVENUE
28TH STREET
MATCH LINE STA. 632+00
MATCH LINE STA. 638+00
STA. 635+40.94= STA. 280+00.00
P.I. STA. 635+40.94
CANOPY
IDAY STORE
BLDG.
BLDG.
LEVELS ON • 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,51,52,53,54,55,57,58,59,60,61,62,63
FILE NAME: HDGN:23202J+7

STATE PROJECT NUMBER	SHEET NO
8010-07-73	2.22

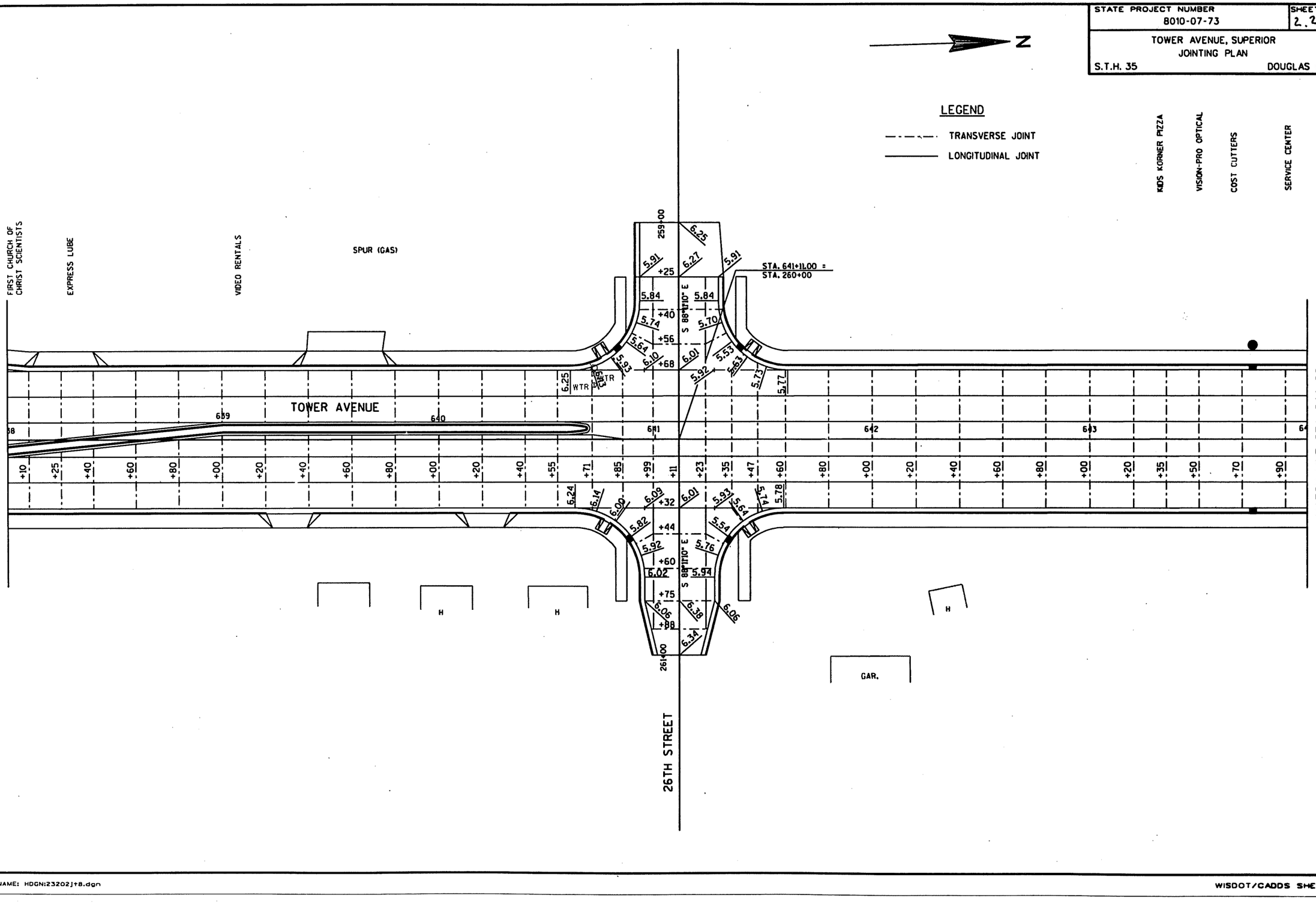
TOWER AVENUE, SUPERIOR
JOINTING PLAN
S.T.H. 35 DOUGLAS CO.

N

LEGEND

TRANSVERSE JOINT

LONGITUDINAL JOINT



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, 57,58,59,60,61,62,63

FILE NAME: HDGN:23202jt8.dgn

STATE PROJECT NUMBER	SHEET NO.
8010-07-73	2.23

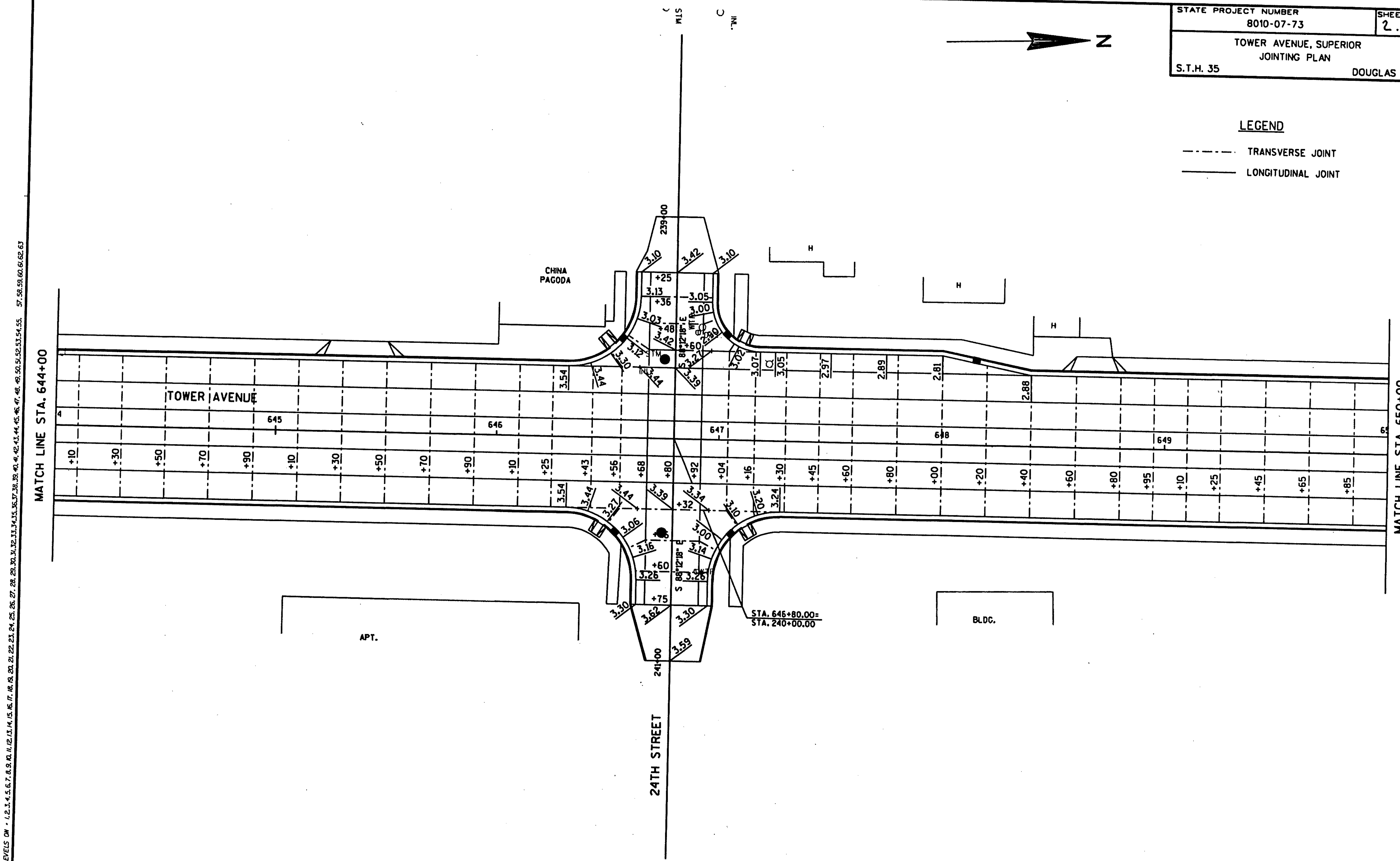
TOWER AVENUE, SUPERIOR
JOINTING PLAN

S.T.H. 35 DOUGLAS CO.

LEGEND

TRANSVERSE JOINT

LONGITUDINAL JOINT



FILE NAME: HDGN:23202J+9.dgn

STATE PROJECT NUMBER	SHEET NO
8010-07-73	2.24

TOWER AVENUE, SUPERIOR
JOINTING PLAN

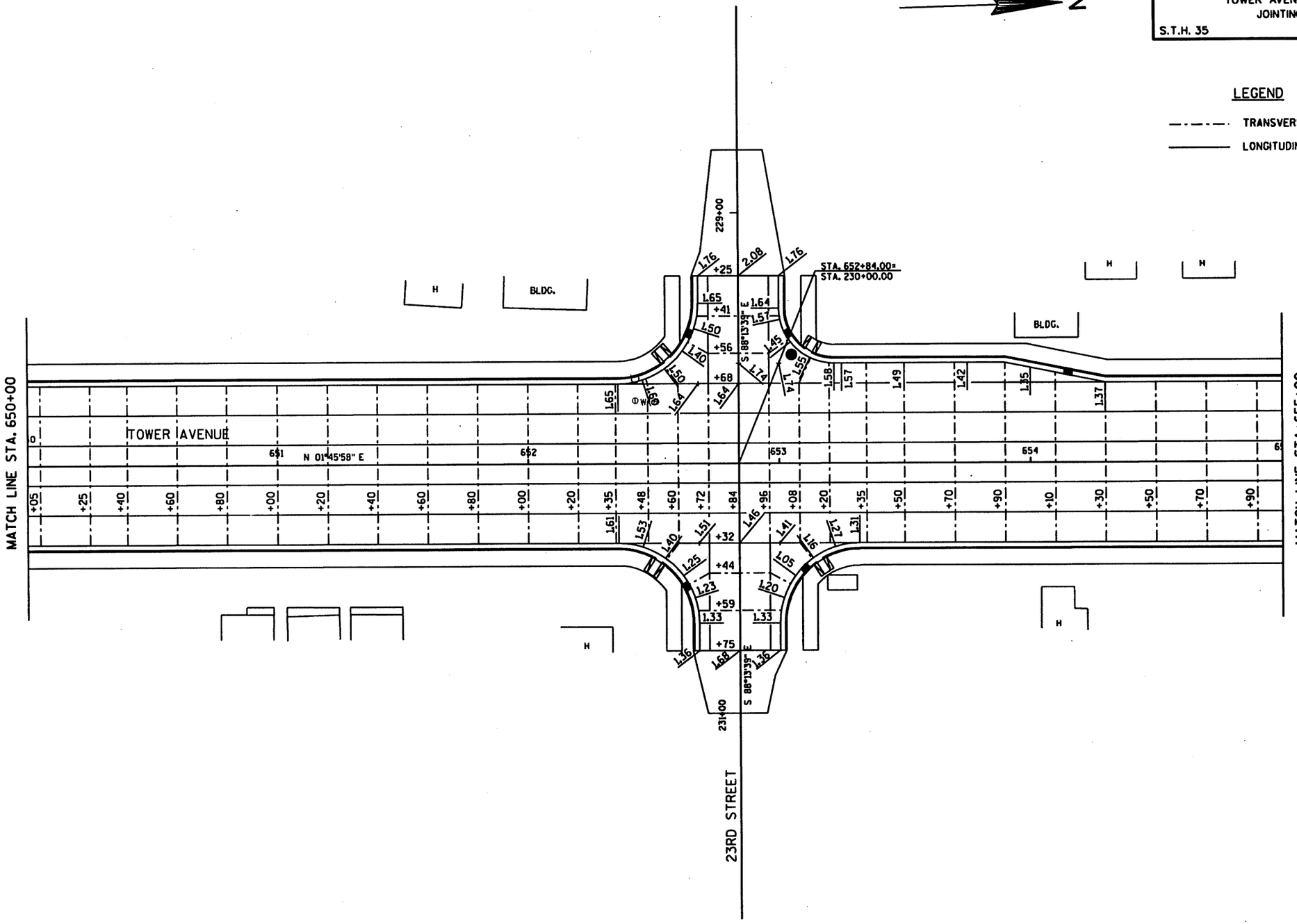
S.T.H. 35 DOUGLAS CO.

N

LEGEND

TRANSVERSE JOINT

LONGITUDINAL JOINT



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, 57,58,59,60,61,62,63

7 /

FILE NAME: HDGN:2320J+10

WISDOT/CADDS SHEET 42

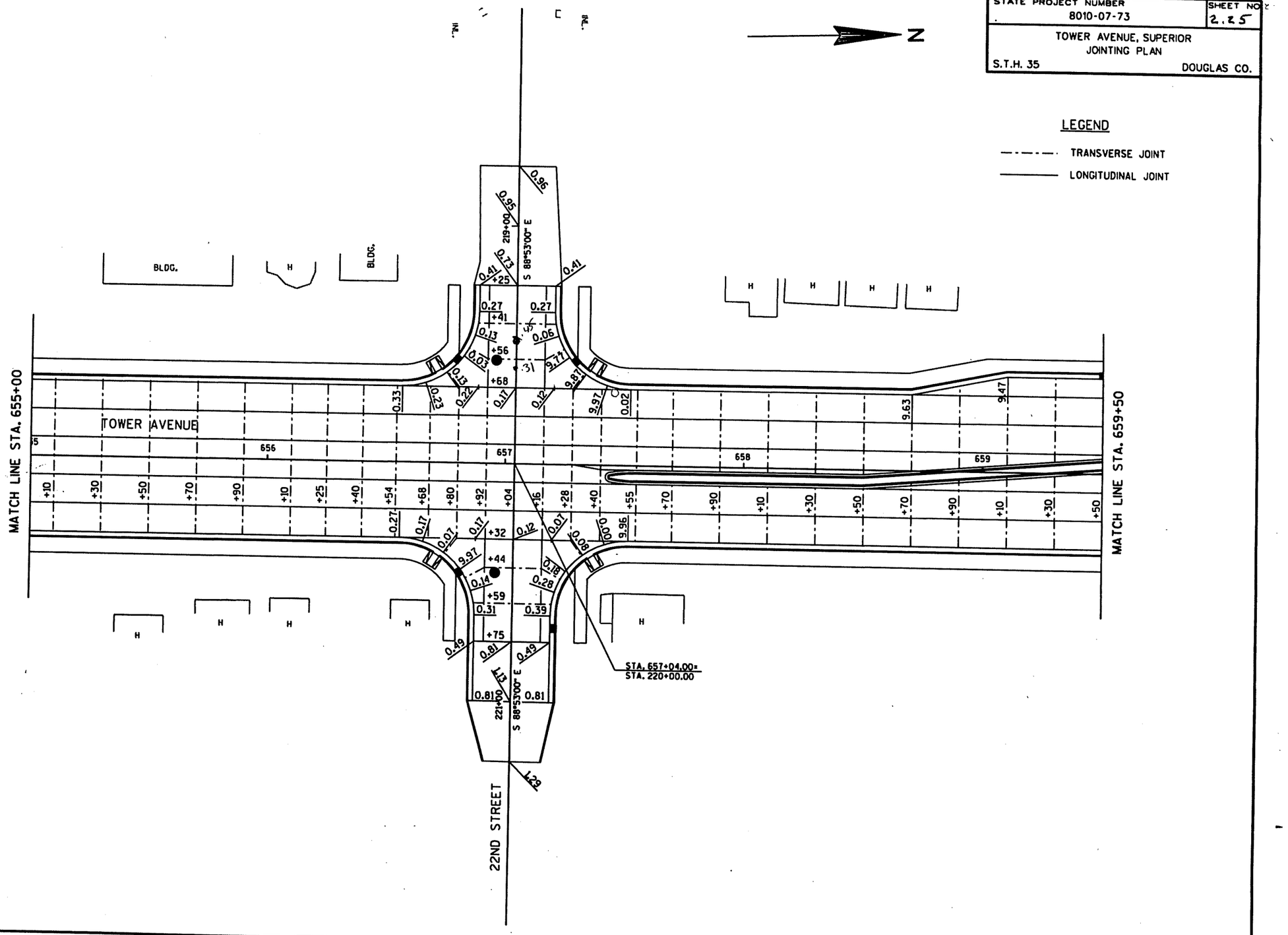
STATE PROJECT NUMBER	SHEET NO.
8010-07-73	2.25

TOWER AVENUE, SUPERIOR
JOINTING PLAN

S.T.H. 35 — DOUGLAS CO.

LEGEND

- TRANSVERSE JOINT
- LONGITUDINAL JOINT



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

FILE NAME: HDGN:2320J+11

WISDOT/CADDS SHEET 42

STATE PROJECT NUMBER	SHEET NO
8010-07-73	226

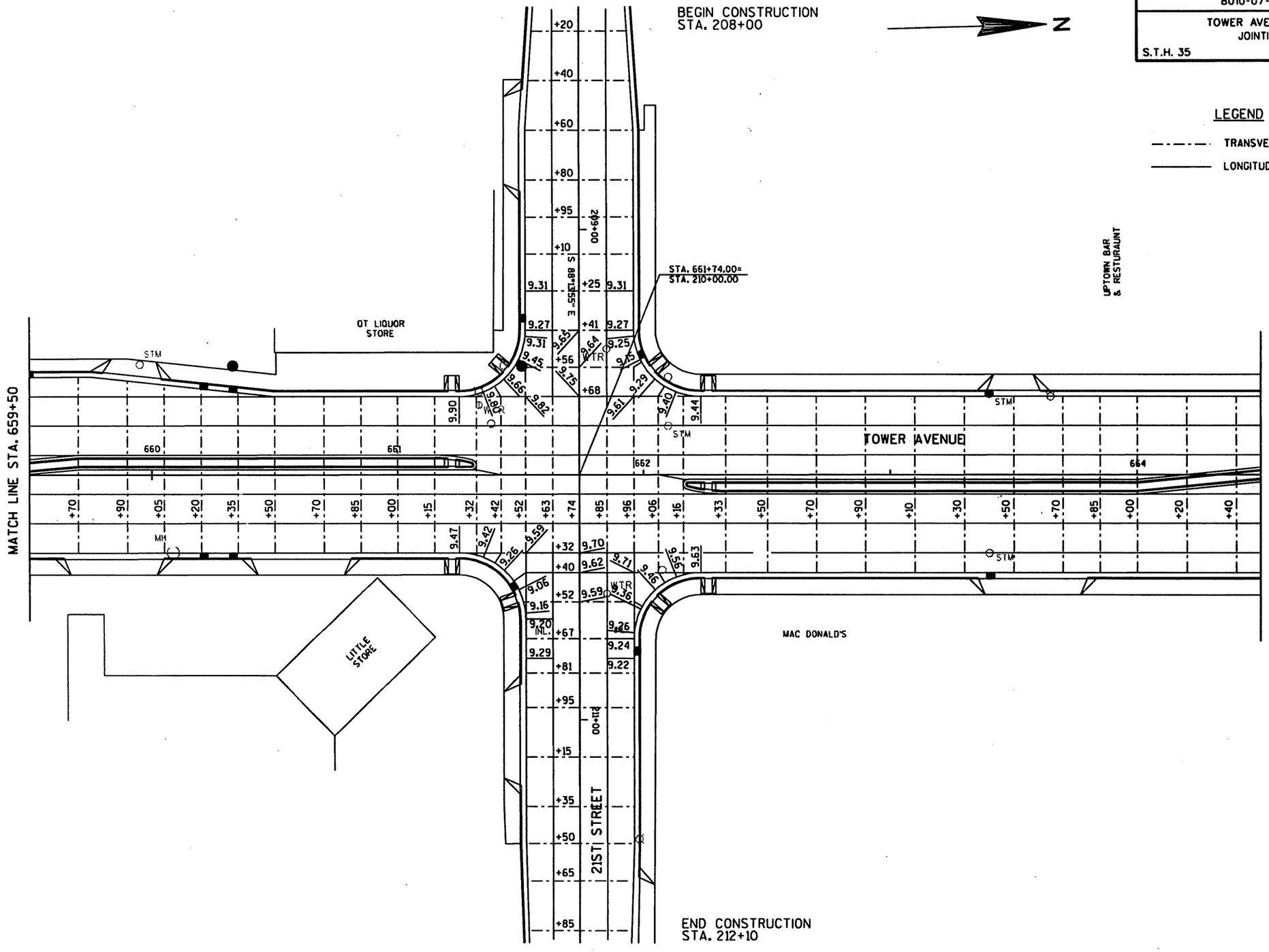
TOWER AVENUE, SUPERIOR
JOINTING PLAN

S.T.H. 35 DOUGLAS CO.

LEGEND

TRANSVERSE JOINT

LONGITUDINAL JOINT



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, 57,58,59,60,61,62,63

FILE NAME: HDGN:2320J+12

STATE PROJECT NUMBER	SHEET NO.
8010-07-73	2.27

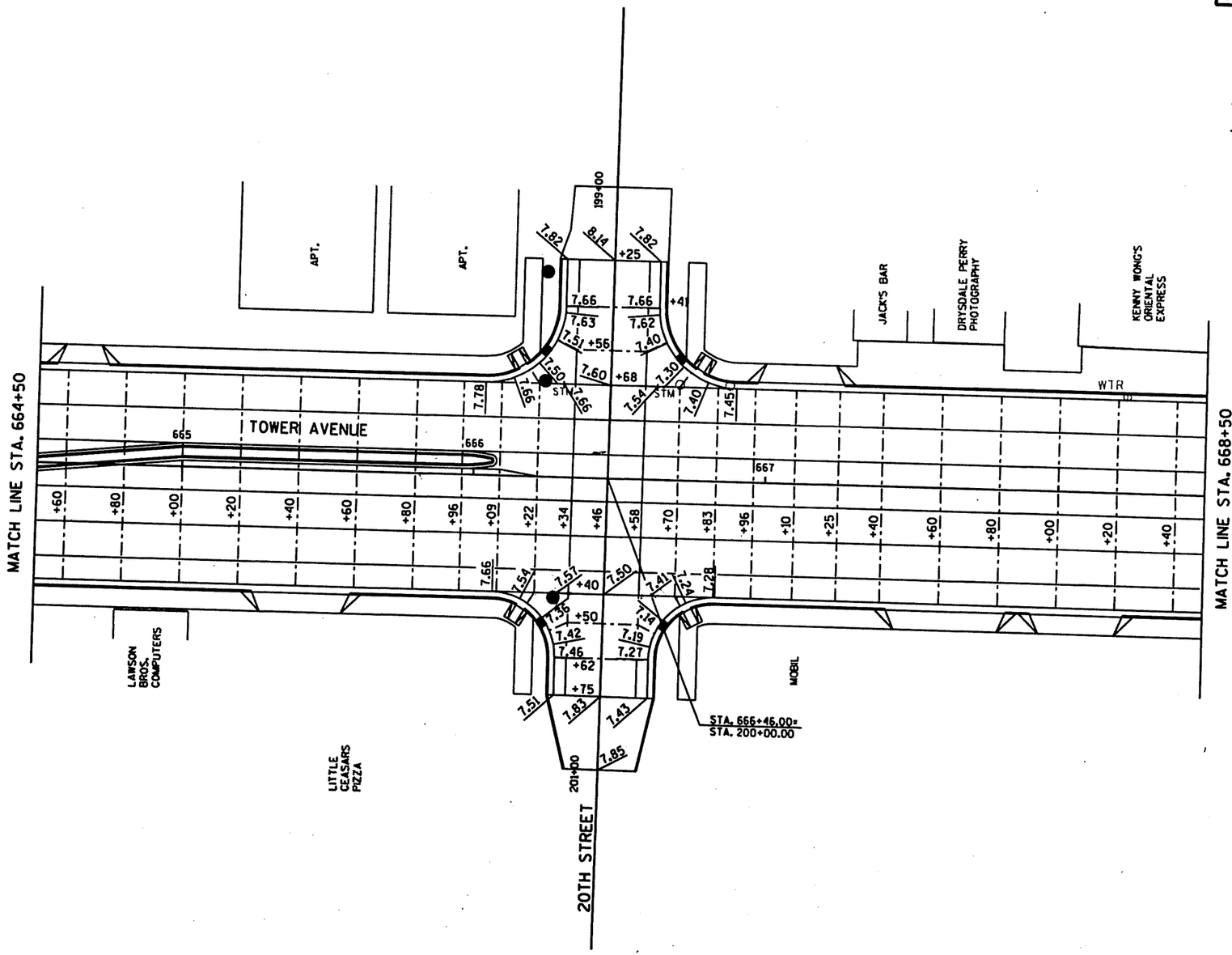
TOWER AVENUE, SUPERIOR
JOINTING PLAN
S.T.H. 35 DOUGLAS CO.

N

LEGEND

TRANSVERSE JOINT

LONGITUDINAL JOINT



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

FILE NAME: HDGN:2320J+13

STATE PROJECT NUMBER	SHEET NO.
8010-07-73	2.28

TOWER AVENUE, SUPERIOR
JOINTING PLAN
S.T.H. 35 DOUGLAS CO.

N

LEGEND

TRANSVERSE JOINT

LONGITUDINAL JOINT

MATCH LINE STA. 668+50

MATCH LINE STA. 673+00

STA. 670+65.00=
STA. 190+00.00

189+00

191+00

TOWER AVENUE

19TH STREET

QUICK PRINT PRINTING

NOTINGHAM APT.

AQUA-HUT

STM

CNTR

H

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, 57,58,59,60,61,62,63

FILE NAME: HDGN:2320J+14

STATE PROJECT NUMBER	SHEET NO
8010-07-73	2.29

TOWER AVENUE, SUPERIOR
JOINTING PLAN

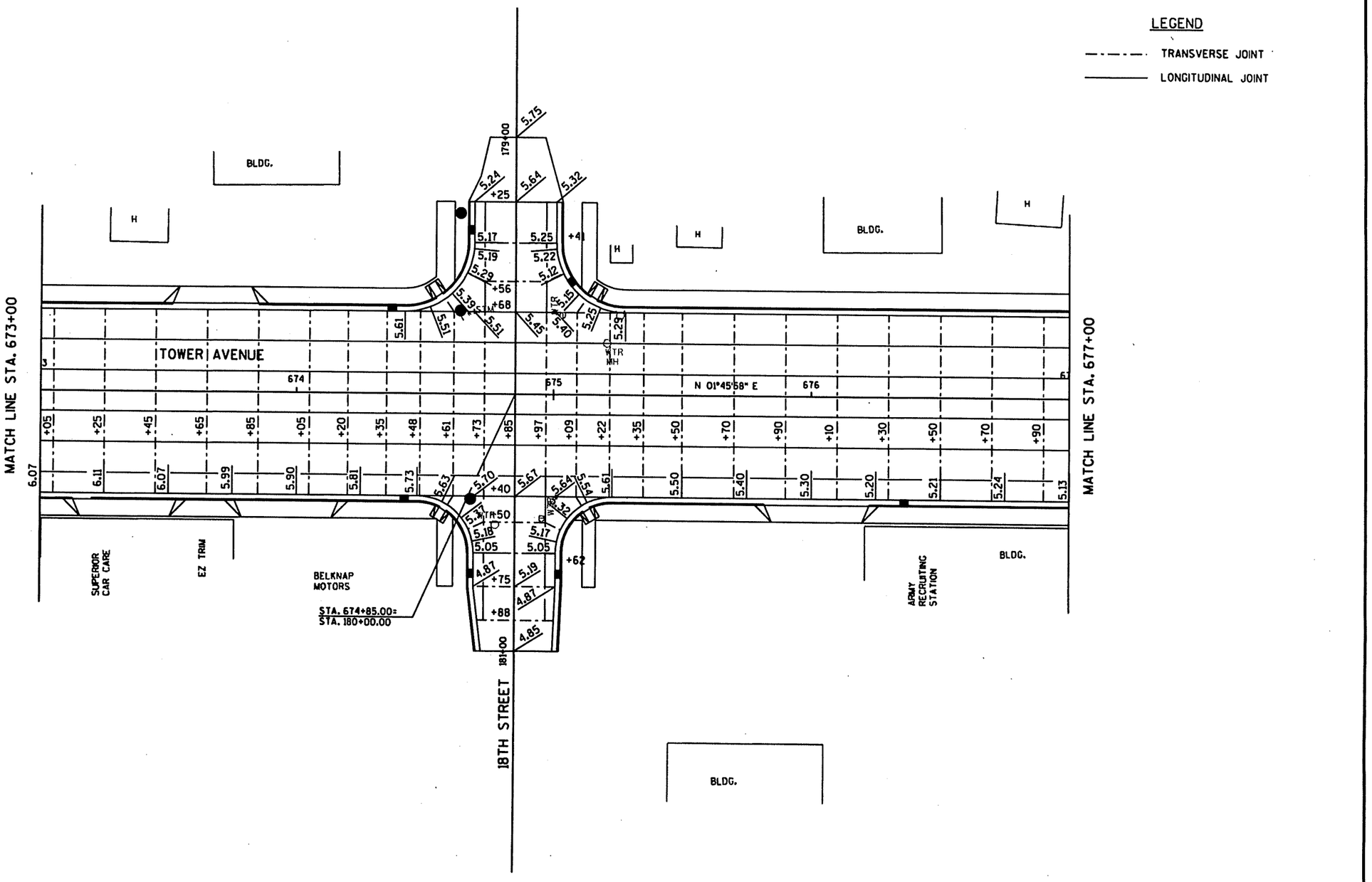
S.T.H. 35 DOUGLAS CO.

N

LEGEND

TRANSVERSE JOINT

LONGITUDINAL JOINT



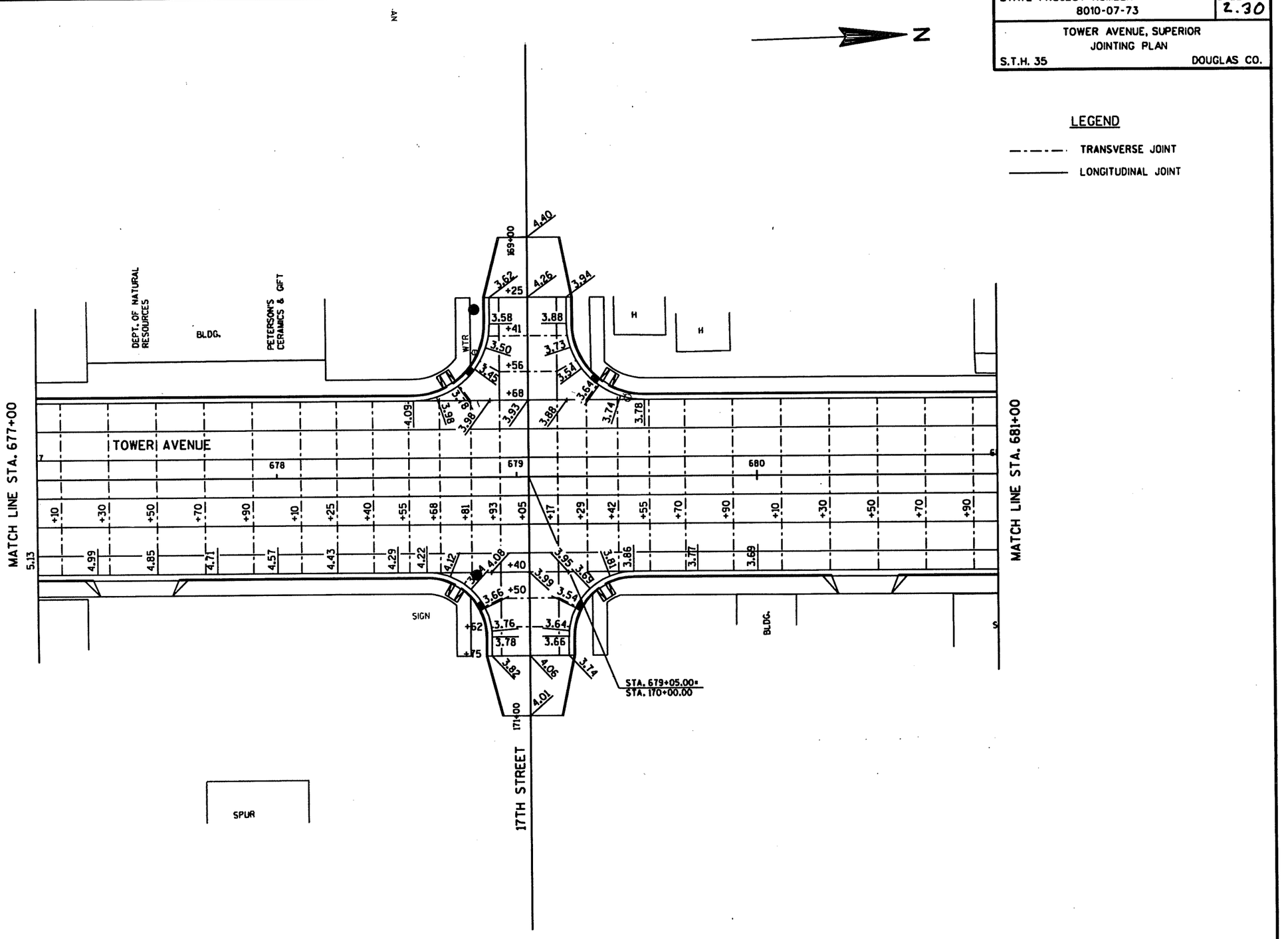
FILE NAME: HDGN:2320J+15

STATE PROJECT NUMBER	SHEET NO
8010-07-73	2.30

TOWER AVENUE, SUPERIOR
JOINTING PLAN
S.T.H. 35 DOUGLAS CO.

LEGEND

- TRANSVERSE JOINT
- LONGITUDINAL JOINT



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, 57,58,59,60,61,62,63

FILE NAME: HDGN:23202J+16.DGN

STATE PROJECT NUMBER	SHEET NO.
8010-07-73	2.31

TOWER AVENUE, SUPERIOR
JOINTING PLAN
S.T.H. 35 DOUGLAS CO.

N

LEGEND

TRANSVERSE JOINT

LONGITUDINAL JOINT

STACK BROS. INC.

BLDG.

BLDG.

TOWER AVENUE

MATCH LINE STA. 681+00

MATCH LINE STA. 685+50

JOB SERVICE

THE GAME CONNECTION

LOUIS' CAFE

16TH STREET

STA. 683+24.00±
STA. 160+00.00

S 88°37'02" E

WTR

STM

SAN

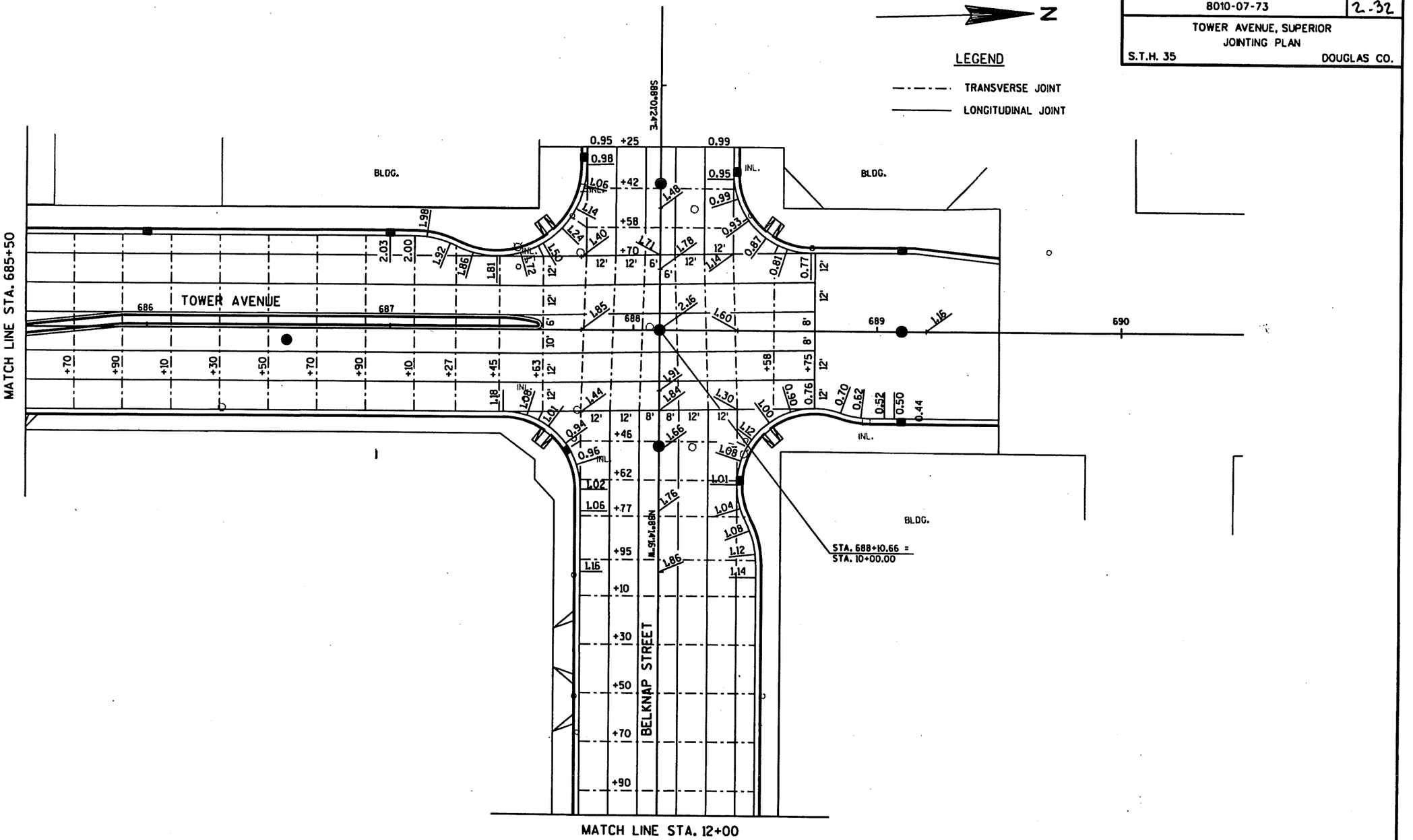
LEVELS ON • 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,51,52,53,54,55,57,58,59,60,61,62,63

FILE NAME: HDGN:2320J+17

STATE PROJECT NUMBER	SHEET NO
8010-07-73	2-32

TOWER AVENUE, SUPERIOR
JOINTING PLAN
S.T.H. 35 DOUGLAS CO.

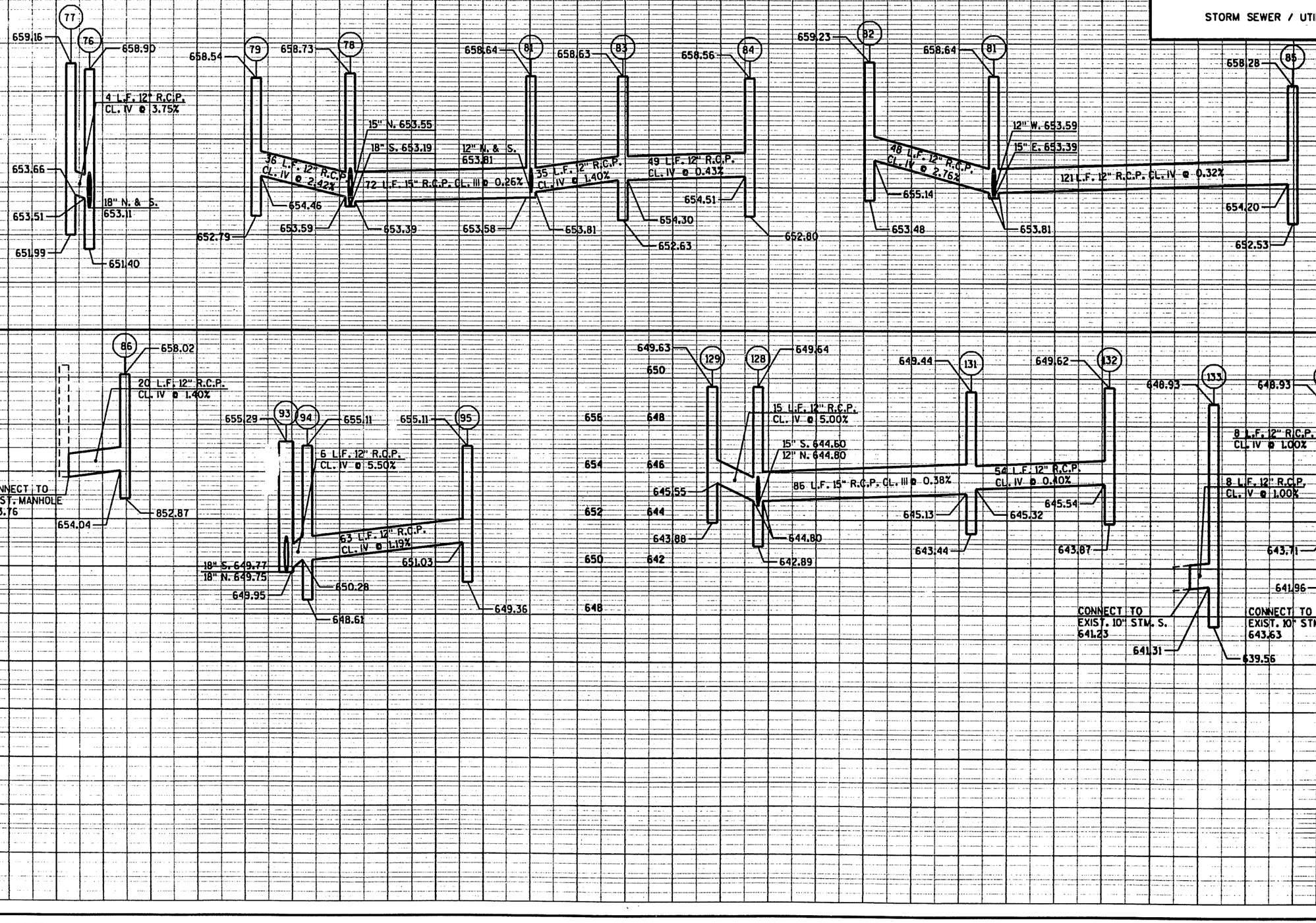
LEVELS ON - 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,51,52,53,54,55, 57,58,59,60,61,62,63



FILE NAME: HDGN:2320J+18

STATE PROJECT NUMBER 8010-07-73 | SHEET NO 2.46

STORM SEWER / UTILITY PLAN



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

FILE NAME: HDGN:23202UP3

STATE PROJECT NUMBER	SHEET NO
8010-07-73	2.49

STORM SEWER / UTILITY PLAN

666+26.6, 49.2' LT.
CB 1-H-S (137)

666+24.0, 33.5' LT.
MH 1-K (135)

666+23.8, 70.0' LT.
MH 1-K (136)

666+70.0, 42.0' LT.
CB 1-H-S (138)

N

MATCH LINE STA. 664+50

MATCH LINE STA. 668+50

TOWER AVENUE

665 666 667 668

N 01°45'58" E

S 87°46'37" E

199+00

10" STM

25' R.

APT.

JACK'S BAR

DRYSDALE PERRY PHOTOGRAPHY

KENNY WONG'S ORIENTAL EXPRESS

ENT. GSO WSO WTR STM

LAWSON BROS. COMPUTERS

MOBIL

20TH STREET

201+00

666+28.5, 41.5' RT.
MH 1-K (139)

666+24.6, 50.0' RT.
CB 1-H-S (141)

STA. 666+46.00=
STA. 200+00.00

666+67.4, 50.0' RT.
CB 1-H-S (142)

650 648 646 644 642 640

647.64 — 135 — 647.66 — 138

43 L.F. 12" R.C.P. CL. IV @ 2.74%

15" E. & W. 642.15

643.58

642.40

641.91

648.25 — 136 — 647.78 — 137 — 647.64 — 135

17 L.F. 15" R.C.P. CL. III @ 1.00%

12 L.F. 15" R.C.P. CL. III @ 1.00%

641.86

CONNECT EXIST. 10" R.C.P. 641.86

642.03

640.28

642.15

647.37 — 139 — 141 — 647.68

10 L.F. 12" R.C.P. CL. IV @ 4.90%

71 L.F. 15" R.C.P. CL. III @ 1.00%

642.86

643.60

641.93

643.11

647.37 — 139 — 142 — 647.46

39 L.F. 12" R.C.P. CL. IV @ 0.69%

643.38

643.11

641.71

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, 57,58,59,60,61,62,63

FILE NAME: HDGN1232OUT13

STATE PROJECT NUMBER	SHEET NO.
8010-07-73	2.50

STORM SEWER / UTILITY PLAN

N

MATCH LINE STA. 668+50

MATCH LINE STA. 673+00

TOWER AVENUE

19TH STREET

669 670 671 672

670+41.0, 42.0' LT. CB 1-H-S (144)

670+17.5, 33.5' LT. CB 1-H-RT (146)

STA. 670+65.00 = STA. 190+00.00

189+00

S 88°12'43" E

670+42.0, 75.0' LT. MH 1-K (143)

671+90.5, 33.5' LT. CB 1-H-RT (153)

670+89.0, 42.0' LT. CB 1-H-S (151)

672+26.5, 33.5' LT. CB 1-H-S (154)

670+41.0, 33.5' LT. MH 1-K (145)

670+89.0, 33.5' LT. MH 1-K (150)

670+98.0, 56.0' RT. CB 1-C (152)

670+22.5, 41.5' RT. CB 1-H-LT (147)

668+75.0, 41.5' RT. CB 1-H-S (147A)

670+86.6, 49.0' RT. CB 1-H-S (149)

670+88.5, 56.0' RT. MH 1-K (148)

671+90.5, 41.5' RT. CB 1-H-LT (155)

672+50.0, 41.5' RT. CB 1-H-S (156)

NOTINGHAM APT.

QUICK PRINT PRINTING

MAILBOX

CRAV.

CONC.

I.P.

OSW

OSM

STM

ENT.

5 L.F. 18" R.C.P. CL. III @ 0.80%

29 L.F. 18" R.C.P. CL. III @ 0.79%

12" SOUTH 642.23

18" NORTH 640.31

CONNECT EXIST. 6" STM. SEW. 640.00

640.00

640.23

638.28

640.27

144 L.F. 12" R.C.P. CL. IV @ 0.48%

643.00

641.33

642.31

640.51

6 L.F. 12" R.C.P. CL. IV @ 9.00%

3 L.F. 15" R.C.P. CL. IV @ 3.00%

5 L.F. 12" R.C.P. CL. IV @ 5.00%

64 L.F. 12" R.C.P. CL. IV @ 0.70%

79 L.F. 18" R.C.P. CL. IV @ 1.00%

642.40

642.00

640.90

641.37

640.58

641.86

641.66

641.57

639.53

18" SOUTH 640.58

21 L.F. 12" R.C.P. CL. IV @ 2.20%

32 L.F. 12" R.C.P. CL. IV @ 2.22%

56 L.F. 12" R.C.P. CL. IV @ 1.00%

642.69

641.02

642.23

640.27

640.31

44 L.F. 18" R.C.P. CL. III @ 0.70%

98 L.F. 18" R.C.P. CL. III @ 0.43%

15" EAST 640.58

15" EAST 641.20

641.00

639.29

642.11

641.40

640.44

18" SOUTH 641.00

73 L.F. 15" R.C.P. CL. III @ 0.41%

641.20

639.29

641.50

641.73

639.73

642.25

640.58

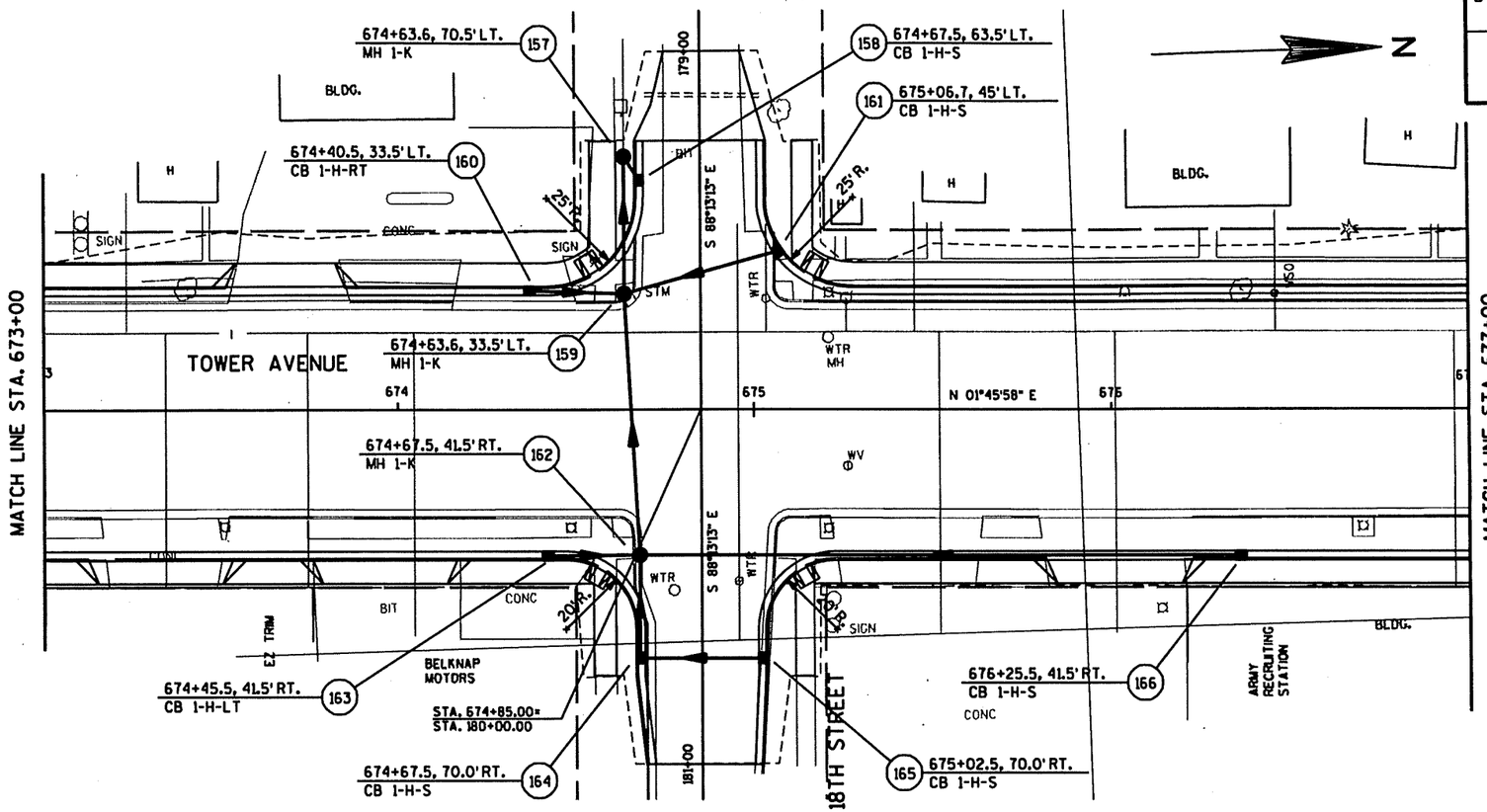
646 644 642 640 638

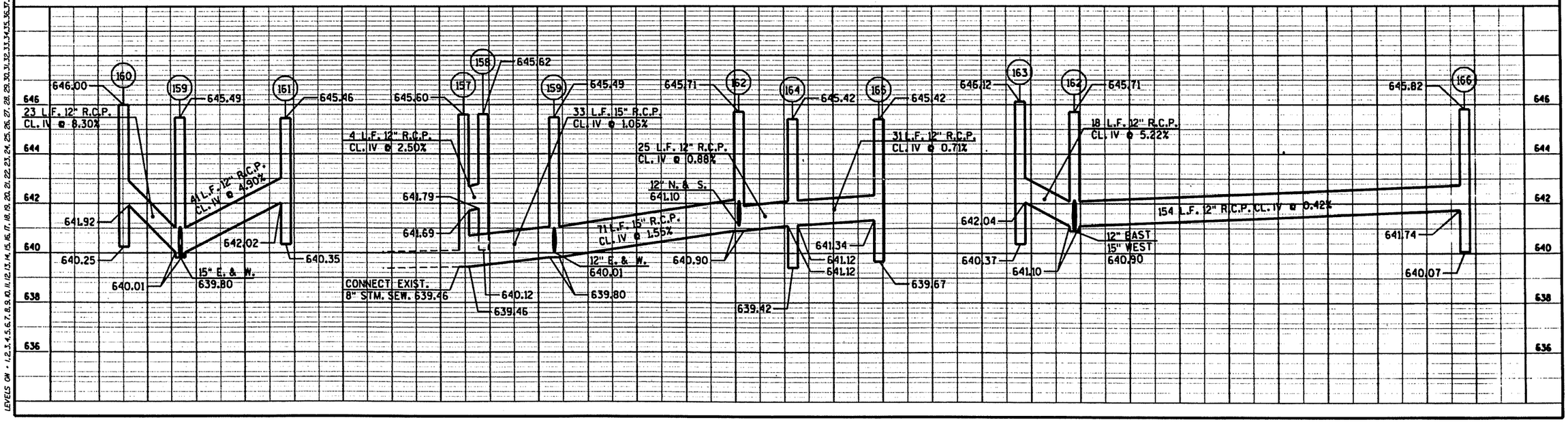
LEVELS ON - 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,51,52,53,54,55, 57,58,59,60,61,62,63

FILE NAME: HDGN:232OUT14

STATE PROJECT NUMBER	SHEET NO
8010-07-73	2.51

STORM SEWER / UTILITY PLAN

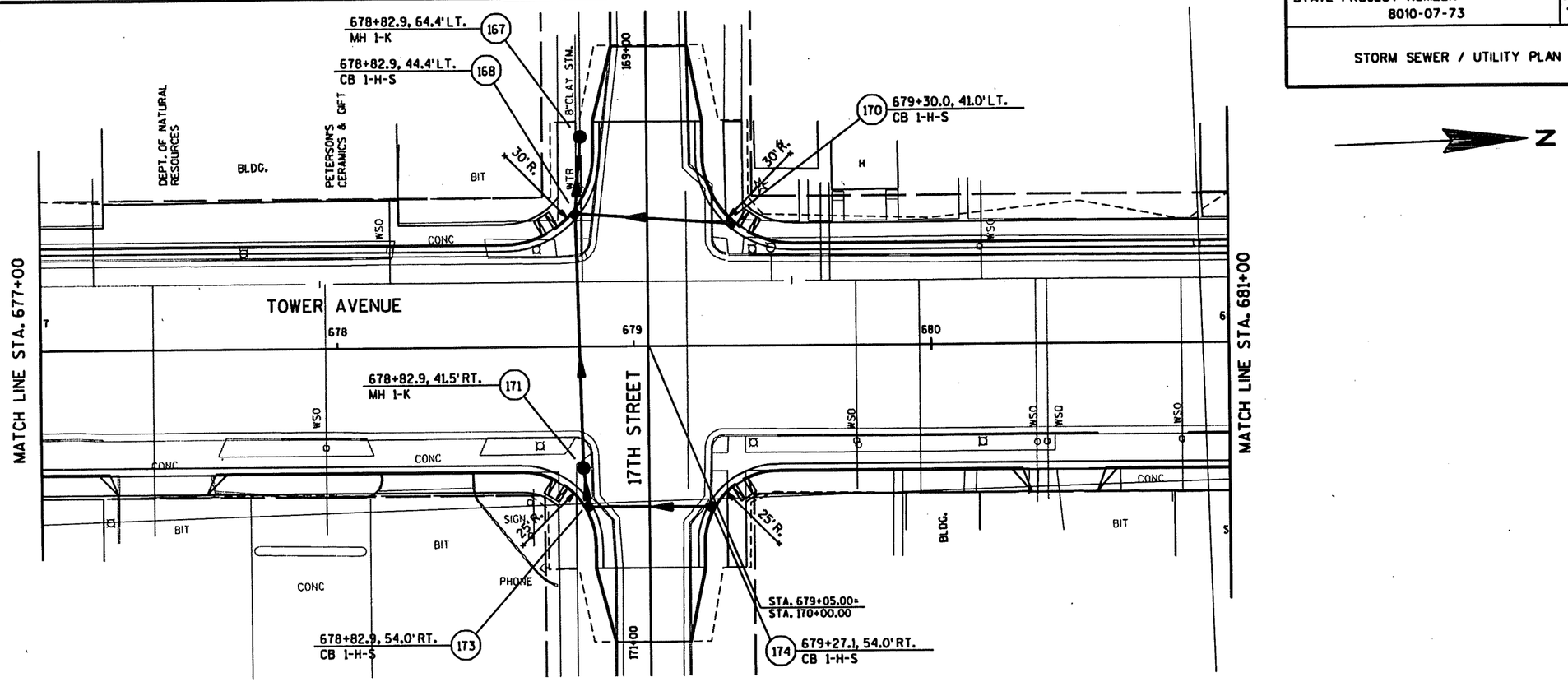


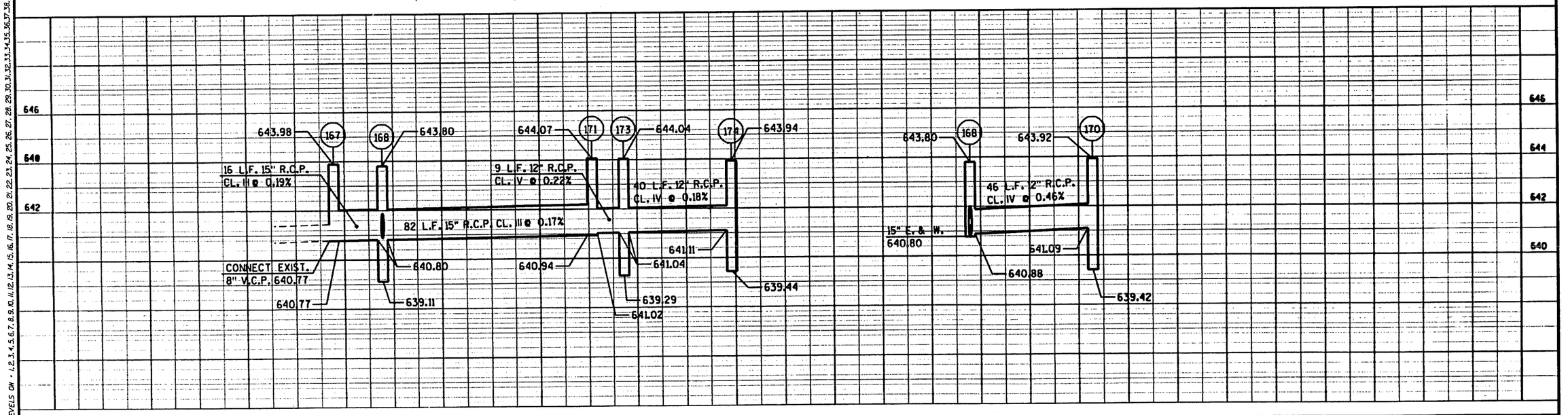


FILE NAME: HDON:2320UT15

STATE PROJECT NUMBER	SHEET NO
8010-07-73	2.52

STORM SEWER / UTILITY PLAN





STATE PROJECT NUMBER	SHEET NO
8010-07-73	2.53

STORM SEWER / UTILITY PLAN

N

16TH STREET

159+00

161+00

683+03.9, 49.2' LT.
CB 1-H-S (177)

683+42.7, 55.3' LT.
CB 1-H-S (176)

BIT

WTR

S 88°37'02" E

25' R.

FLAG

BLDG.

WSO

TOWER AVENUE

MATCH LINE STA. 681+00

MATCH LINE STA. 685+50

682

683

684

685

T

G

683+45.5, 5' RT.
MH 1-K (175)

CONC

LOUIS' CAFE

THE GAME CONNECTION

682+80.3, 41.5' RT.
CB 1-H-LT (179)

683+45.5, 43.5' RT.
MH 1-K (178)

683+42.3, 70.8' RT.
CB 1-H-S (180)

BM 3

684+23.5, 43.5' RT.
CB 1-H-S (181)

STA. 683+24.00=
STA. 160+00.00

PROPOSED CENTERLINE PROFILE

-0.40%

-0.40%

179 643.26

58 L.F. 12" R.C.P. CL. IV @ 3.40%

639.18

637.51

178 642.65

637.21

74 L.F. 12" R.C.P. CL. IV @ 2.31%

15" WEST
637.01

181 643.00

638.92

637.25

177 642.83

637.75

637.40

636.08

176 642.78

35 L.F. 12" R.C.P. CL. IV @ 1.00%

637.22

635.53

643.29 175

15" NORTH
636.73

56 L.F. 15" R.C.P. CL. III @ 0.68%

636.73

642.65 178

23 L.F. 12" R.C.P. CL. IV @ 5.26%

637.01

642.50 180

12" N. & S.
637.21

59 L.F. 15" R.C.P. CL. III @ 0.47%

637.21

638.42

636.75

175 643.29

15" E. & W.
636.73

308 L.F. 18" R.C.P. CL. III @ 0.73%

636.73

644
642
640
638

683+25 683+50 683+75 684+00 684+25 684+50 684+75 685+00 685+25 685+50

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, 57,58,59,60,61,62,63

FILE NAME: HDGN:232OUT17

STATE PROJECT NUMBER	SHEET NO
8010-07-73	2.54

STORM SEWER / UTILITY PLAN

N

MATCH LINE STA. 685+50

687+00.0, 41.5'LT
CB 1-H-RT (183)

686+00.0, 41.5'LT.
CB 1-H-S (184)

686+57.5, 5'RT
MH 1-K (182)

9+29.4 , 31.5'RT
CB 1-H-S (189)

9+40.0, CL
MH 1-K (186)

9+34.9, 31.5'LT
CB 1-H-S (188)

689+12.0, 31.5'LT
CB 1-H-RT (192)

688+10.7, CL
MH 3-K (185)

689+12.0, CL
MH 3-K (190)

689+12.0, 37.5'RT.
CB 1-H-LT (191)

687+72.7, 48.1'RT
CB 1-H-S (194)

10+48.0 , CL
MH 1-K (193)

10+62.0, 33.5'LT
CB 1-H-S (195)

STA. 688+10.66 =
STA. 10+00.00

BELKNAP STREET

TOWER AVENUE

END PROJECT 8010-07-73
STA. 689+50.00

MATCH LINE STA. 11+00

PROPOSED CENTERLINE PROFILE

642.25 (182) -0.60% 642.12 (185) +1.00% +1.75% -1.75% -0.44% -0.44% 641.16 (190) -0.16%

15" NWLY
637.05

308 L.F. 18" R.C.P. CL. III @ 0.73%

634.48

630.25

12" WEST
15" EAST
629.50

150 L.F. 18" R.C.P. CL. III @ 0.50%

629.50

94 L.F. 24" R.C.P. CL. III @ 0.50%

628.98

12" E. & W.
636.40

CONNECT TO
EXIST. 24" STM. SEW.

641.21 (186) +0.50% 642.12 (185) -1.00% 641.62 (193) +0.40%

CONNECT
EXIST. 12"
SEWER

629.74

12" N. & S.
636.72

24" N. & S.
629.50

55 L.F. 18" R.C.P.
CL. III @ 0.44%

629.50

44 L.F. 18" R.C.P.
CL. III @ 0.32%

264 L.F. 18" R.C.P.
CL. III @ 0.30%

629.64

642 640 638

685+50 685+75 686+00 686+25 686+50 686+75 687+00 687+25 687+50 687+75 688+00 688+25 688+50 688+75 689+00 689+25 689+50 9+25 9+50 9+75 10+00 10+25 10+50 10+75 11+00

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

FILE NAME: HDGN:232OUT18

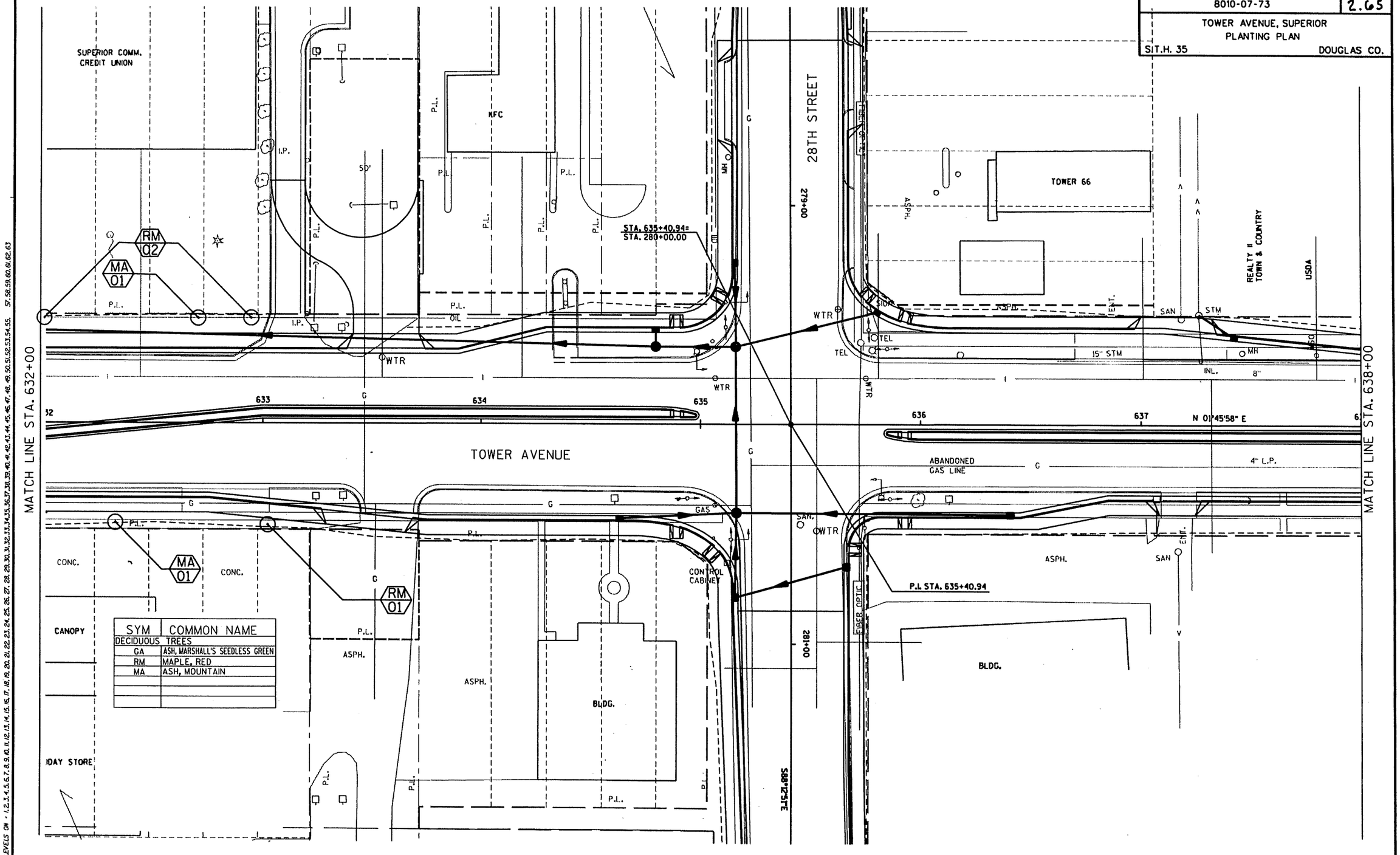
WISDOT/CADDS SHEET 40

STATE PROJECT NUMBER	SHEET NO
8010-07-73	2.65

TOWER AVENUE, SUPERIOR
PLANTING PLAN
S.T.H. 35 DOUGLAS CO.

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, 57,58,59,60,61,62,63

FILE NAME: HDGN:23202la7

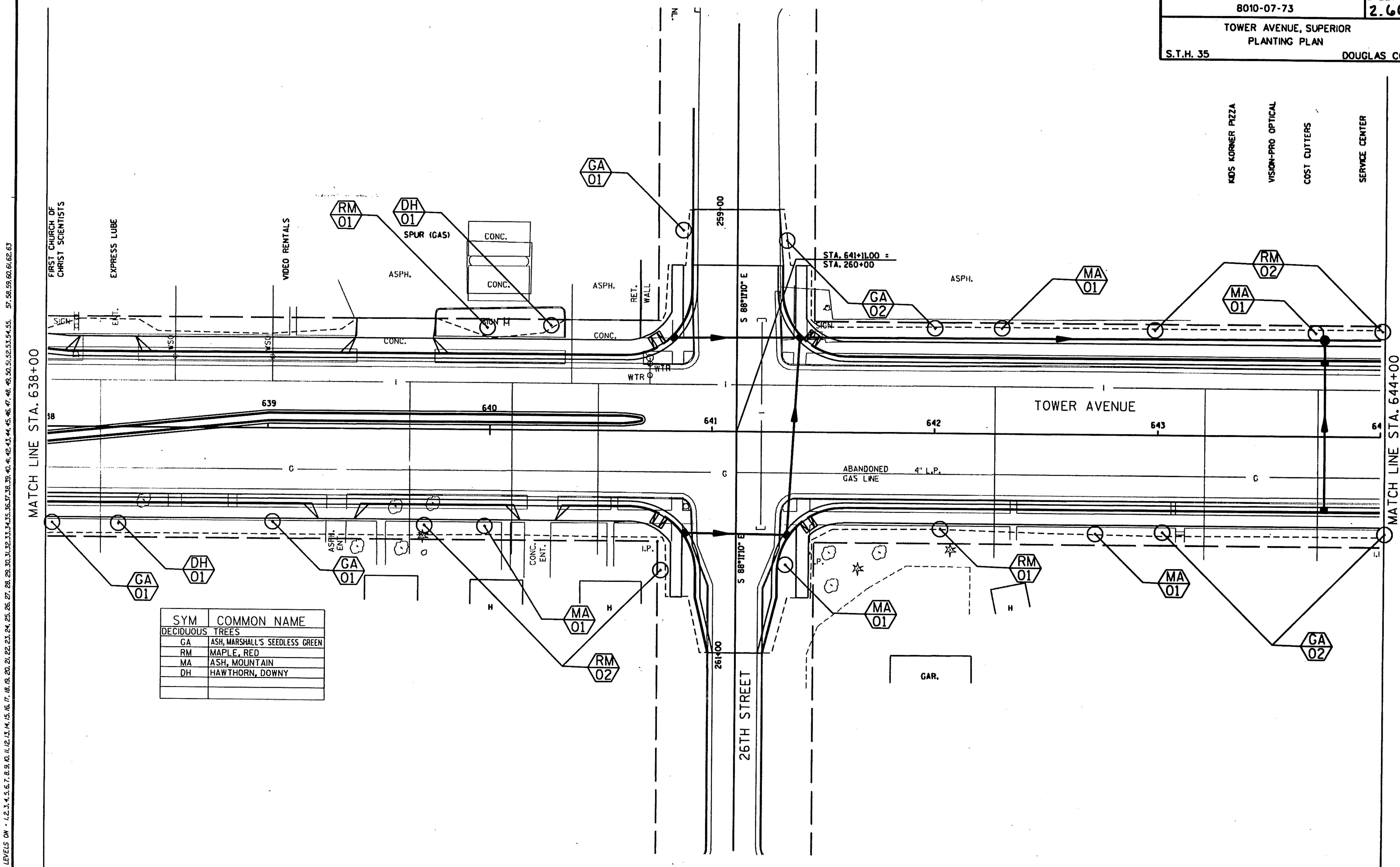


SYM	COMMON NAME
DECIDUOUS TREES	
GA	ASH, MARSHALL'S SEEDLESS GREEN
RM	MAPLE, RED
MA	ASH, MOUNTAIN

STATE PROJECT NUMBER	SHEET NO
8010-07-73	2.66

TOWER AVENUE, SUPERIOR
PLANTING PLAN

S.T.H. 35 DOUGLAS CO.



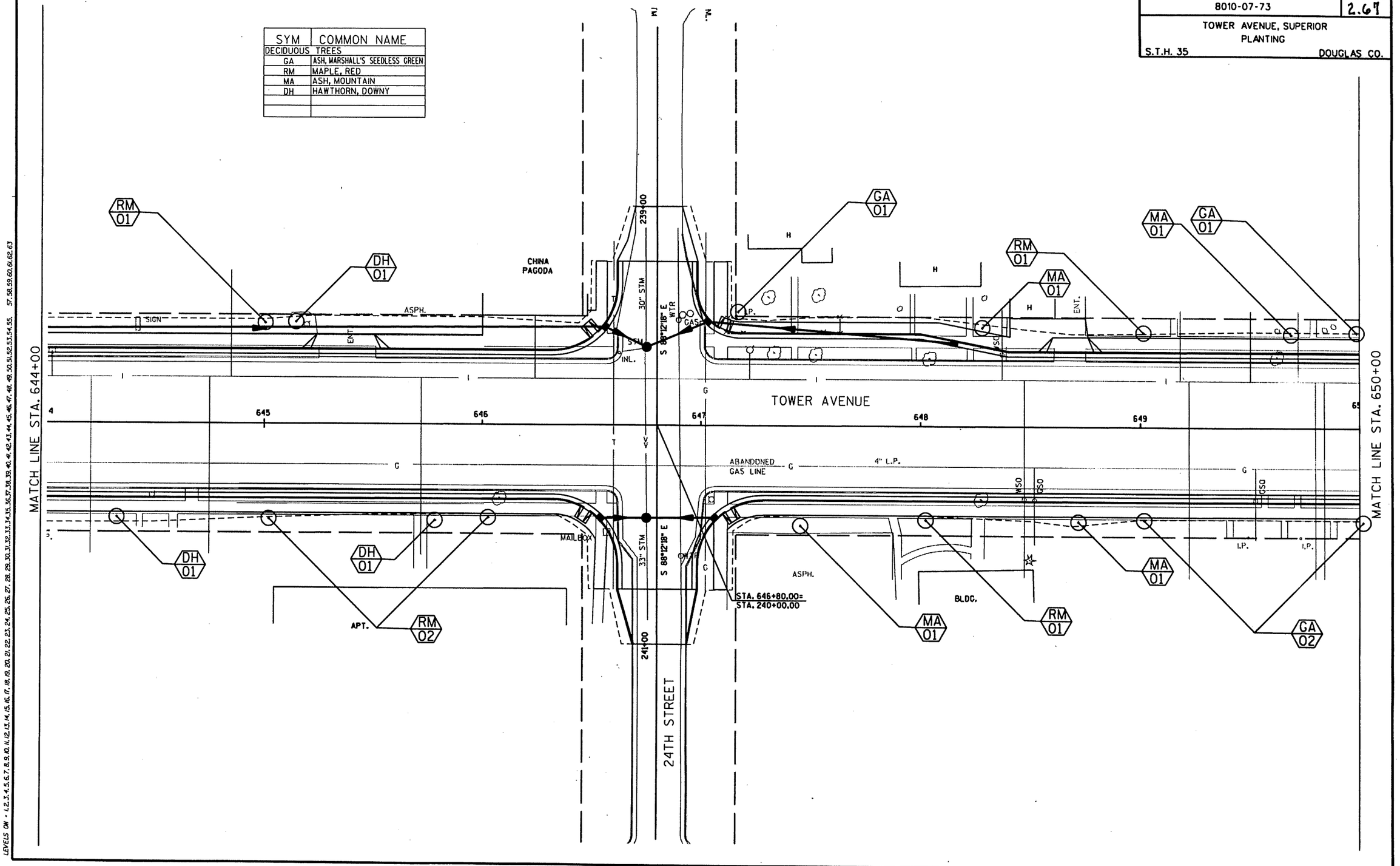
SYM	COMMON NAME
DECIDUOUS	TREES
GA	ASH, MARSHALL'S SEEDLESS GREEN
RM	MAPLE, RED
MA	ASH, MOUNTAIN
DH	HAWTHORN, DOWNY

FILE NAME: HDGN:2320218B

STATE PROJECT NUMBER	SHEET NO
8010-07-73	2.67

TOWER AVENUE, SUPERIOR
PLANTING
S.T.H. 35 DOUGLAS CO.

SYM	COMMON NAME
DECIDUOUS TREES	
GA	ASH, MARSHALL'S SEEDLESS GREEN
RM	MAPLE, RED
MA	ASH, MOUNTAIN
DH	HAWTHORN, DOWNY



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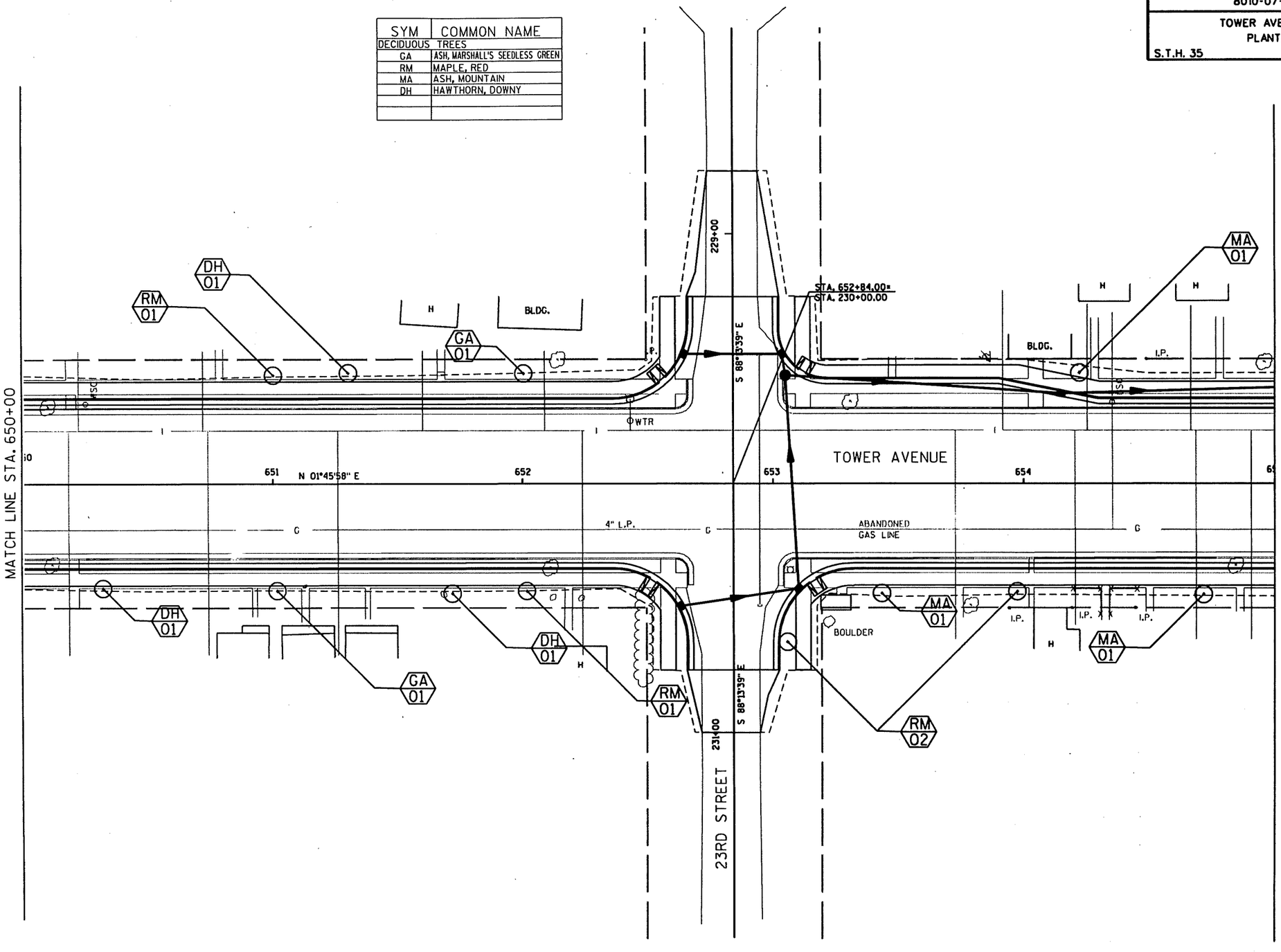
FILE NAME: HDGN:233202ia9

STATE PROJECT NUMBER	SHEET NO
8010-07-73	2.68

TOWER AVENUE, SUPERIOR
PLANTING PLAN

S.T.H. 35 DOUGLAS CO.

SYM	COMMON NAME
DECIDUOUS TREES	
GA	ASH, MARSHALL'S SEEDLESS GREEN
RM	MAPLE, RED
MA	ASH, MOUNTAIN
DH	HAWTHORN, DOWNY



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, 57,58,59,60,61,62,63

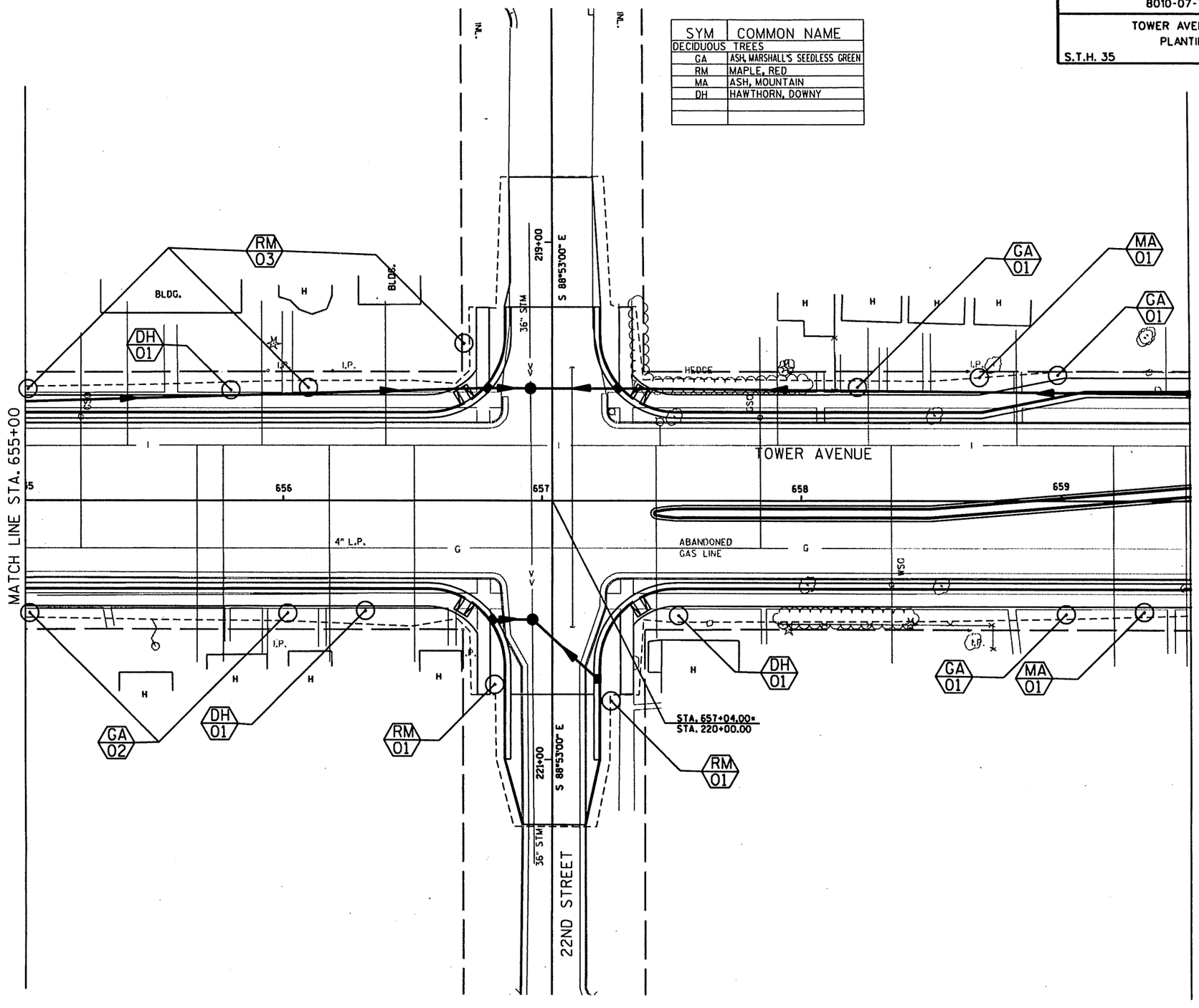
FILE NAME: HDGN:232021610

WISDOT/CADDS SHEET 42

STATE PROJECT NUMBER	SHEET NO
8010-07-73	2.69

TOWER AVENUE, SUPERIOR
PLANTING PLAN
S.T.H. 35 DOUGLAS CO.

SYM	COMMON NAME
DECIDUOUS TREES	
GA	ASH, MARSHALL'S SEEDLESS GREEN
RM	MAPLE, RED
MA	ASH, MOUNTAIN
DH	HAWTHORN, DOWNY



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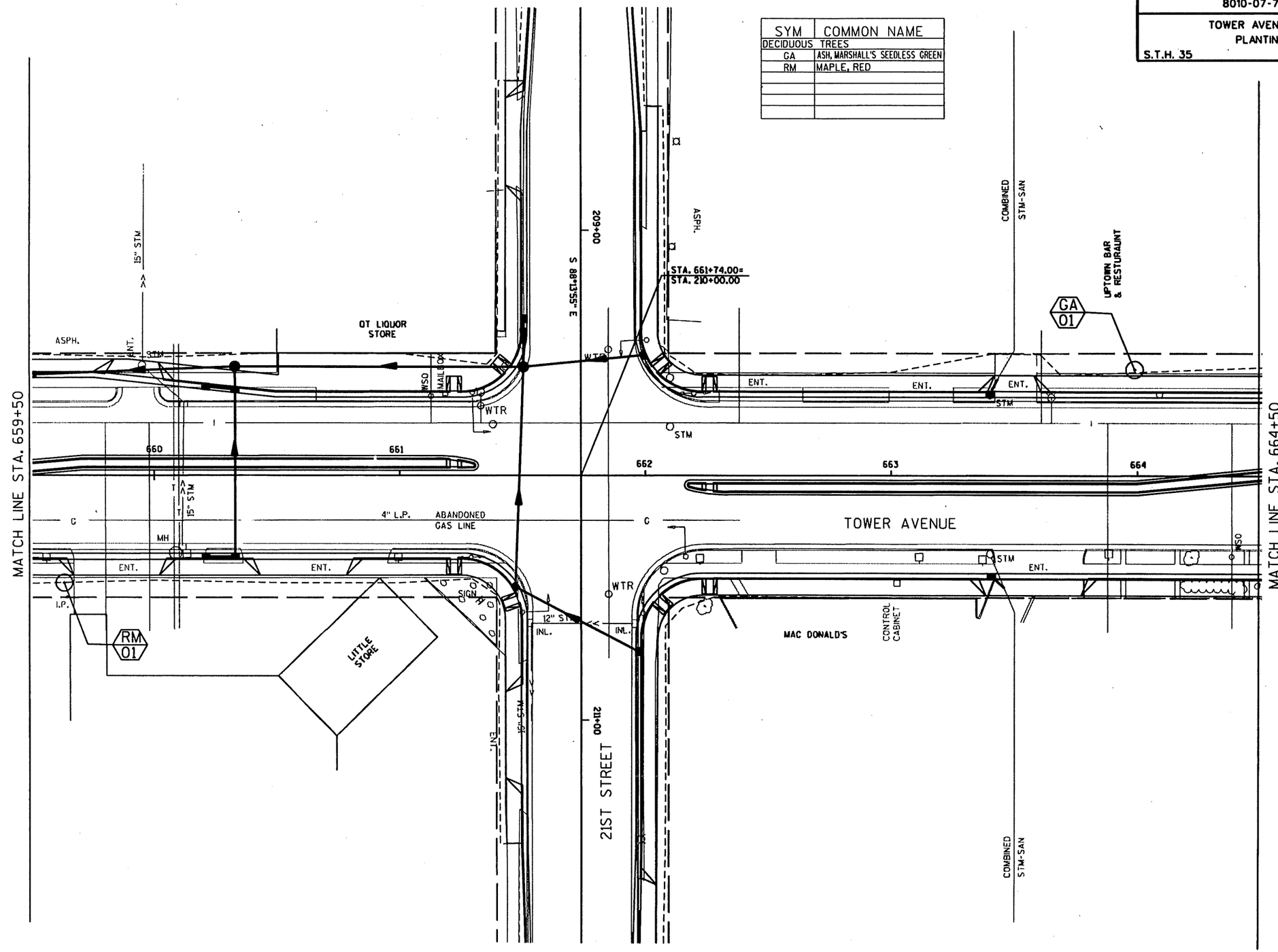
FILE NAME: HDGN:23202ia11

WISDOT/CADDS SHEET 42

STATE PROJECT NUMBER	SHEET NO
8010-07-73	2.70

TOWER AVENUE, SUPERIOR
PLANTING PLAN
S.T.H. 35 DOUGLAS CO.

SYM	COMMON NAME
DECIDUOUS	TREES
GA	ASH, MARSHALL'S SEEDLESS GREEN
RM	MAPLE, RED



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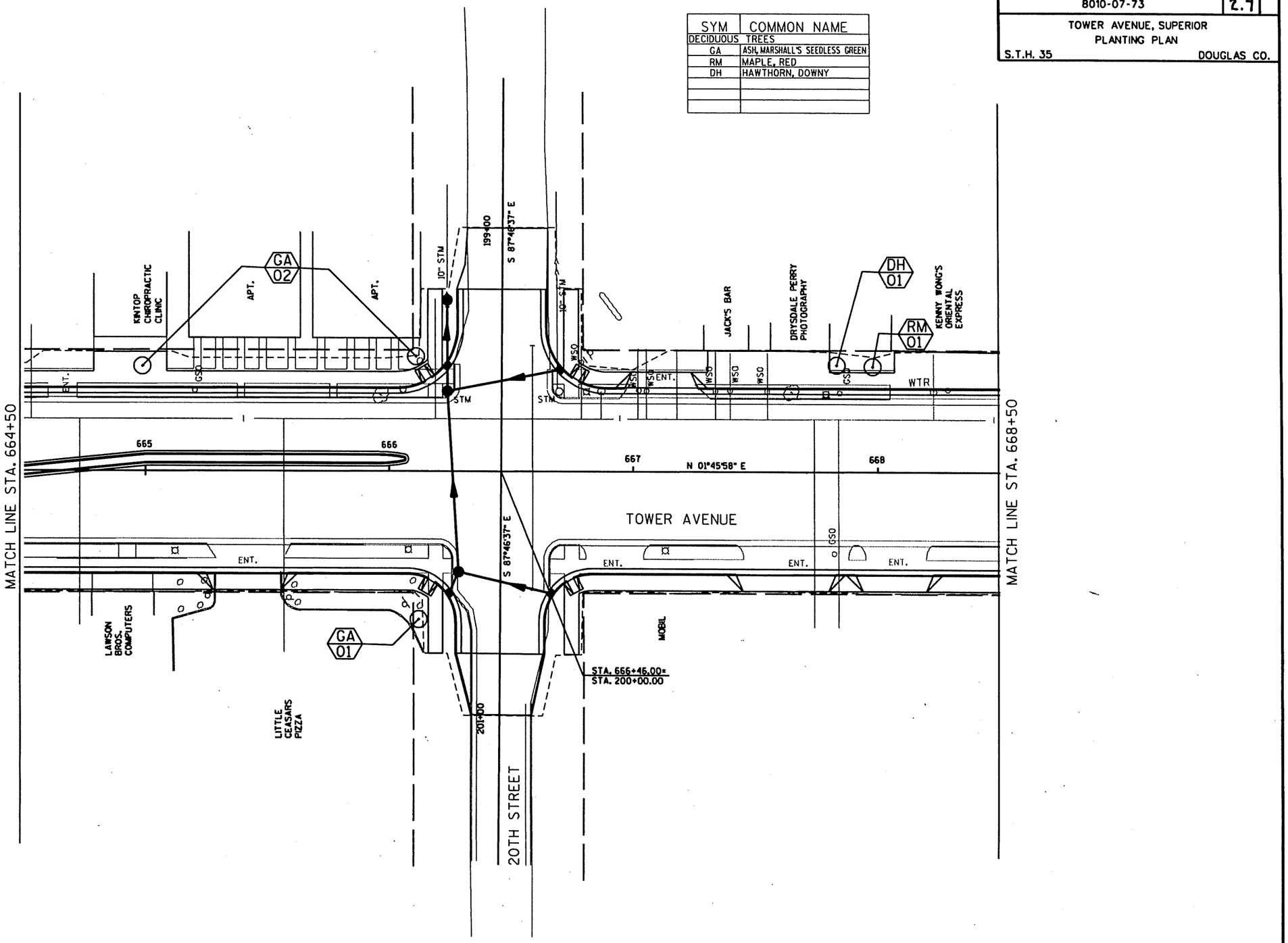
FILE NAME: HDGN:232021a12

WISDOT/CADDS SHEET 42

STATE PROJECT NUMBER	SHEET NO
8010-07-73	2.71

TOWER AVENUE, SUPERIOR
PLANTING PLAN
S.T.H. 35 DOUGLAS CO.

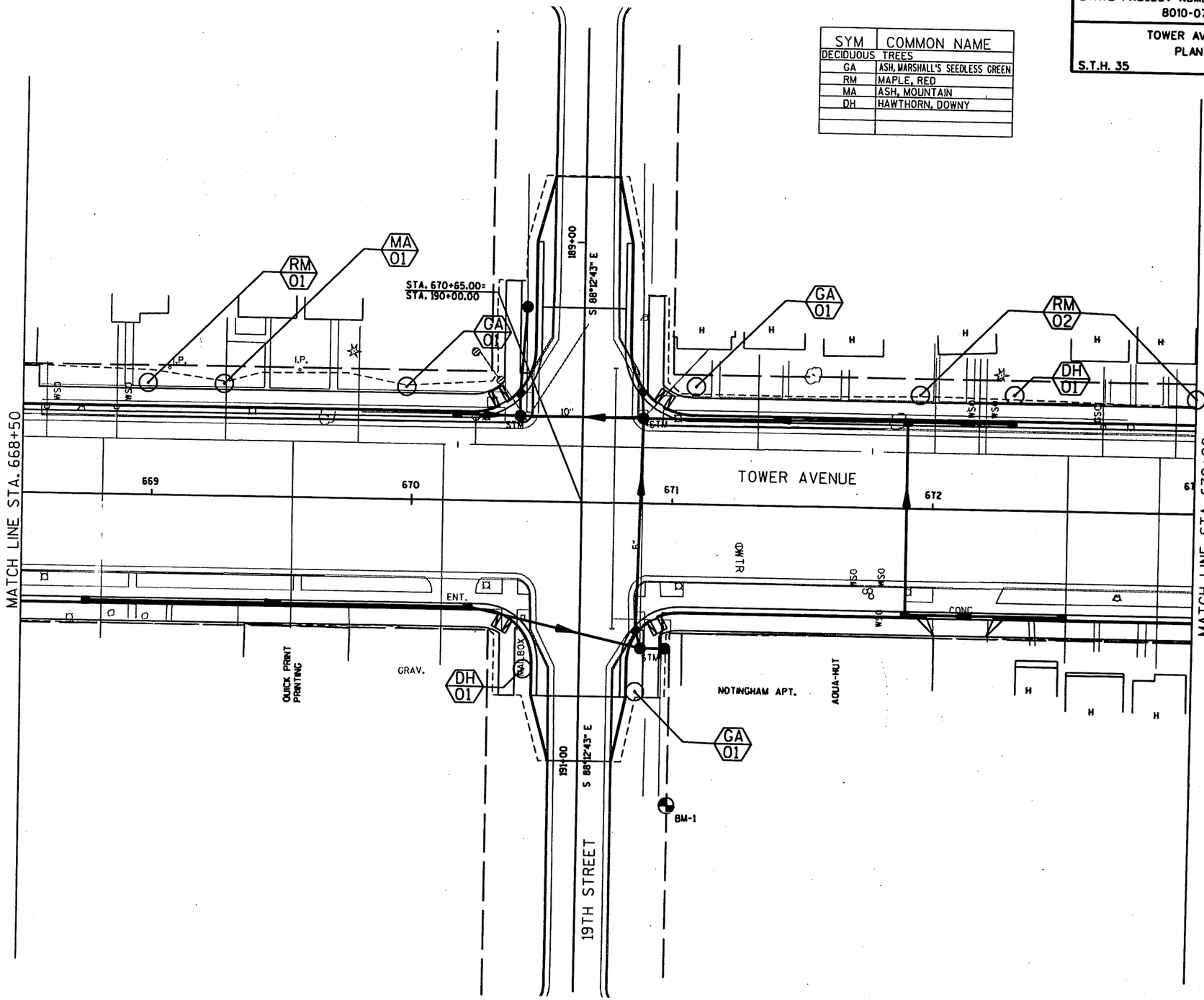
SYM	COMMON NAME
DECIDUOUS	TREES
GA	ASH, MARSHALL'S SEEDLESS GREEN
RM	MAPLE, RED
DH	HAWTHORN, DOWNY



STATE PROJECT NUMBER	SHEET NO.
8010-07-73	2.72

TOWER AVENUE, SUPERIOR
PLANTING PLAN
S.T.H. 35 DOUGLAS CO.

SYM	COMMON NAME
DECIDUOUS TREES	
GA	ASH, MARSHALL'S SEEDLESS GREEN
RM	MAPLE, RED
MA	ASH, MOUNTAIN
DH	HAWTHORN, DOWNY

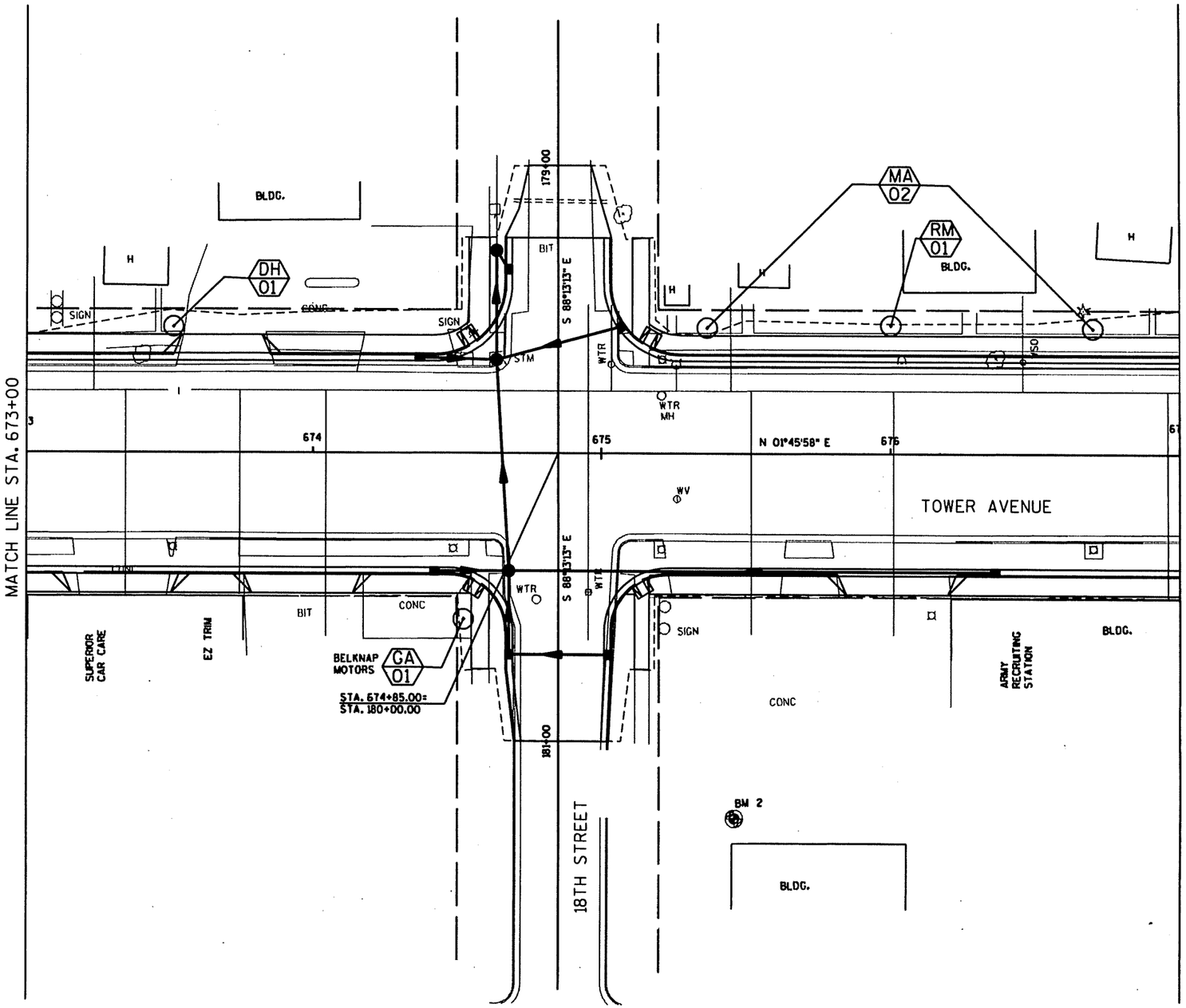


LEVELS ON • 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,51,52,53,54,55, 57,58,59,60,61,62,63

FILE NAME: H00N:232021a14

STATE PROJECT NUMBER	SHEET NO
8010-07-73	2.73

TOWER AVENUE, SUPERIOR
PLANTING PLAN
S.T.H. 35 DOUGLAS CO.



SYM	COMMON NAME
DECIDUOUS TREES	
GA	ASH, MARSHALL'S SEEDLESS GREEN
RM	MAPLE, RED
MA	ASH, MOUNTAIN
DH	HAWTHORN, DOWNY

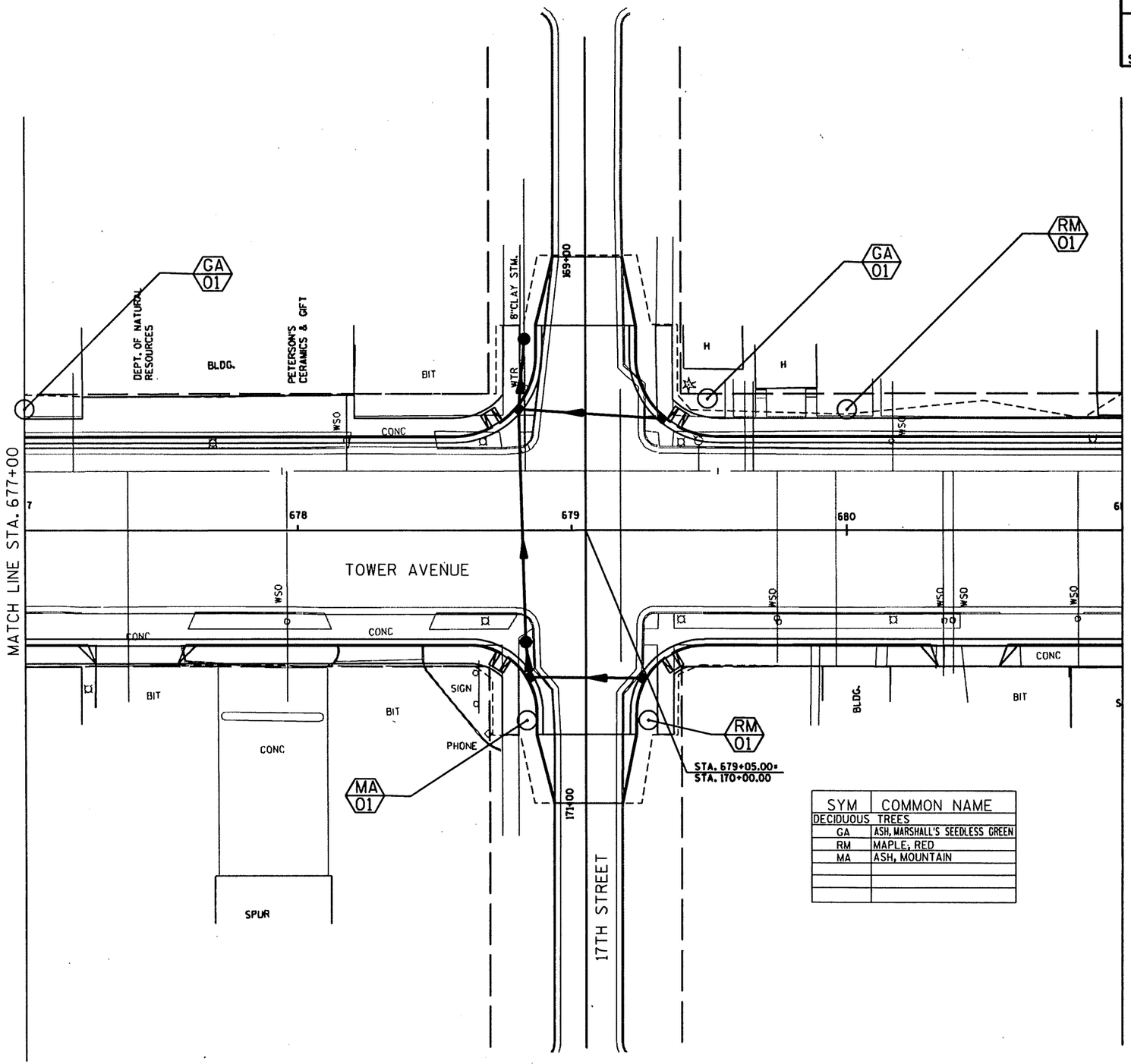
LEVELS ON - 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,51,52,53,54,55, 57,58,59,60,61,62,63

FILE NAME: HDGN:232021a15

WISDOT/CADDS SHEET 42

STATE PROJECT NUMBER	SHEET NO
8010-07-73	2.74

TOWER AVENUE, SUPERIOR
PLANTING PLAN
S.T.H. 35 DOUGLAS CO.



SYM	COMMON NAME
DECIDUOUS TREES	
GA	ASH, MARSHALL'S SEEDLESS GREEN
RM	MAPLE, RED
MA	ASH, MOUNTAIN

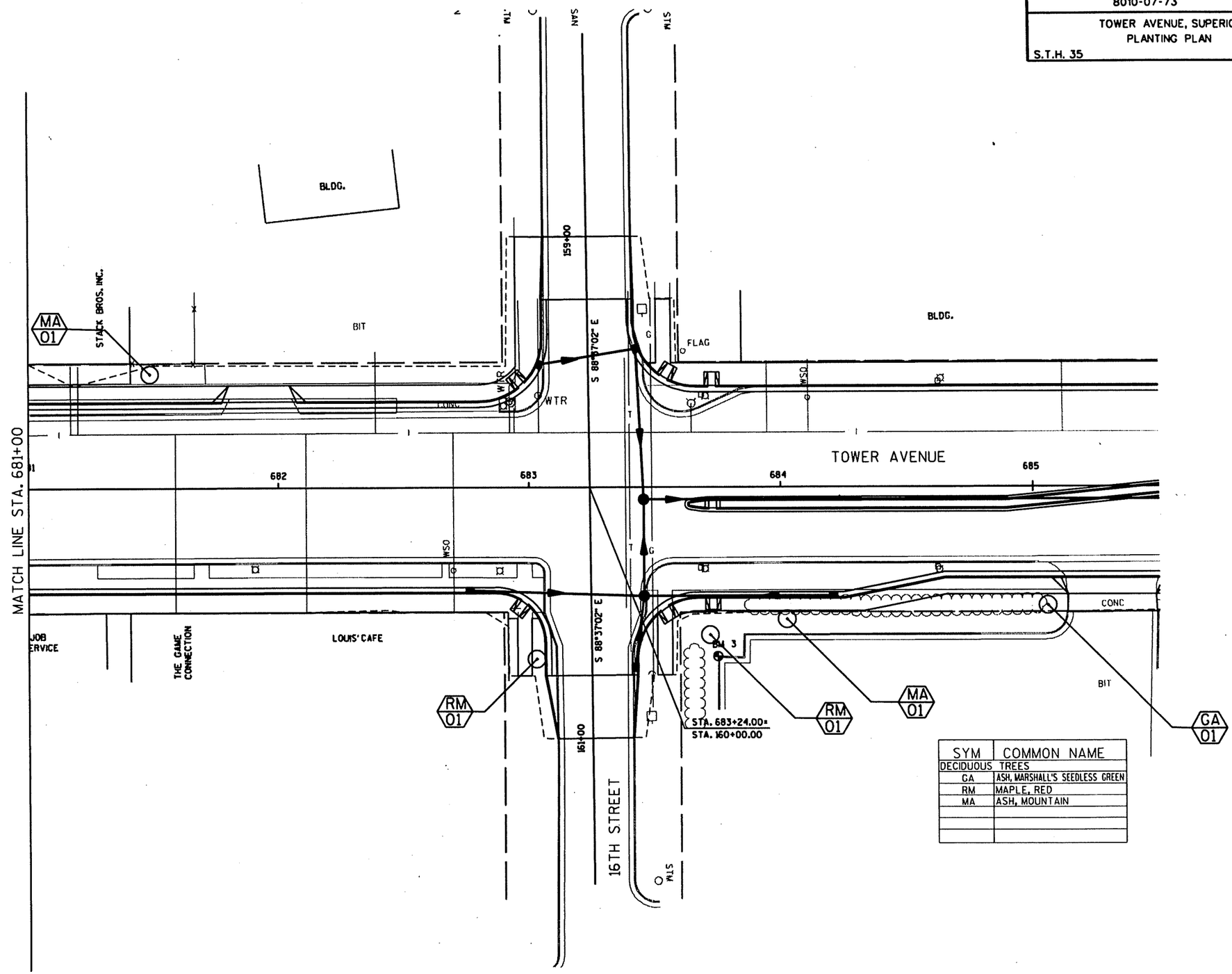
LEVELS ON • 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,51,52,53,54,55,57,58,59,60,61,62,63

FILE NAME: HDGN:232021a16

WISDOT/CADDS SHEET 42

STATE PROJECT NUMBER	SHEET NO
8010-07-73	2.75

TOWER AVENUE, SUPERIOR
PLANTING PLAN
S.T.H. 35 DOUGLAS CO.



SYM	COMMON NAME
DECIDUOUS TREES	
GA	ASH, MARSHALL'S SEEDLESS GREEN
RM	MAPLE, RED
MA	ASH, MOUNTAIN

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

FILE NAME: HDGN:23202ia17

WISDOT/CADDS SHEET 42

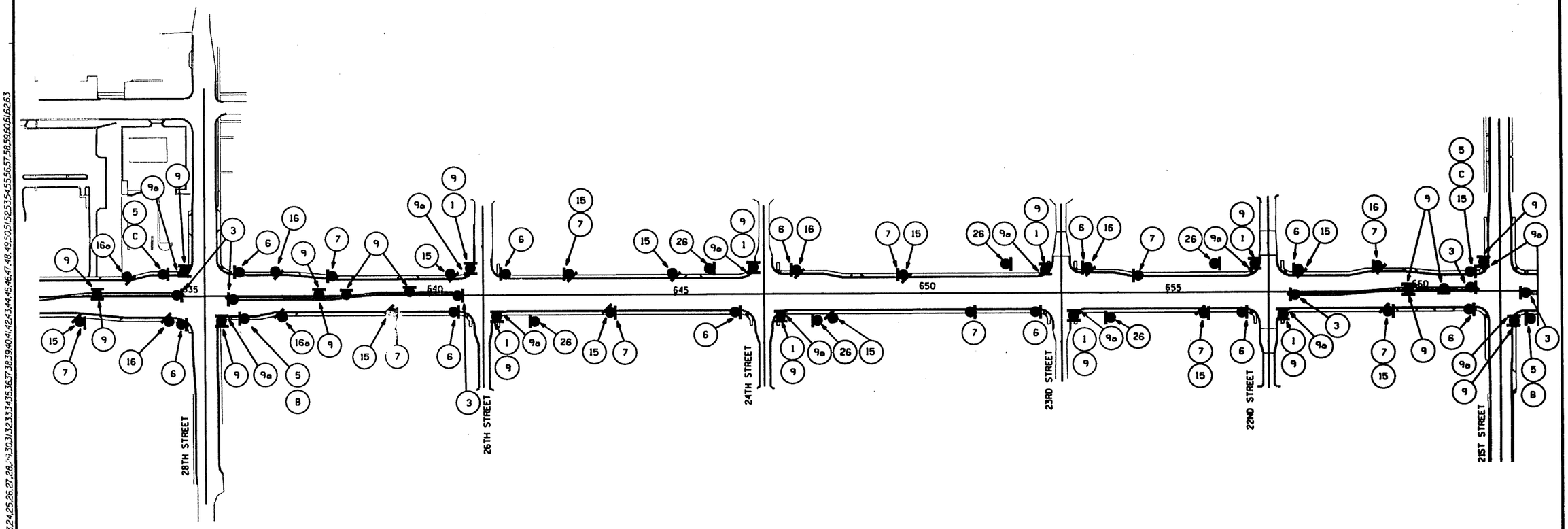
STATE PROJECT NUMBER	SHEET NO.
8010-07-73	2.82

PERMANENT SIGNING PLAN
TOWER AVENUE

S.T.H. 35 DOUGLAS COUNTY

N

1	2	3	5	6	7	9	9a	11	12	13	13a	14	14a	14b	15	16	16a	18	19
STOP R1-1 36" X 36"	XX=35 UNLESS OTHERWISE NOTED SPEED LIMIT XX R2-1 24" X 30"	R4-7 24" X 30"	35 M1-6 24" X 24"	DO NOT ENTER R5-1 30" X 30"	WRONG WAY R5-9 36" X 24"	ONE WAY R6-2R 18" X 24"	ONE WAY R6-2L 18" X 24"	H D9-2 24" X 24"	M6-3 21" X 21"	M6-1L 21" X 21"	M6-1R 21" X 21"	MB6-1R 21" X 21"	MB5-1L 21" X 21"	MB5-1R 21" X 21"	NO PARKING ANY TIME R7-1D 18" X 24"	NO PARKING BUS STOP R7-7D 18" X 24"	NO PARKING BUS STOP R7-7DR 18" X 24"	NO PARKING ANY TIME R7-1L 18" X 24"	25 M.P.H. W13-1 18" X 18"



20	21	22	22a	23	24	26	27	28	29	30	B	C	D	E	F	G
W1-3R 36" X 36"	STOP AHEAD W3-1 36" X 36"	RIGHT LANE MUST TURN RIGHT R3-7R 30" X 30"	LEFT LANE MUST TURN LEFT R3-7L 30" X 30"	W1-3L 36" X 36"	W1-7 48" X 24"	CENTER LANE ONLY R3-9b 24" X 36"	W5-52L 12" X 36"	ONLY R3-8R 30" X 30"	W11-8 30" X 30"	2 M1-4 24" X 24"	NORTH M3-1 24" X 12"	SOUTH M3-3 24" X 12"	EAST M3-2 24" X 12"	WEST M3-4 24" X 12"	3-WAY R1-3-3 12" X 6"	JCT M2-1 12" X 15"

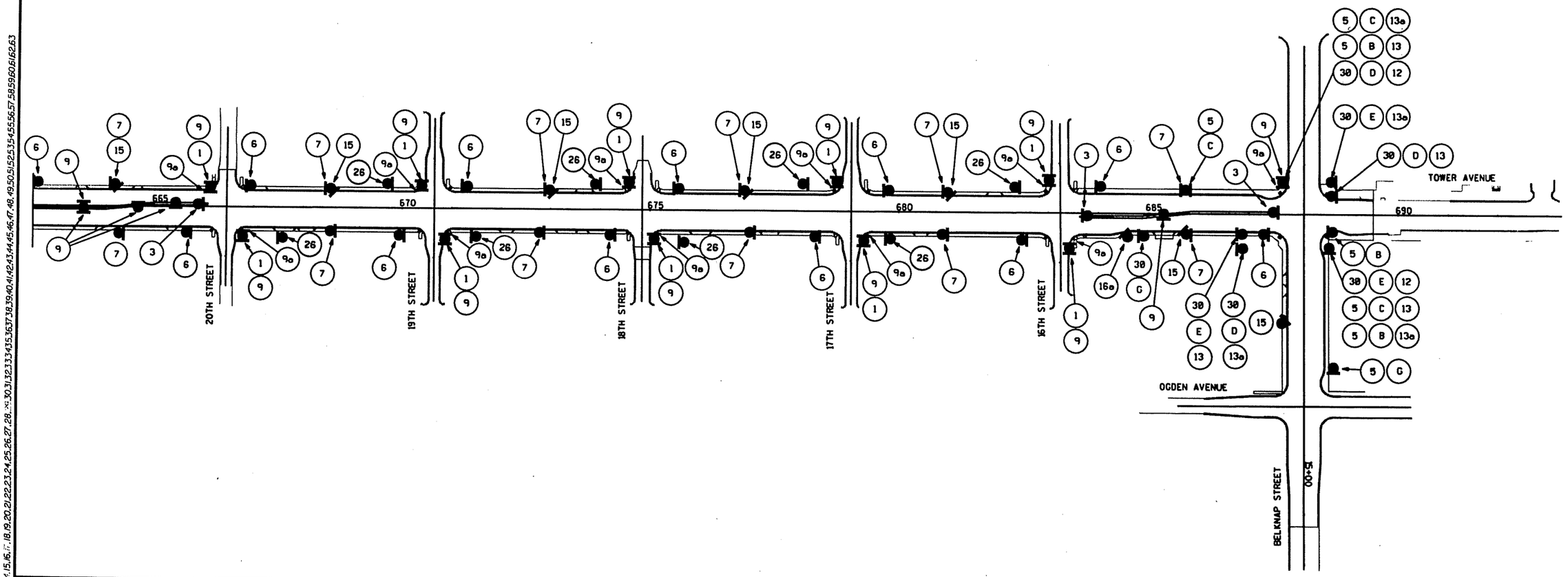
LEVELS ON 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,51,52,53,54,55,56,57,58,59,60,61,62,63

FILE NAME: 23202PS2.DGN

STATE PROJECT NUMBER	SHEET NO.
8010-07-73	2.83

PERMANENT SIGNING PLAN
TOWER AVENUE
S.T.H. 35 — DOUGLAS COUNTY

N



1	2	3	5	6	7	9	9a	11	12	13	13a	14	14a	14b	15	16	16a	18	19
STOP	XX=35 UNLESS OTHERWISE NOTED		35	DO NOT ENTER	WRONG WAY	ONE WAY ⇨	ONE WAY ⇦	H	⇧	⇦	⇨	⇨	⇖	⇗	NO PARKING ANY TIME ⇔	NO PARKING BUS STOP ⇔	NO PARKING BUS STOP	NO PARKING ANY TIME ⇦	25 M.P.H.
R1-1 36" X 36"	SPEED LIMIT XX R2-1 24" X 30"	R4-7 24" X 30"	M1-6 24" X 24"	R5-1 30" X 30"	R5-9 36" X 24"	R6-2R 18" X 24"	R6-2L 18" X 24"	D9-2 24" X 24"	M6-3 21" X 21"	M6-1L 21" X 21"	M6-1R 21" X 21"	MB6-1R 21" X 21"	MB5-1L 21" X 21"	MB5-1R 21" X 21"	R7-1D 18" X 24"	R7-7D 18" X 24"	R7-7DR 18" X 24"	R7-1L 18" X 24"	W13-1 18" X 18"

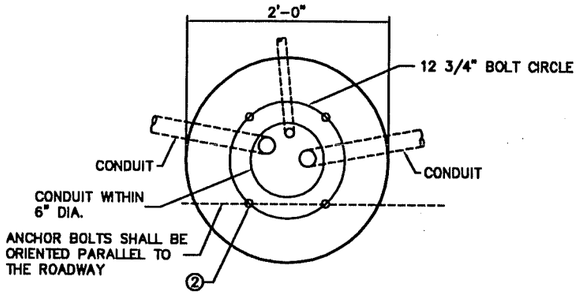
20	21	22	22a	23	24	26	27	28	29	30	B	C	D	E	F	G
W1-3R 36" X 36"	STOP AHEAD W3-1 36" X 36"	RIGHT LANE MUST TURN RIGHT R3-7R 30" X 30"	LEFT LANE MUST TURN LEFT R3-7L 30" X 30"	W1-3L 36" X 36"	W1-7 48" X 24"	CENTER LANE ONLY R3-9b 24" X 36"	W5-52L 12" X 36"	ONLY R3-8R 30" X 30"	W11-8 30" X 30"	2 M1-4 24" X 24"	NORTH M3-1 24" X 12"	SOUTH M3-3 24" X 12"	EAST M3-2 24" X 12"	WEST M3-4 24" X 12"	3-WAY R1-3-3 12" X 6"	JCT M2-1 12" X 15"

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

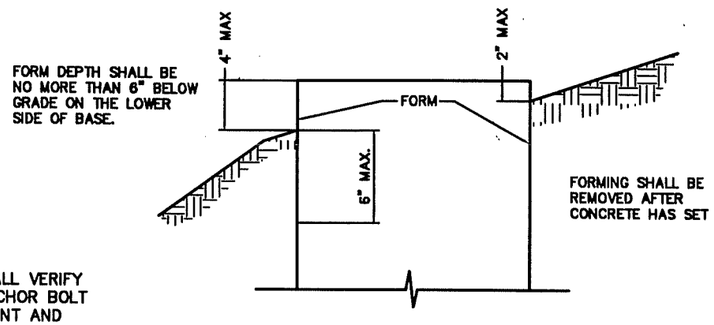
FILE NAME: HDGN:23202PS3.DGN

STATE PROJECT NUMBER	SHEET NO.
8010-07-73	2.84

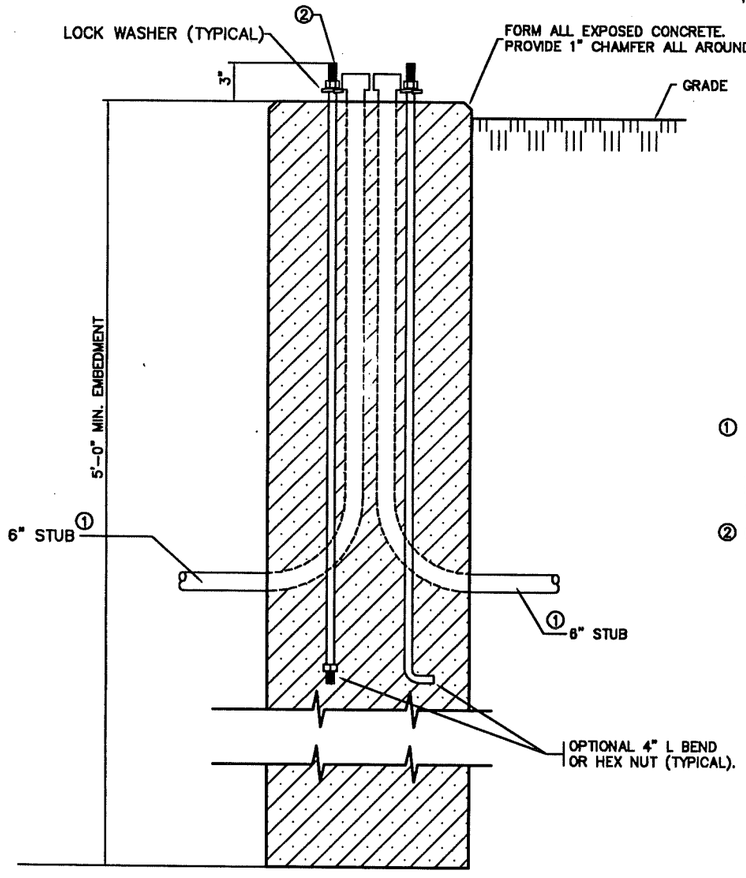
ELECTRICAL/LIGHTING DETAILS
TOWER AVENUE & FRONTAGE ROADS
S.T.H. 35 DOUGLAS COUNTY



NOTE:
CONTRACTOR SHALL VERIFY BOLT CIRCLE, ANCHOR BOLT SIZE, ARRANGEMENT AND PROJECTION.



FORMING DETAIL



KEY

① THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE AND INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES. THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE THAT IS NOT INSTALLED BELOW THE TRAVELED WAY SHALL BE 18 INCHES. THE MAXIMUM DEPTH OF ALL CONDUIT SHALL BE 36 INCHES EXCEPT WITH WRITTEN APPROVAL BY THE ENGINEER.

② (4) 1" DIA. X 3'-6" ANCHOR BOLTS.

CONCRETE BASE TYPE 1, SPECIAL

GENERAL NOTES

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

BASES SHALL BE EXCAVATED BY THE USE OF A CIRCULAR AUGER.

TOP SURFACES OF CONCRETE BASES SHALL BE TROWEL FINISHED AND LEVEL.

CONDUIT SIZES AND LOCATIONS SHALL BE AS SHOWN ON THE PLANS.

MINIMUM BENDING RADIUS OF CONDUIT = 6 X THE DIAMETER.

CONDUIT HEIGHT ABOVE CONCRETE BASES SHALL BE 1 INCH. ALL METALLIC CONDUIT ENDS SHALL BE REAMED AND THREADED.

ALL METALLIC CONDUITS IN WHICH WIRE OR CABLE IS NOT TO BE INSTALLED SHALL BE CAPPED WITH THREADED PROTECTIVE CAPS, AS APPROVED BY THE ENGINEER.

ALL NONMETALLIC CONDUITS IN WHICH WIRE OR CABLE IS NOT INSTALLED SHALL BE PLUGGED.

ALL CONDUIT ENDS AT THE TOP OF CONCRETE BASES SHALL BE CAPPED IF METALLIC OR PLUGGED IF NONMETALLIC IMMEDIATELY AFTER PLACEMENT AND BEFORE CONCRETE IS POURED. CONDUITS IN WHICH WIRE OR CABLE IS NOT INSTALLED SHALL REMAIN CAPPED OR PLUGGED.

BELL ENDS SHALL BE INSTALLED ON ALL PVC CONDUIT EXPOSED AT THE TOP OF CONCRETE BASES BEFORE INSTALLATION OF CABLE OR WIRE.

ENDS OF CONDUIT INSTALLED BELOW GRADE FOR FUTURE USE SHALL BE CAPPED IF METALLIC OR PLUGGED IF NONMETALLIC.

WHEN REQUIRED TO CONNECT NONMETALLIC CONDUIT TO METALLIC CONDUIT, ONLY ADAPTER FITTINGS, U.L. LISTED FOR ELECTRICAL USE, SHALL BE USED.

IF A BASE REQUIRES A DEEP FORM BECAUSE OF LOOSE DIRT OR FILL, THE FORM SHALL BE REMOVED BEFORE BACKFILLING AROUND THE BASE. BACKFILL SHALL BE TAMPED TIGHT AGAINST THE BARE CONCRETE BASE IN LAYERS OF 1 FOOT OR LESS.

A NO. 6 AWG. STRANDED COPPER GROUNDING WIRE SHALL BE CADWELDED TO THE GROUND ROD.

THE GROUNDING WIRE SHALL BE FURNISHED AND INSTALLED TO ENTER THE BASE THROUGH A 1 INCH CONDUIT INSTALLED FOR GROUNDING PURPOSES, LEAVING A 4 FOOT COIL OF WIRE ABOVE THE CONCRETE BASE. THE GROUNDING WIRE SHALL BE NEATLY COILED AND THE COILS TIED TOGETHER.

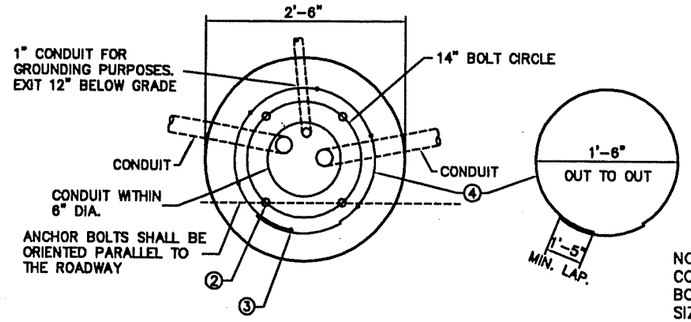
ANCHOR BOLTS SHALL BE THREADED 8" IN LENGTH ON EACH END OF THE BOLT, AND BE MANUFACTURED IN ACCORDANCE WITH SECTION 640.2.9 OF THE STANDARD SPECIFICATIONS AND ASTM A-449, OR ASTM A-687 (GRADE 105).

WHEN ANCHOR BOLTS USING THE ALTERNATE "L" BEND ARE FURNISHED, THE 4" "L" BEND SHALL BE IN ADDITION TO THE SPECIFIED ANCHOR BOLT BAR LENGTH. THE "L" BEND END SHALL NOT BE THREADED.

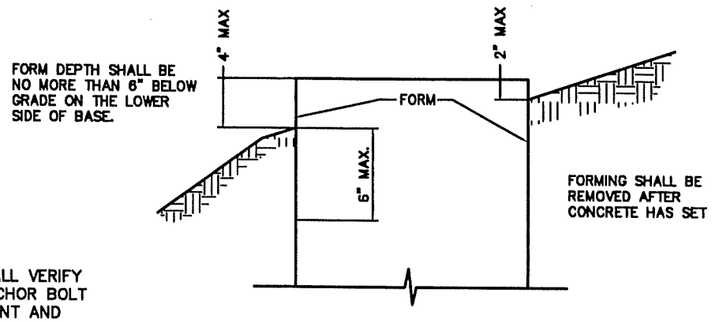
SEH JOB #2320.01 SEH DRAWING #23202d2b
DATE:
REVISED:

STATE PROJECT NUMBER	SHEET NO.
8010-07-73	2.85

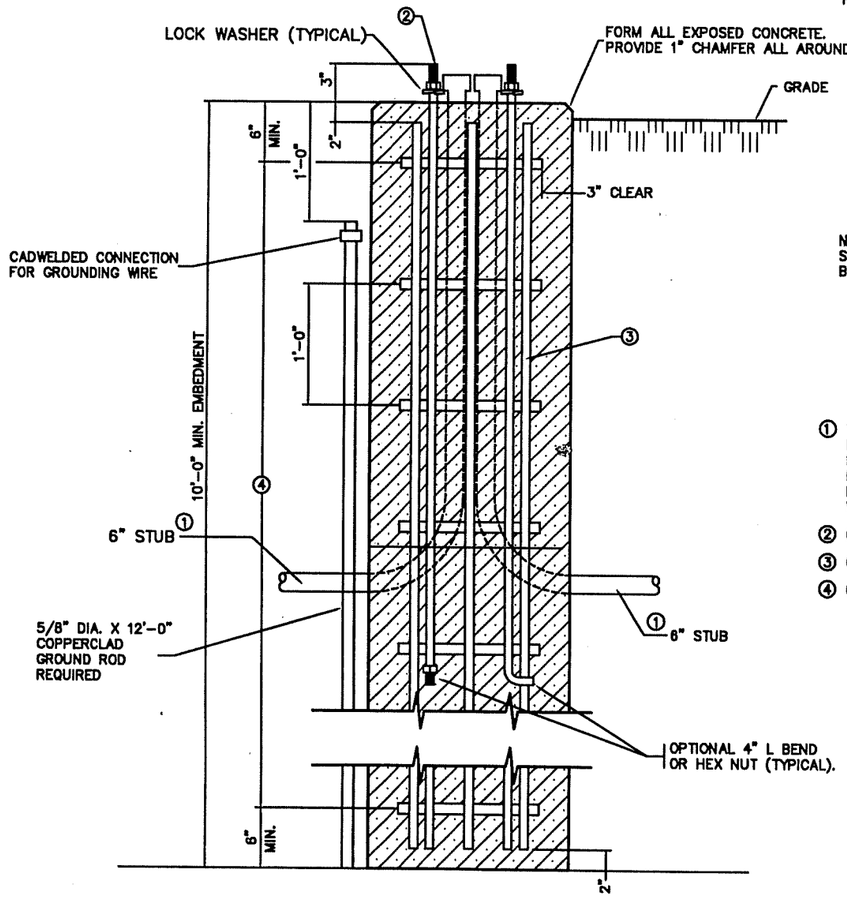
ELECTRICAL/LIGHTING DETAILS
TOWER AVENUE & FRONTAGE ROADS
S.T.H. 35 DOUGLAS COUNTY



NOTE:
CONTRACTOR SHALL VERIFY BOLT CIRCLE, ANCHOR BOLT SIZE, ARRANGEMENT AND PROJECTION.



FORMING DETAIL



NOTE:
SOIL CONDITIONS SHALL BE VERIFIED TO ASSURE BEARING CAPACITY OF 3000 PSF.

CONCRETE BASE TYPE 2, SPECIAL

KEY

① THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE AND INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES. THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE THAT IS NOT INSTALLED BELOW THE TRAVELED WAY SHALL BE 18 INCHES. THE MAXIMUM DEPTH OF ALL CONDUIT SHALL BE 36 INCHES EXCEPT WITH WRITTEN APPROVAL BY THE ENGINEER.

② (4) A325 DIA. X 5'-0" ANCHOR BOLTS.

③ (6) NO.6 X 9'-8" BAR STEEL REINFORCEMENT.

④ (7) NO.4 X 5'-1" BAR STEEL REINFORCEMENT @ 1'-0" C-C.

GENERAL NOTES

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

BASES SHALL BE EXCAVATED BY THE USE OF A CIRCULAR AUGER.

TOP SURFACES OF CONCRETE BASES SHALL BE TROWEL FINISHED AND LEVEL.

CONDUIT SIZES AND LOCATIONS SHALL BE AS SHOWN ON THE PLANS.

MINIMUM BENDING RADIUS OF CONDUIT = 6 X THE DIAMETER.

CONDUIT HEIGHT ABOVE CONCRETE BASES SHALL BE 1 INCH. ALL METALLIC CONDUIT ENDS SHALL BE REAMED AND THREADED.

ALL METALLIC CONDUITS IN WHICH WIRE OR CABLE IS NOT TO BE INSTALLED SHALL BE CAPPED WITH THREADED PROTECTIVE CAPS, AS APPROVED BY THE ENGINEER.

ALL NONMETALLIC CONDUITS IN WHICH WIRE OR CABLE IS NOT INSTALLED SHALL BE PLUGGED.

ALL CONDUIT ENDS AT THE TOP OF CONCRETE BASES SHALL BE CAPPED IF METALLIC OR PLUGGED IF NONMETALLIC IMMEDIATELY AFTER PLACEMENT AND BEFORE CONCRETE IS POURED. CONDUITS IN WHICH WIRE OR CABLE IS NOT INSTALLED SHALL REMAIN CAPPED OR PLUGGED.

BELL ENDS SHALL BE INSTALLED ON ALL PVC CONDUIT EXPOSED AT THE TOP OF CONCRETE BASES BEFORE INSTALLATION OF CABLE OR WIRE.

ENDS OF CONDUIT INSTALLED BELOW GRADE FOR FUTURE USE SHALL BE CAPPED IF METALLIC OR PLUGGED IF NONMETALLIC.

WHEN REQUIRED TO CONNECT NONMETALLIC CONDUIT TO METALLIC CONDUIT, ONLY ADAPTER FITTINGS, U.L. LISTED FOR ELECTRICAL USE, SHALL BE USED.

IF A BASE REQUIRES A DEEP FORM BECAUSE OF LOOSE DIRT OR FILL, THE FORM SHALL BE REMOVED BEFORE BACKFILLING AROUND THE BASE. BACKFILL SHALL BE TAMPED TIGHT AGAINST THE BARE CONCRETE BASE IN LAYERS OF 1 FOOT OR LESS.

A NO. 6 AWG. STRANDED COPPER GROUNDING WIRE SHALL BE CADWELDED TO THE GROUND ROD.

THE GROUNDING WIRE SHALL BE FURNISHED AND INSTALLED TO ENTER THE BASE THROUGH A 1 INCH CONDUIT INSTALLED FOR GROUNDING PURPOSES, LEAVING A 4 FOOT COIL OF WIRE ABOVE THE CONCRETE BASE. THE GROUNDING WIRE SHALL BE NEATLY COILED AND THE COILS TIED TOGETHER.

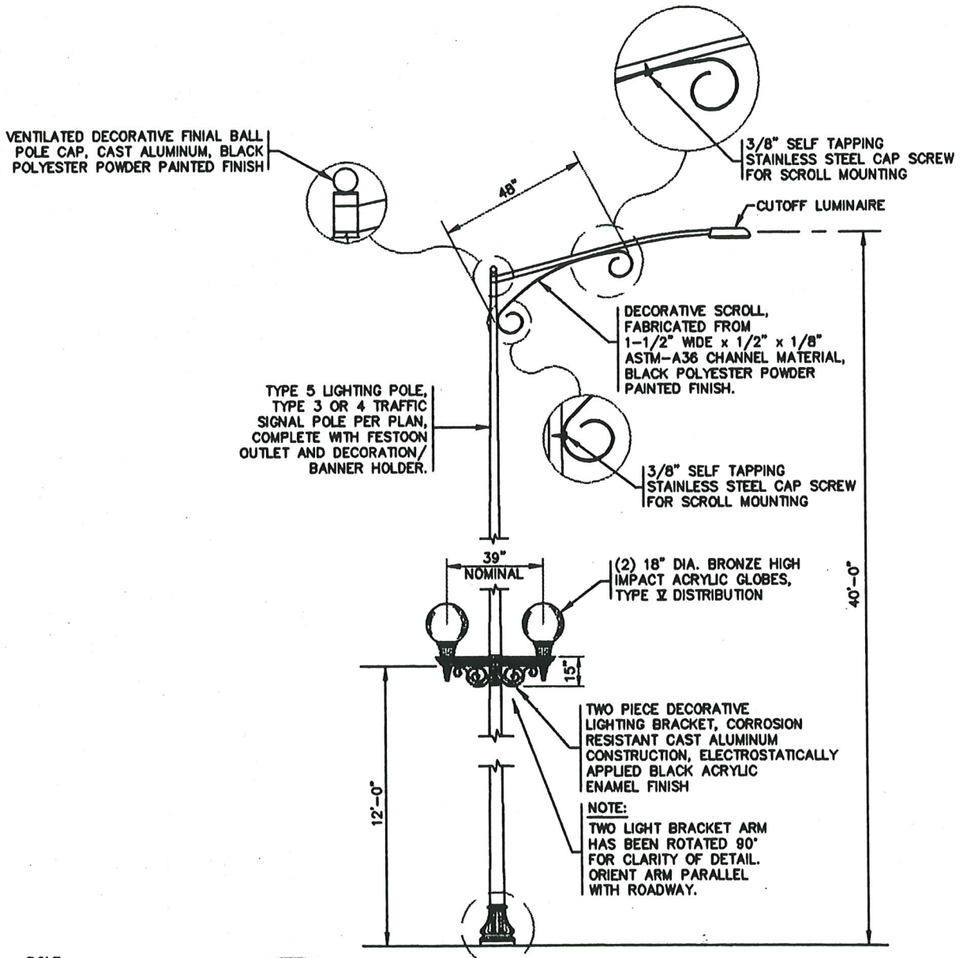
ANCHOR BOLTS SHALL BE THREADED 8" IN LENGTH ON EACH END OF THE BOLT, AND BE MANUFACTURED IN ACCORDANCE WITH SECTION 640.2.9 OF THE STANDARD SPECIFICATIONS AND ASTM A-449, OR ASTM A-687 (GRADE 105).

WHEN ANCHOR BOLTS USING THE ALTERNATE "L" BEND ARE FURNISHED, THE 4" "L" BEND SHALL BE IN ADDITION TO THE SPECIFIED ANCHOR BOLT BAR LENGTH. THE "L" BEND END SHALL NOT BE THREADED.

SCH JOB #2320.01 SCH DRAWING #23202d2a
DATE:
REVISED:

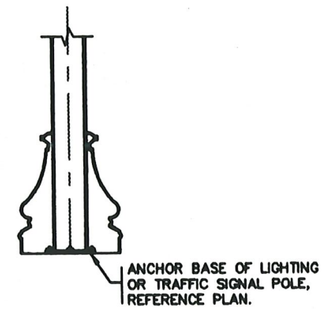
STATE PROJECT NUMBER	SHEET NO.
8010-07-73	2.89

ELECTRICAL/LIGHTING DETAILS
TOWER AVENUE & FRONTAGE ROADS
S.T.H. 35 DOUGLAS COUNTY



DECORATIVE LIGHTING UNIT

DECORATIVE BASE FOR TRAFFIC SIGNAL & LIGHTING POLE

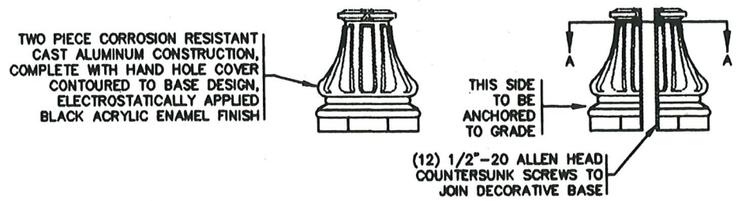


SECTION

PLAN VIEW

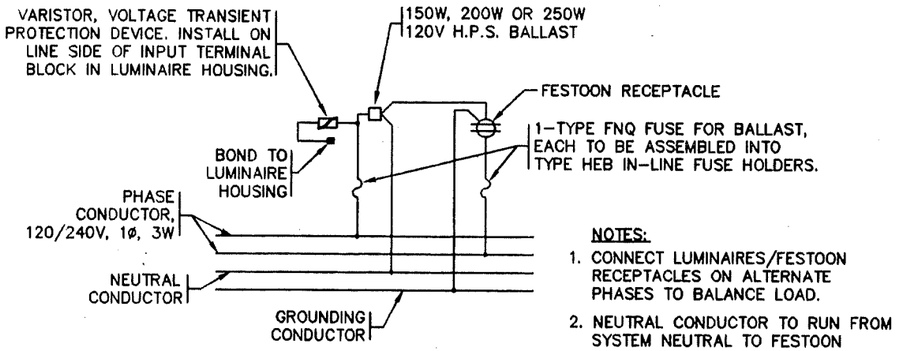
BASE ARRANGEMENT

SECTION A-A



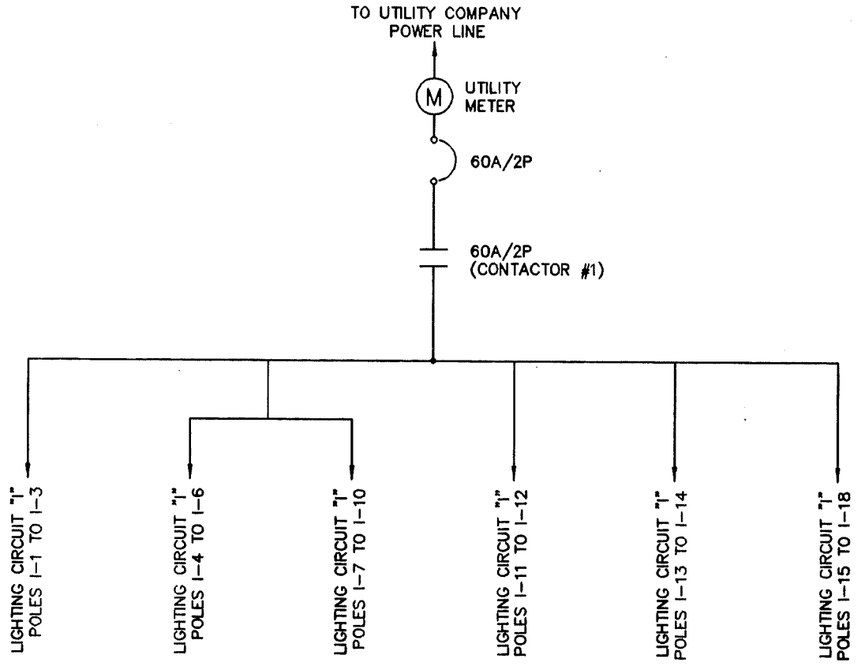
DECORATIVE TWO PIECE BASE

DATE: DECEMBER 12, 1995
REVISED:
HVP JOB # 92207
SEH JOB #
HVP DRAWING # D38
SEH DRAWING #
SCALE: 1/8"=1'-0"



NOTES:
1. CONNECT LUMINAIRES/FESTOON RECEPTACLES ON ALTERNATE PHASES TO BALANCE LOAD.
2. NEUTRAL CONDUCTOR TO RUN FROM SYSTEM NEUTRAL TO FESTOON RECEPTACLE & LUMINAIRE WITHOUT SPLICE.

TYPICAL LUMINAIRE/FESTOON RECEPTACLE WIRING DIAGRAM
120/240V, 1ø, 3W SERVICE



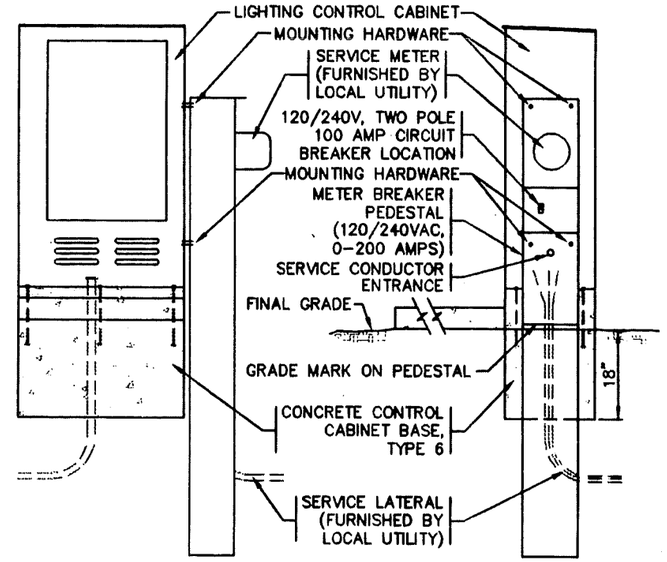
POWER ONE LINE DIAGRAM - 120/240V, 1ø 3 WIRE
LIGHTING CONTROL CABINET NO. 9

DATE: NOVEMBER 1, 1985
REVISED:
HVP JOB #22207
SEH JOB #
HVP DRAWING #033
SEH DRAWING #
SCALE: 1/8"=1'-0"

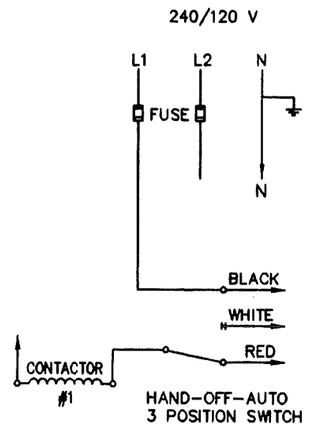
GENERAL NOTES:
DETAILS OF CONSTRUCTION MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

STATE PROJECT NUMBER	SHEET NO.
8010-07-73	2.90

ELECTRICAL/LIGHTING DETAILS
TOWER AVENUE & FRONTAGE ROADS
S.T.H. 35 DOUGLAS COUNTY



ELECTRICAL SERVICE, LIGHTING, STA.40+75 "34TH ST.", 40.0' LT.



NOTE:
COST OF PHOTO ELECTRIC CONTROL (PEC) AND #12 WIRE TO BE INCLUDED UNDER THE ITEM OF "LIGHTING CONTROL CABINET".

3-#12 GA. THWN STRANDED WIRES TO PHOTO-ELECTRIC CONTROL

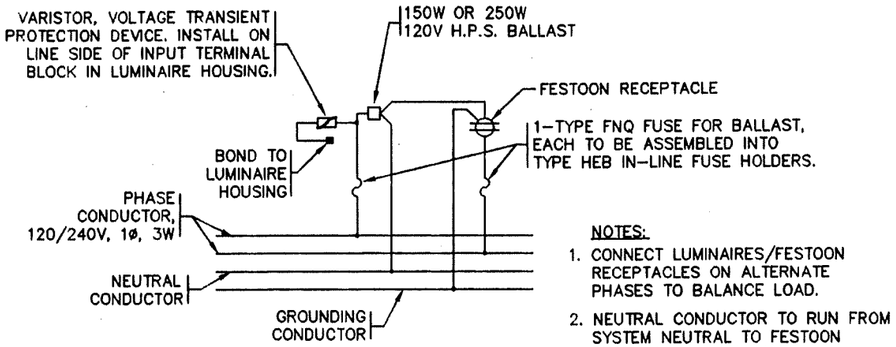
LOCATE PEC IN LIGHTING CONTROL CABINET

CONTROL WIRING SCHEMATIC
LIGHTING CONTROL CABINET NO. 9

STATE PROJECT NUMBER	SHEET NO.
8010-07-73	2.91

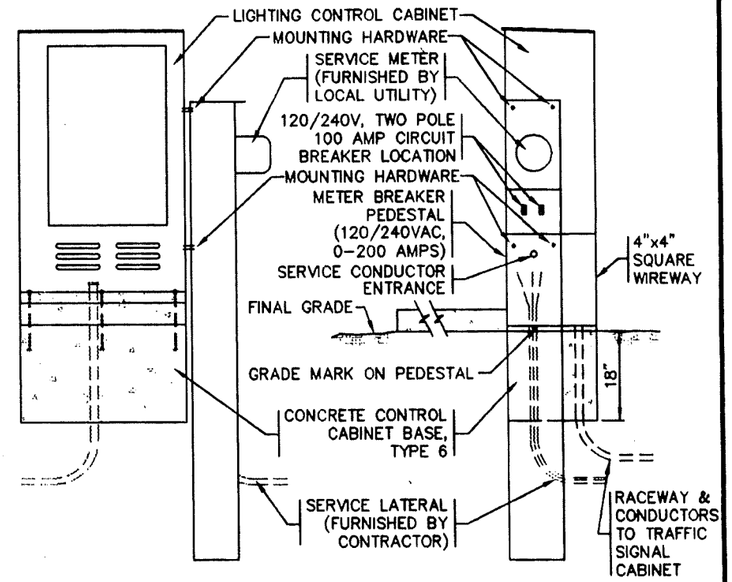
ELECTRICAL/LIGHTING DETAILS
TOWER AVENUE & FRONTAGE ROADS
S.T.H. 35 DOUGLAS COUNTY

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

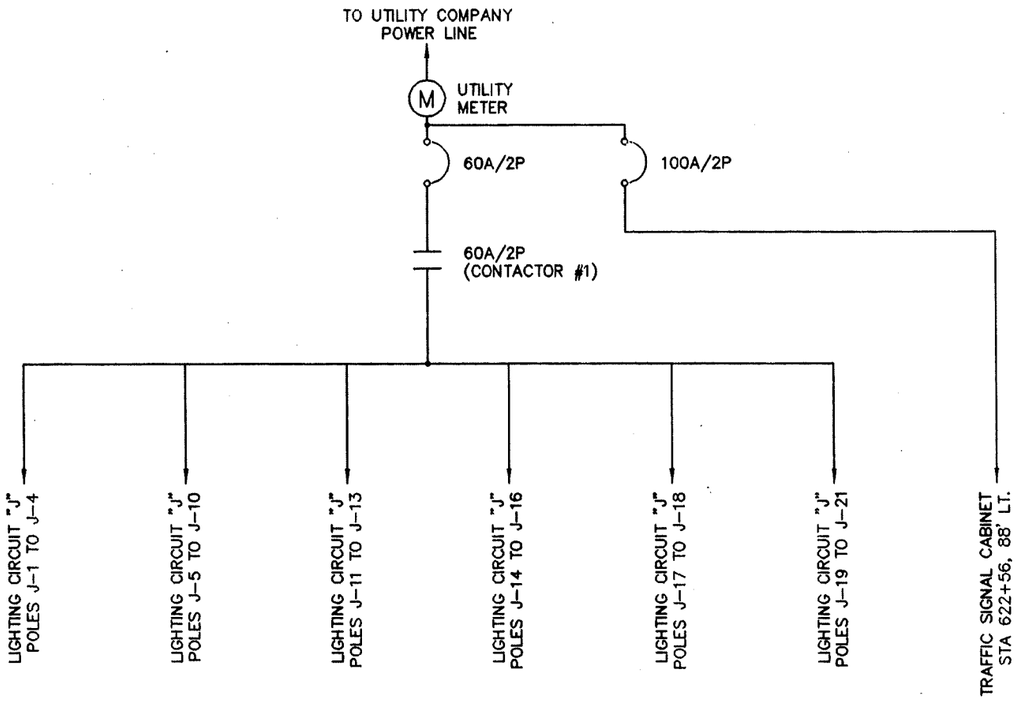


NOTES:
1. CONNECT LUMINAIRES/FESTOON RECEPTACLES ON ALTERNATE PHASES TO BALANCE LOAD.
2. NEUTRAL CONDUCTOR TO RUN FROM SYSTEM NEUTRAL TO FESTOON RECEPTACLE & LUMINAIRE WITHOUT SPLICE.

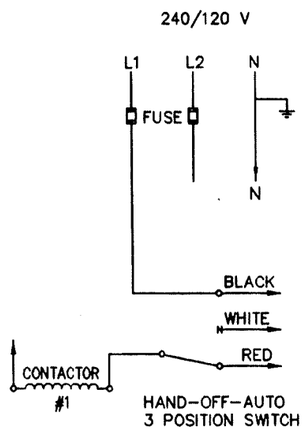
TYPICAL LUMINAIRE/FESTOON RECEPTACLE WIRING DIAGRAM
120/240V, 1ø, 3W SERVICE



ELECTRICAL SERVICE, LIGHTING, STA.49+00 "31ST ST.", 37.0' LT.



POWER ONE LINE DIAGRAM - 120/240V, 1ø 3 WIRE
LIGHTING CONTROL CABINET NO. 10



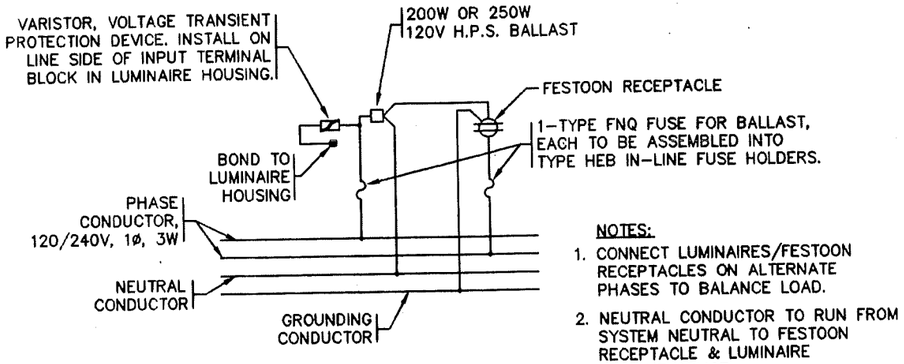
NOTE:
COST OF PHOTO ELECTRIC CONTROL (PEC) AND #12 WIRE TO BE INCLUDED UNDER THE ITEM OF "LIGHTING CONTROL CABINET".

3-#12 GA. THWN STRANDED WIRES TO PHOTO-ELECTRIC CONTROL

LOCATE PEC IN LIGHTING CONTROL CABINET

CONTROL WIRING SCHEMATIC
LIGHTING CONTROL CABINET NO. 10

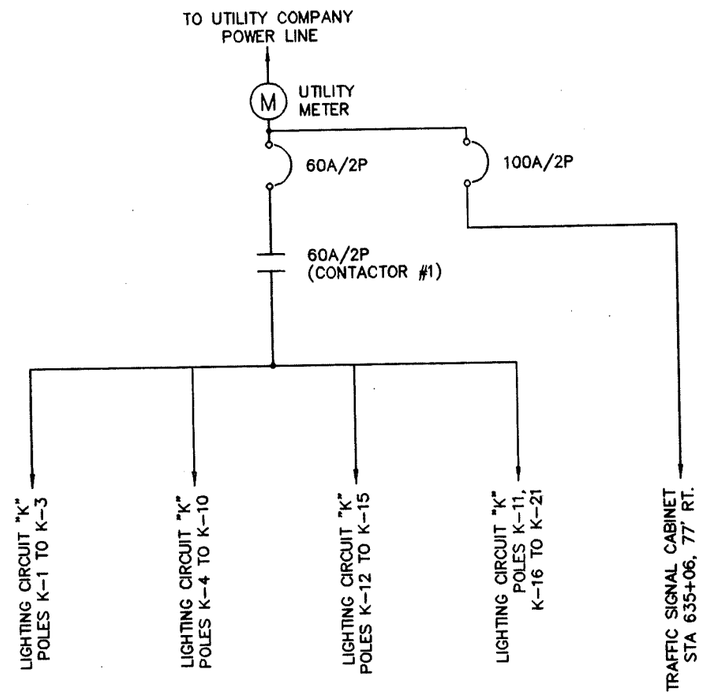
DATE: NOVEMBER 1, 1985
REVISED:
HVP JOB #82207
SEH JOB #
HVP DRAWING #334
SEH DRAWING #
SCALE: 1/8"=1'-0"



NOTES:

1. CONNECT LUMINAIRES/FESTOON RECEPTACLES ON ALTERNATE PHASES TO BALANCE LOAD.
2. NEUTRAL CONDUCTOR TO RUN FROM SYSTEM NEUTRAL TO FESTOON RECEPTACLE & LUMINAIRE WITHOUT SPLICE.

TYPICAL LUMINAIRE/FESTOON RECEPTACLE WIRING DIAGRAM
120/240V, 1ø, 3W SERVICE

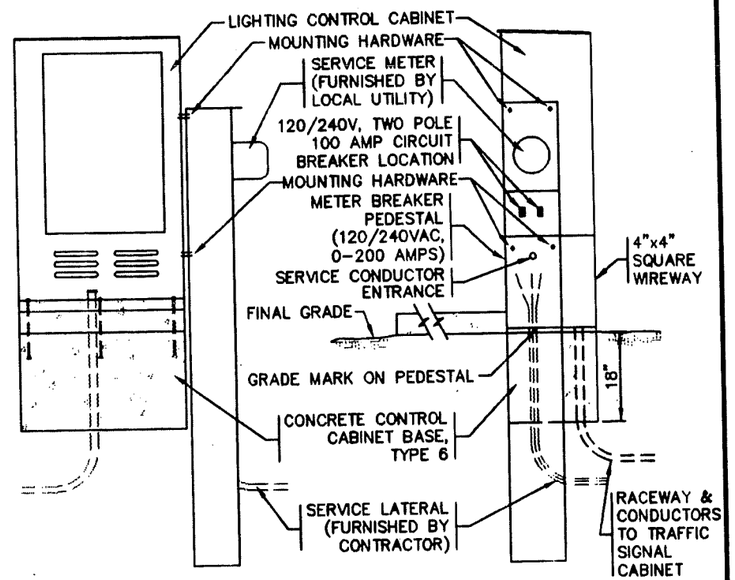


POWER ONE LINE DIAGRAM - 120/240V, 1ø 3 WIRE
LIGHTING CONTROL CABINET NO. 11

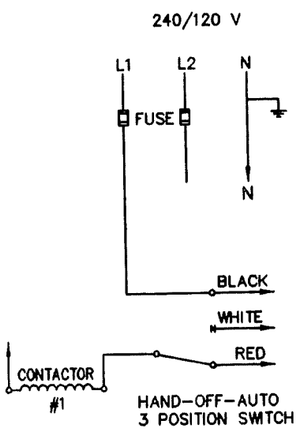
GENERAL NOTES:
DETAILS OF CONSTRUCTION MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

STATE PROJECT NUMBER	SHEET NO.
8010-07-73	2.92

ELECTRICAL/LIGHTING DETAILS
TOWER AVENUE & FRONTAGE ROADS
S.T.H. 35 DOUGLAS COUNTY



ELECTRICAL SERVICE, LIGHTING, STA.635+06 TOWER AVENUE 85.0' RT.



NOTE:
COST OF PHOTO ELECTRIC CONTROL (PEC) AND #12 WIRE TO BE INCLUDED UNDER THE ITEM OF "LIGHTING CONTROL CABINET".

3-#12 GA. THWN STRANDED WIRES TO PHOTO-ELECTRIC CONTROL

LOCATE PEC IN LIGHTING CONTROL CABINET

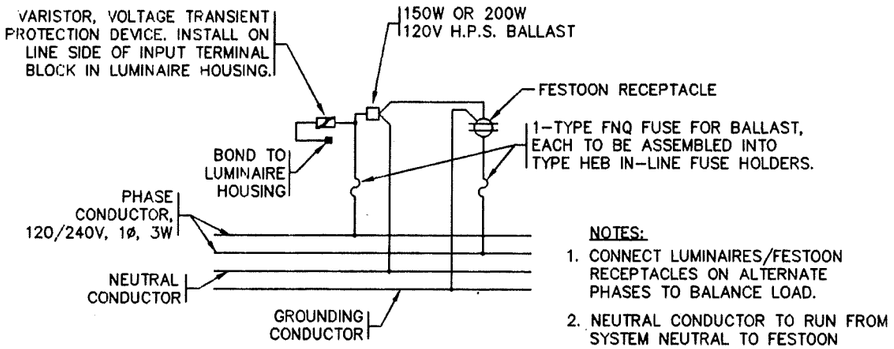
CONTROL WIRING SCHEMATIC
LIGHTING CONTROL CABINET NO. 11

DATE: NOVEMBER 1, 1995
REVISED:
HVP JOB #92207 HVP DRAWING #035
SEH JOB # SEH DRAWING #
SCALE: 1/8"=1'-0"

STATE PROJECT NUMBER	SHEET NO.
8010-07-73	2.93

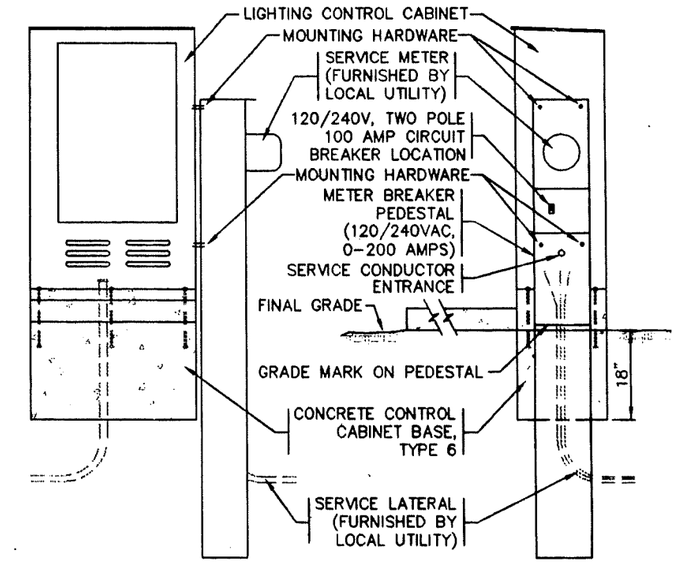
ELECTRICAL/LIGHTING DETAILS
TOWER AVENUE & FRONTAGE ROADS
S.T.H. 35 DOUGLAS COUNTY

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



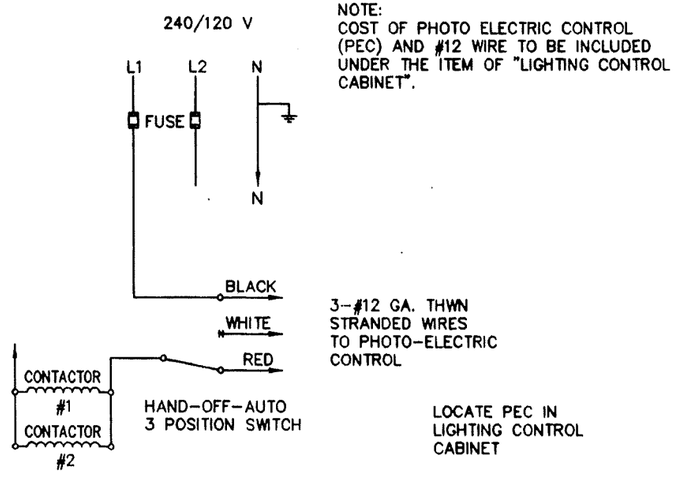
NOTES:
1. CONNECT LUMINAIRES/FESTOON RECEPTACLES ON ALTERNATE PHASES TO BALANCE LOAD.
2. NEUTRAL CONDUCTOR TO RUN FROM SYSTEM NEUTRAL TO FESTOON RECEPTACLE & LUMINAIRE WITHOUT SPLICE.

TYPICAL LUMINAIRE/FESTOON RECEPTACLE WIRING DIAGRAM
120/240V, 1Ø, 3W SERVICE



ELECTRICAL SERVICE, LIGHTING, STA.657+50 TOWER AVENUE 46.0' LT.

POWER ONE LINE DIAGRAM - 120/240V, 1Ø 3 WIRE
LIGHTING CONTROL CABINET NO. 12



NOTE:
COST OF PHOTO ELECTRIC CONTROL (PEC) AND #12 WIRE TO BE INCLUDED UNDER THE ITEM OF "LIGHTING CONTROL CABINET".

3-#12 GA. THWN STRANDED WIRES TO PHOTO-ELECTRIC CONTROL

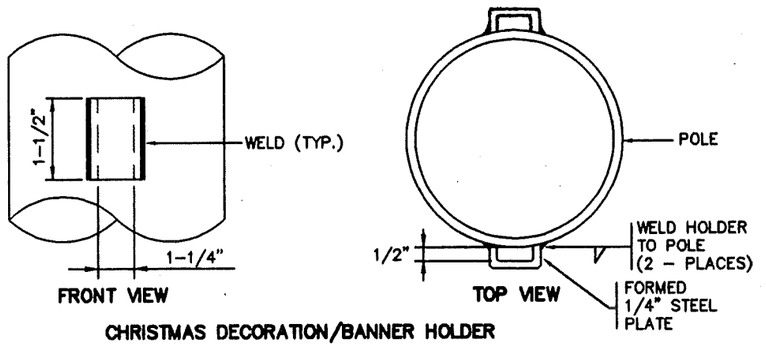
LOCATE PEC IN LIGHTING CONTROL CABINET

CONTROL WIRING SCHEMATIC
LIGHTING CONTROL CABINET NO. 12

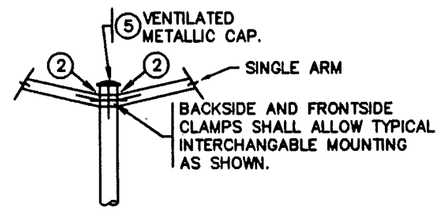
DATE: NOVEMBER 1, 1995
REVISED:
HVP JOB #92207 SEH JOB #
HVP DRAWING #D36 SEH DRAWING #
SCALE: 1/8"=1'-0"

STATE PROJECT NUMBER	SHEET NO.
8010-07-73	2.98

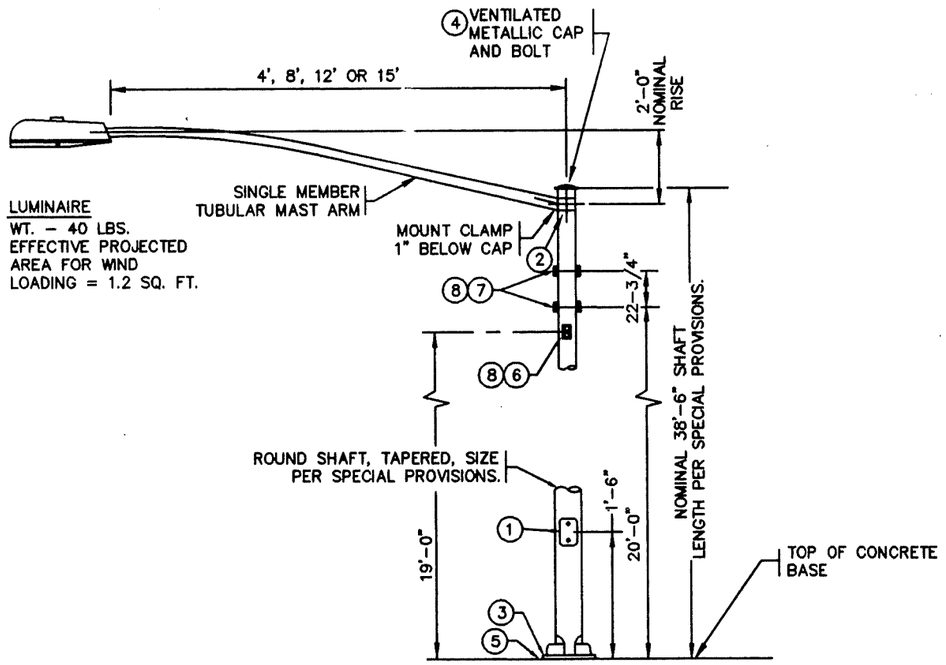
ELECTRICAL/LIGHTING DETAILS
TOWER AVENUE & FRONTAGE ROADS
S.T.H. 35 DOUGLAS COUNTY



CHRISTMAS DECORATION/BANNER HOLDER



INTERCHANGEABLE MOUNTING DETAIL



POLES, SPECIAL, 38.5 FOOT SHAFTS, MOUNTING CONFIGURATION
(MAXIMUM LOAD)
LIGHTING ONLY

GENERAL NOTES

ALL LUMINAIRE POLE MOUNTINGS SHALL BE DESIGNED FOR ARMS AND LUMINAIRES AS SHOWN ON THE PLANS.

THE SLIPFITTER END OF THE MAST ARM SHALL BE A NOMINAL 2-3/8 INCHES IN OUTSIDE DIAMETER. THE STRAIGHT PORTION OF THE SLIPFITTER END OF THE LUMINAIRE ARM SHALL BE A NOMINAL 12 INCHES IN LENGTH.

(1) 4" X 6" REINFORCED HAND HOLE & COVER ASSEMBLY WITH 2 (TWO) 1/4" X 3/4" - 20 TPI HEX HEAD STAINLESS STEEL BOLTS.

(2) GROMMETS, 1" CHASE NIPPLES OR 1" CLOSE CONDUIT NIPPLES WITH BUSHINGS SHALL BE PROVIDED FOR 1-3/8" HOLE IN POLE SHAFT FOR WIRING.

(3) POLE BASE.

(4) FURNISH AND INSTALL VENTILATED CAST METALLIC (ALUMINUM ALLOY) CAPS. FASTEN CAPS WITH 1 (ONE) 1/4"x3/4"-20 TPI STAINLESS STEEL HEX HEAD BOLT.

(5) SHIMMING, IF NEEDED, SHALL BE LOCATED BETWEEN THE CONCRETE FOUNDATION AND THE POLE BASE.

(6) FESTOON OUTLET WITH DUPLEX RECEPTACLE & WEATHERPROOF GASKETED COVER, LOCATE 90° CLOCKWISE FROM MAST ARM.

(7) CHRISTMAS DECORATION/BANNER HOLDER - SEE DETAIL THIS SHEET, LOCATE 0° FROM MAST ARM.

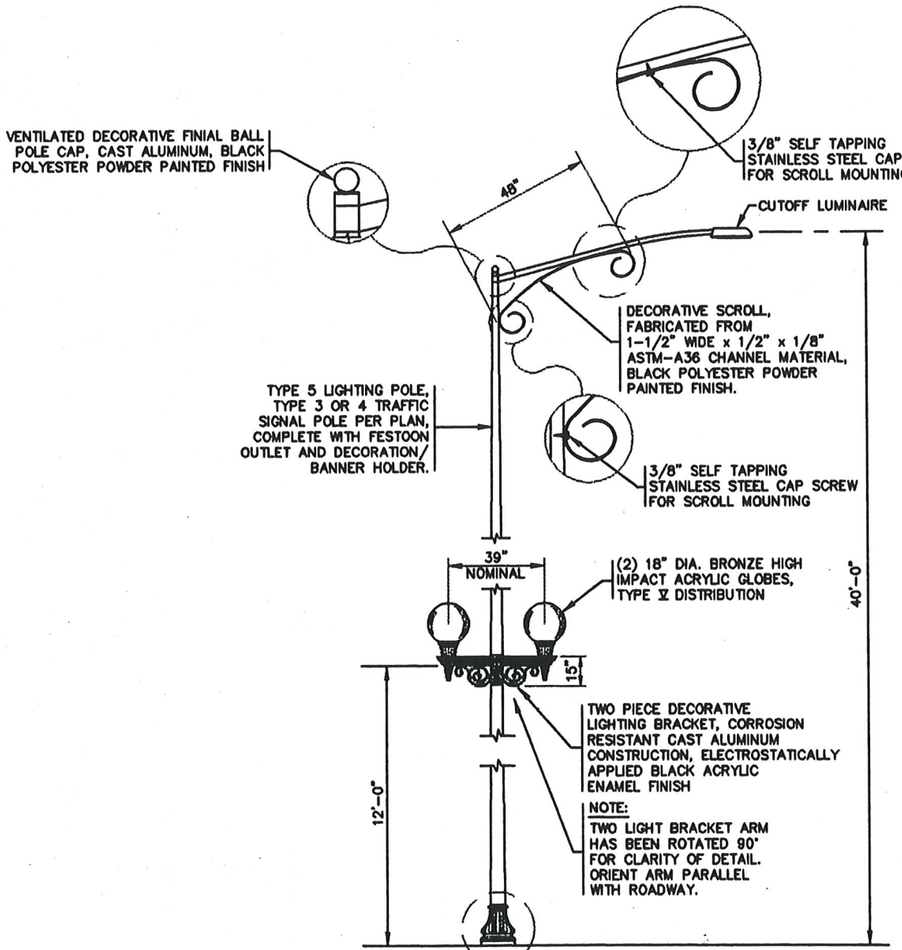
(8) VERIFY ALL DIMENSIONS FOR LOCATING & FABRICATING FESTOON OUTLETS & CHRISTMAS DECORATION/BANNER HOLDERS WITH OWNER DURING SHOP DRAWING APPROVAL.

(9) SEE STANDARD DETAIL DRAWING S.D.D. 9 E 1-1e FOR HARDWARE DETAILS FOR POLE MOUNTINGS.

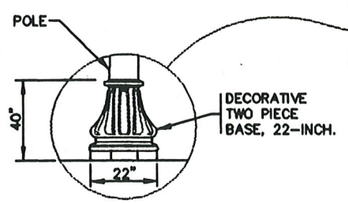
DATE: DECEMBER 12, 1995
REVISED:
HVP JOB #92207
SEH JOB #
HVP DRAWING #032
SEH DRAWING #
SCALE 1/8"=1'-0"

STATE PROJECT NUMBER	SHEET NO.
8010-07-73	2.89

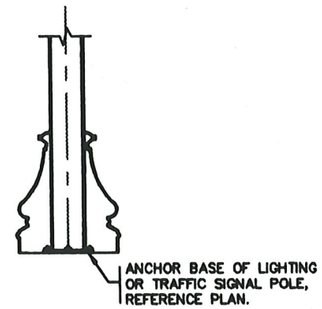
ELECTRICAL/LIGHTING DETAILS
TOWER AVENUE & FRONTAGE ROADS
S.T.H. 35 DOUGLAS COUNTY



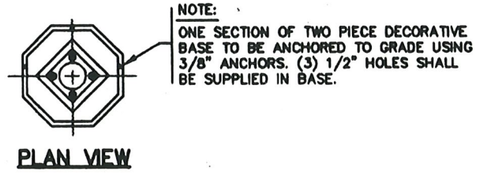
DECORATIVE LIGHTING UNIT



DECORATIVE BASE FOR TRAFFIC SIGNAL & LIGHTING POLE

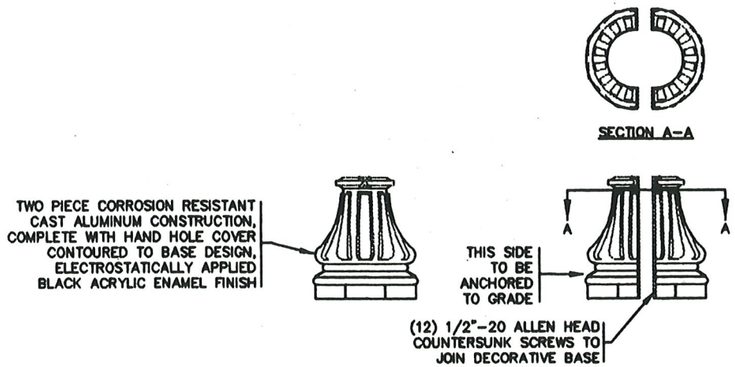


SECTION



PLAN VIEW

BASE ARRANGEMENT



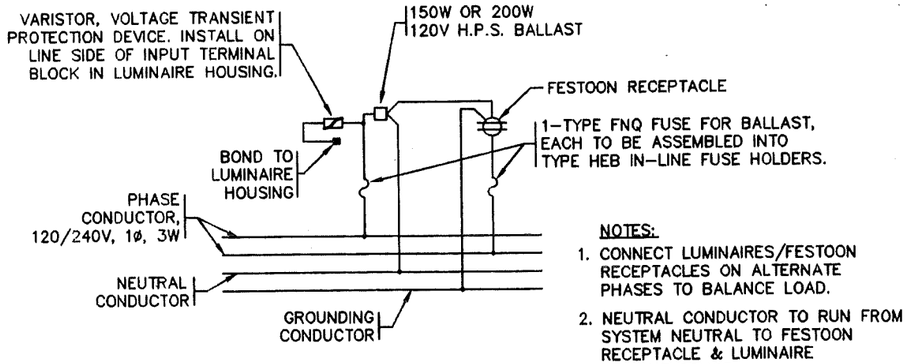
DECORATIVE TWO PIECE BASE

DATE: DECEMBER 12, 1995
REVISED:
HVP JOB # 92207
SEH JOB #
HVP DRAWING #D38
SEH DRAWING #
SCALE: 1/8"=1'-0"

STATE PROJECT NUMBER	SHEET NO.
8010-07-73	2.94

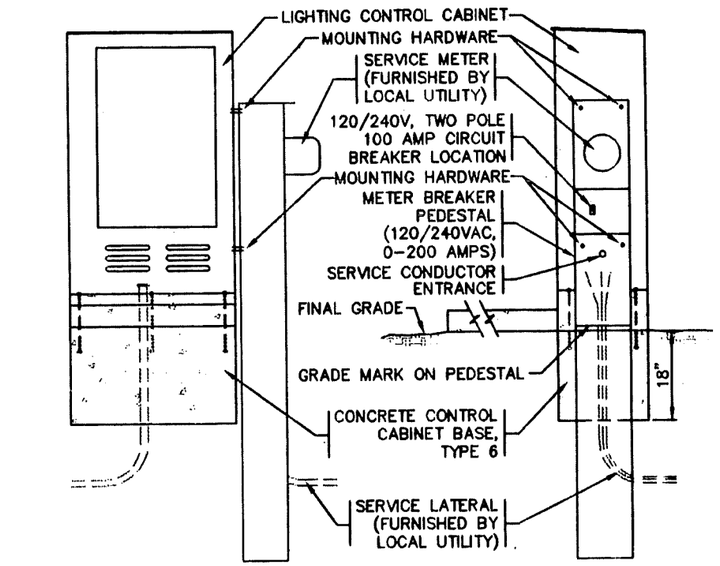
ELECTRICAL/LIGHTING DETAILS
TOWER AVENUE & FRONTAGE ROADS
S.T.H. 35 DOUGLAS COUNTY

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

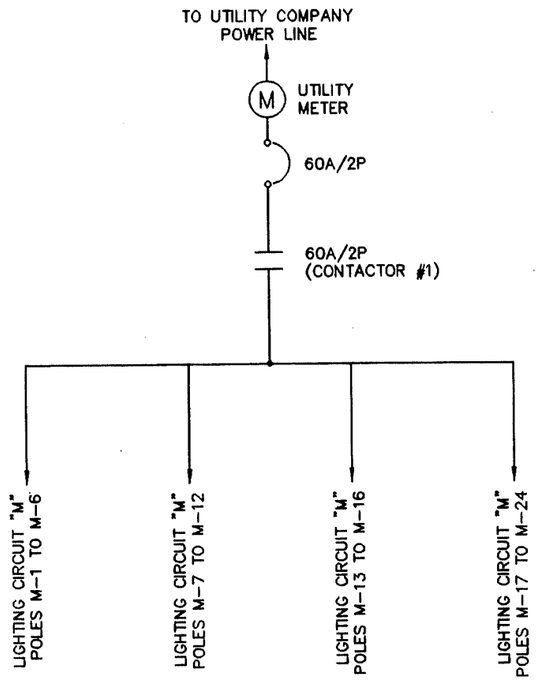


NOTES:
1. CONNECT LUMINAIRES/FESTOON RECEPTACLES ON ALTERNATE PHASES TO BALANCE LOAD.
2. NEUTRAL CONDUCTOR TO RUN FROM SYSTEM NEUTRAL TO FESTOON RECEPTACLE & LUMINAIRE WITHOUT SPLICE.

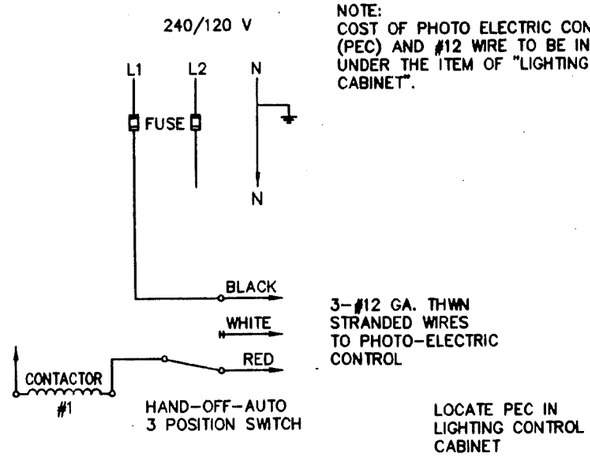
TYPICAL LUMINAIRE/FESTOON RECEPTACLE WIRING DIAGRAM
120/240V, 1ø, 3W SERVICE



ELECTRICAL SERVICE, LIGHTING, STA.675+07.2 TOWER AVENUE 60.0' LT.



POWER ONE LINE DIAGRAM - 120/240V, 1ø 3 WIRE
LIGHTING CONTROL CABINET NO. 13



NOTE:
COST OF PHOTO ELECTRIC CONTROL (PEC) AND #12 WIRE TO BE INCLUDED UNDER THE ITEM OF "LIGHTING CONTROL CABINET".

CONTROL WIRING SCHEMATIC
LIGHTING CONTROL CABINET NO. 13

DATE: NOVEMBER 1, 1995
REVISED:
HVP JOB #92207
SEH JOB #
HVP DRAWING #0137
SEH DRAWING #
SCALE:1/8"=1'-0"

STATE PROJECT NUMBER	SHEET NO.
8010-07-73	2.95

ELECTRICAL/LIGHTING DETAILS
TOWER AVENUE & FRONTAGE ROADS
S.T.H. 35 DOUGLAS COUNTY

LIGHTING / ELECTRICAL LEGEND

SINGLE ARM POLE

A-3 — POLE NUMBER
STA 0+00 — LOCATION
III-250-35-10
- MAST ARM LENGTH IN FEET
- POLE SHAFT LENGTH IN FEET
- LAMP WATTAGE
- IES DISTRIBUTION TYPE

⊠ LIGHTING CONTROL CABINET

⊗ PULL BOX - 24" x 36"

NC — NEW CONDUIT, NON-METALLIC UNLESS NOTED OTHERWISE.
- (6)(3) — QUANTITY OF CONDUCTORS
- CONDUCTOR SIZE

EC — EXISTING CONDUIT, NON-METALLIC 2-INCH, UNLESS NOTED OTHERWISE.

CID — CABLE-IN-DUCT
- (6)(3) — QUANTITY OF CONDUCTORS
- CONDUCTOR SIZE

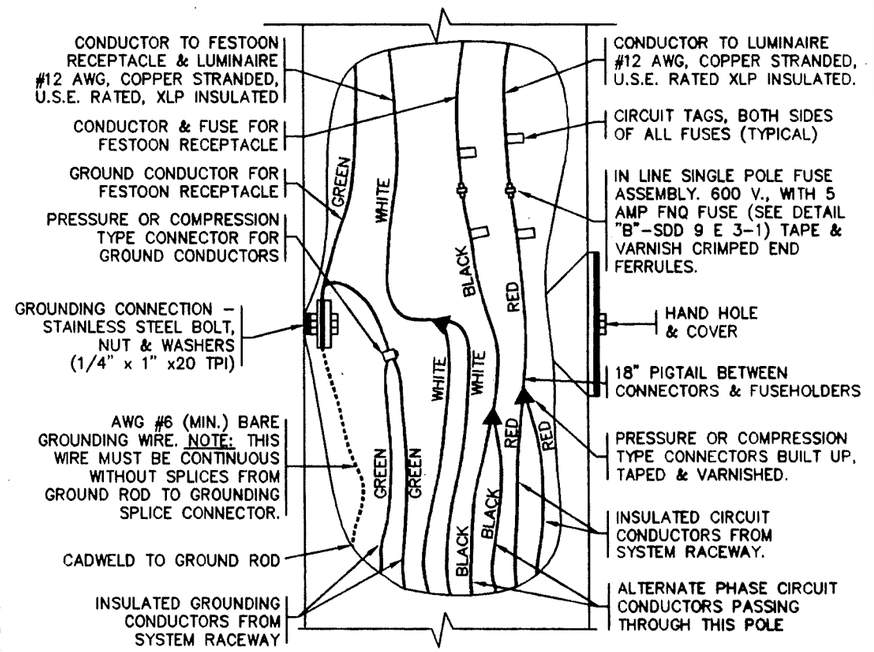
ECID — EXISTING CABLE-IN-DUCT

GENERAL NOTES

1. ALL STATIONING IS REFERENCED FROM THE TOWER AVENUE REFERENCE LINE, UNLESS SPECIFICALLY NOTED OTHERWISE.
2. CABLE-IN-DUCT SHALL NOT BE PLACED WITHIN TWO (2) FEET OF THE CURB OR WITHIN ONE (1) FOOT OF THE R/W LINE.
3. CABLE-IN-DUCT SHALL BE PLACED IN THE GRASS AREA BETWEEN THE SIDEWALK AND THE R/W LINE, ONE (1) FOOT BEHIND SIDEWALK, UNLESS NOTED OTHERWISE.
4. CONDUIT SHALL BE PLACED WITHIN ONE (1) FOOT BEHIND CURB, UNDER SIDEWALK.
5. PROVIDE 2" NONMETALLIC SLEEVES UNDER ALL DRIVEWAYS AND ALLEYS. ROUTE CABLE-IN-DUCT THROUGH SLEEVES. SLEEVES SHALL EXTEND 2-FEET BEYOND EITHER SIDE OF DRIVEWAY.
6. REFER TO ALL OTHER SHEETS OF THE PLANS FOR UTILITY LOCATIONS, RAILROAD SIGNALS AND CONTROLLERS.
7. INDICATED DIMENSIONS ARE NOMINAL, MINOR VARIATIONS BEING PERMITTED.

ABBREVIATIONS

℄	CENTERLINE		
CID	CABLE-IN-DUCT	P.L.	PROPERTY LINE
CONC.	CONCRETE	R	RADIUS
DB	DIRECT BURIAL	℞	REFERENCE LINE
E	ELECTRIC	RT.	RIGHT
E.B.	EAST BOUND	R/W	RIGHT OF WAY
EC	EXISTING CONDUIT	S.B.	SOUTH BOUND
ECID	EXISTING CABLE-IN-DUCT	S.E.	SOUTHEAST
FDN.	FOUNDATION	SEC.	SECTION
LT.	LEFT	STA.	STATION
MAX	MAXIMUM	S.T.H.	STATE TRUNK HIGWAY
MIN	MINIMUM	S.W.	SOUTHWEST
N.B.	NORTH BOUND	U.S.H.	UNITED STATES HIGWAY
NC	NEW CONDUIT	VAR	VARIABLE
N.E.	NORTHEAST		
NO	NUMBER		
N.W.	NORTHWEST		



LIGHTING UNIT POLE WIRING
120/240 VOLT, 3 WIRE

DATE: NOVEMBER 1, 1995
REVISED:
HVP JOB #92207
SEH JOB #
HVP DRAWING #5
SEH DRAWING #
SCALE: 1/8"=1'-0"

STATE PROJECT NUMBER	SHEET NO.
8010-07-73	2.100

LIGHTING PLAN
TOWER AVENUE & FRONTAGE ROADS
S.T.H. 35 DOUGLAS COUNTY

* PAID FOR AS NONMETALLIC CONDUIT, 2-INCH. (ROUTE CABLE-IN-DUCT THRU SLEEVE).

J-8
STA 627+68.4, 67.0' LT.
III-150-30-8

J-9
STA 628+33.5, 67.0' LT.
III-150-30-8

J-10
STA 628+85, 48.5' LT.
III-250-38.5-12

J-7
STA 626+45, 48.5' LT.
III-250+38.5-8

29TH STREET

K-3
STA 631+23, 48.5' LT.
III-250-38.5-15

TOWER AVENUE

N 01°49'33" E

PB-118
STA 631+10, 46.0' RT.

J-16
STA 627+65, 46.0' RT.
III-250+38.5-12

K-15
STA 630+05, 51.5' RT.
III-250-38.5-15

29TH ST.

TOWER 66

NOTE:
ALL STATIONING REFERENCED FROM TOWER AVENUE REFERENCE LINE UNLESS SPECIFICALLY NOTED OTHERWISE.

K-2
STA 633+70, 49.0' LT.
III-200-38.5-15

K-1
STA 634+85, 46.0' LT.
III-200-XX-8

PB-115
STA 635+00, 48.8' LT.

K-4
STA 279+38 "28TH ST.", 40.0' LT.
III-250-38.5-15

PB-116
STA 635+87, 57.0' LT.

K-5
STA 636+02, 47.0' LT.
III-200-XX-8

K-6
STA 636+90, 48.5' LT.
III-200-38.5-8

PB-114
STA 635+00, 53.7' RT.

PB-119
STA 635+78, 45.3' RT.

K-14
STA 632+41, 46.0' RT.
III-250-38.5-12

K-13
STA 633+82, 53.0' RT.
III-200-38.5-8

K-12
STA 634+81, 46.0' RT.
III-200-XX-8

K-11
STA 280+65 "28TH ST.", 39.0' RT.
III-250-38.5-15

K-16
STA 635+97, 43.0' RT.
III-200-XX-12

K-17
STA 636+99, 46.0' RT.
III-200-38.5-12

LIGHTING CONTROL CABINET No.11
STA 635+06, 85.0' RT.

STA 626+00 · STA 632+00 · STA 638+00

MATCH LINE

SCALE: 1"=20'-0"

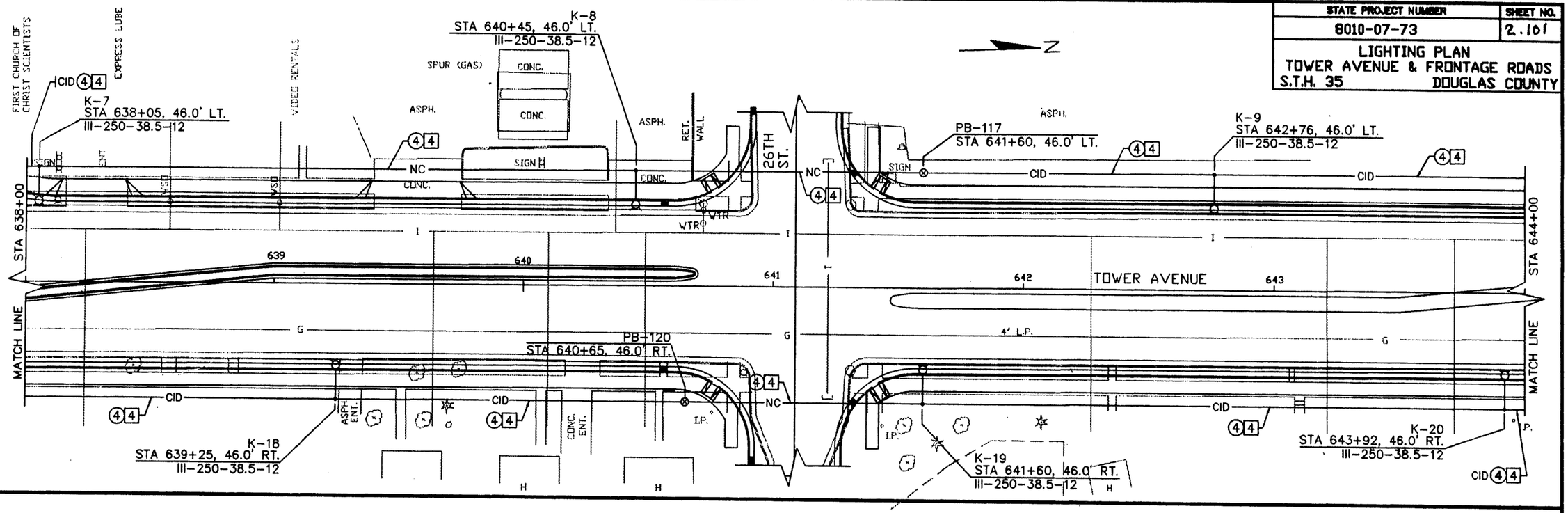
HVP DRAWING #R24
SEH DRAWING #

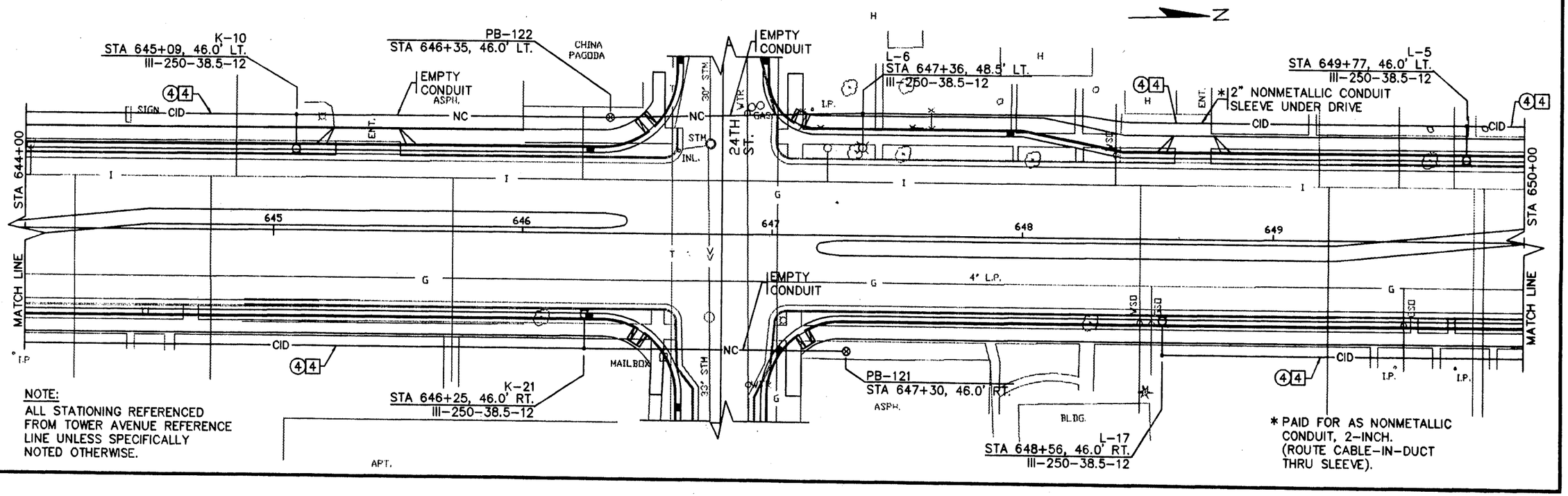
HVP JOB #92207
SEH JOB #23202

DATE: NOVEMBER 1, 1995
REVISED:

STATE PROJECT NUMBER	SHEET NO.
8010-07-73	2.101

LIGHTING PLAN
TOWER AVENUE & FRONTAGE ROADS
S.T.H. 35 DOUGLAS COUNTY





NOTE:
ALL STATIONING REFERENCED FROM TOWER AVENUE REFERENCE LINE UNLESS SPECIFICALLY NOTED OTHERWISE.

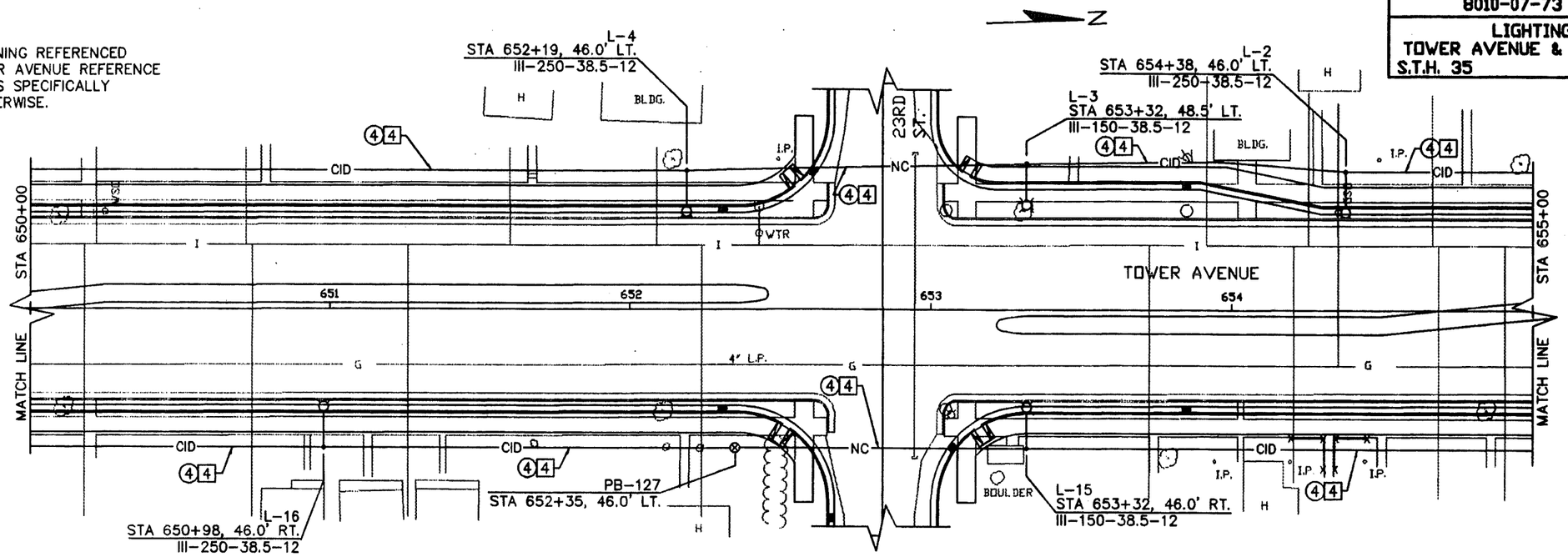
* PAID FOR AS NONMETALLIC CONDUIT, 2-INCH. (ROUTE CABLE-IN-DUCT THRU SLEEVE).

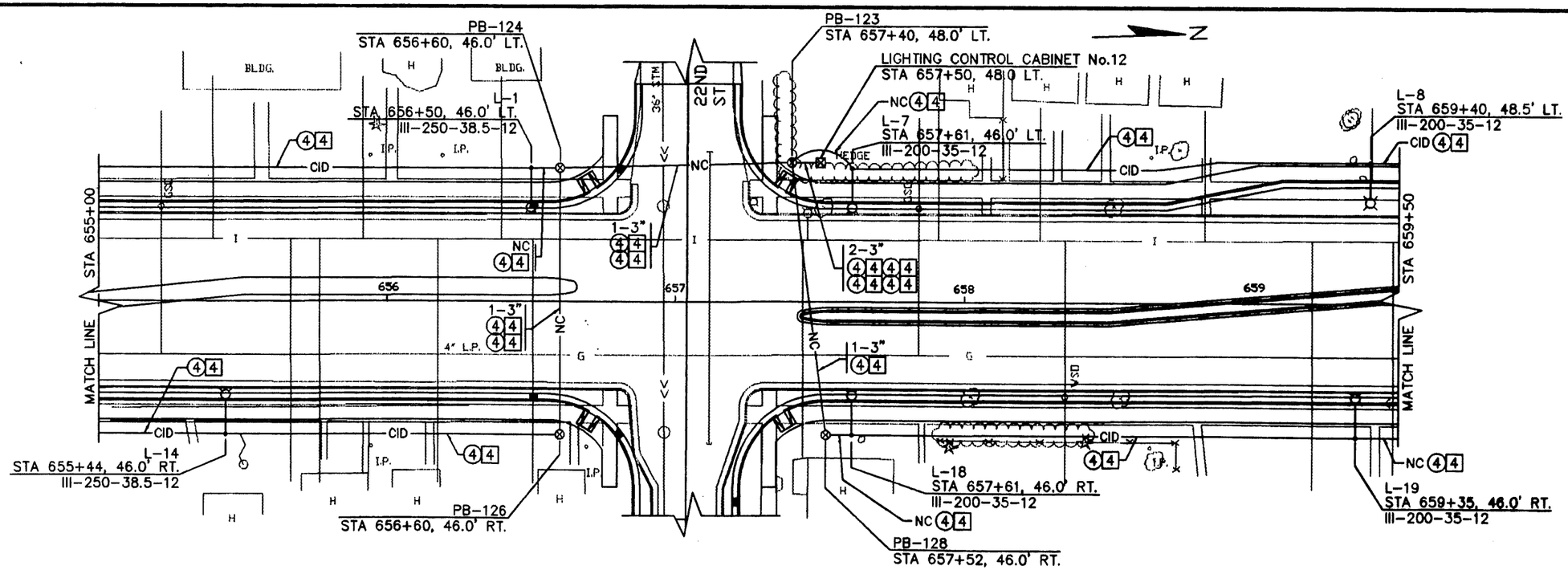
SCALE: 1"=20'-0"
HVP DRAWING #R25
SEH DRAWING #
HVP JOB #92207
SEH JOB #23202
DATE: NOVEMBER 1, 1995
REVISED:

STATE PROJECT NUMBER	SHEET NO.
8010-07-73	2.102

LIGHTING PLAN
TOWER AVENUE & FRONTAGE ROADS
S.T.H. 35 DOUGLAS COUNTY

NOTE:
ALL STATIONING REFERENCED FROM TOWER AVENUE REFERENCE LINE UNLESS SPECIFICALLY NOTED OTHERWISE.



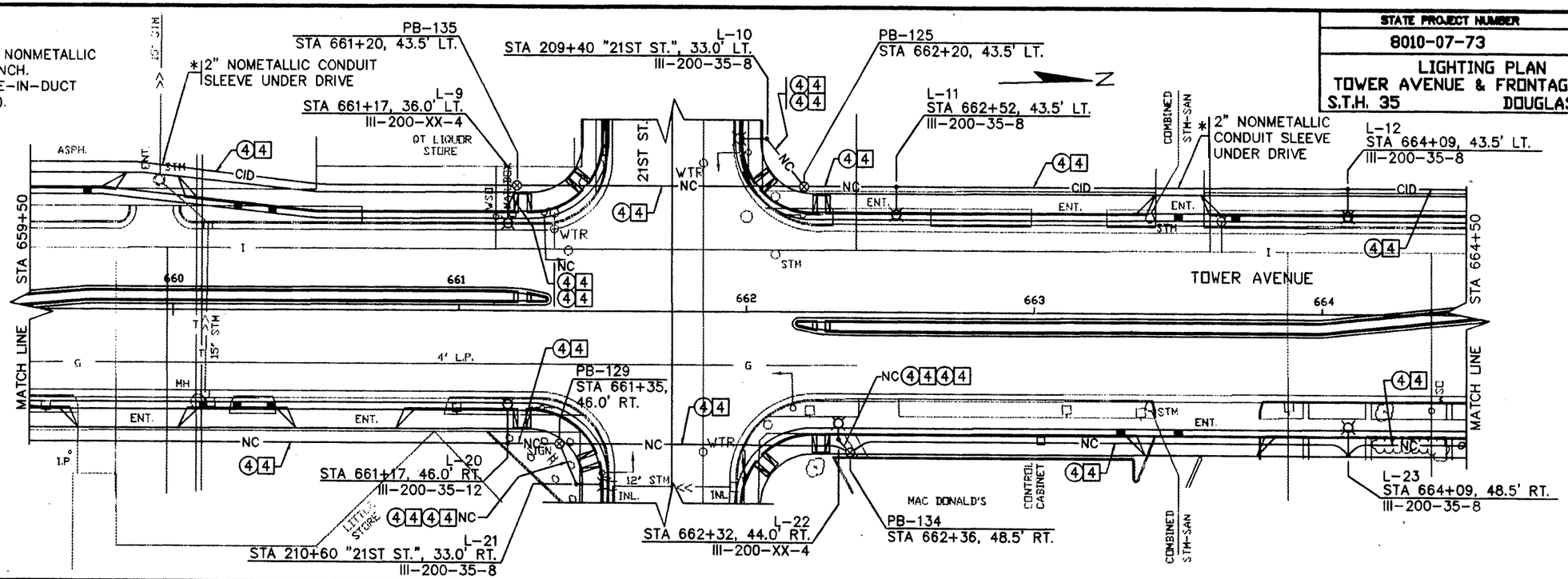


DATE: NOVEMBER 1, 1995
REVISED:
HVP JOB #22207 HVP DRAWING #K26
SEH JOB #23302 SEH DRAWING #
SCALE: 1"=20'-0"

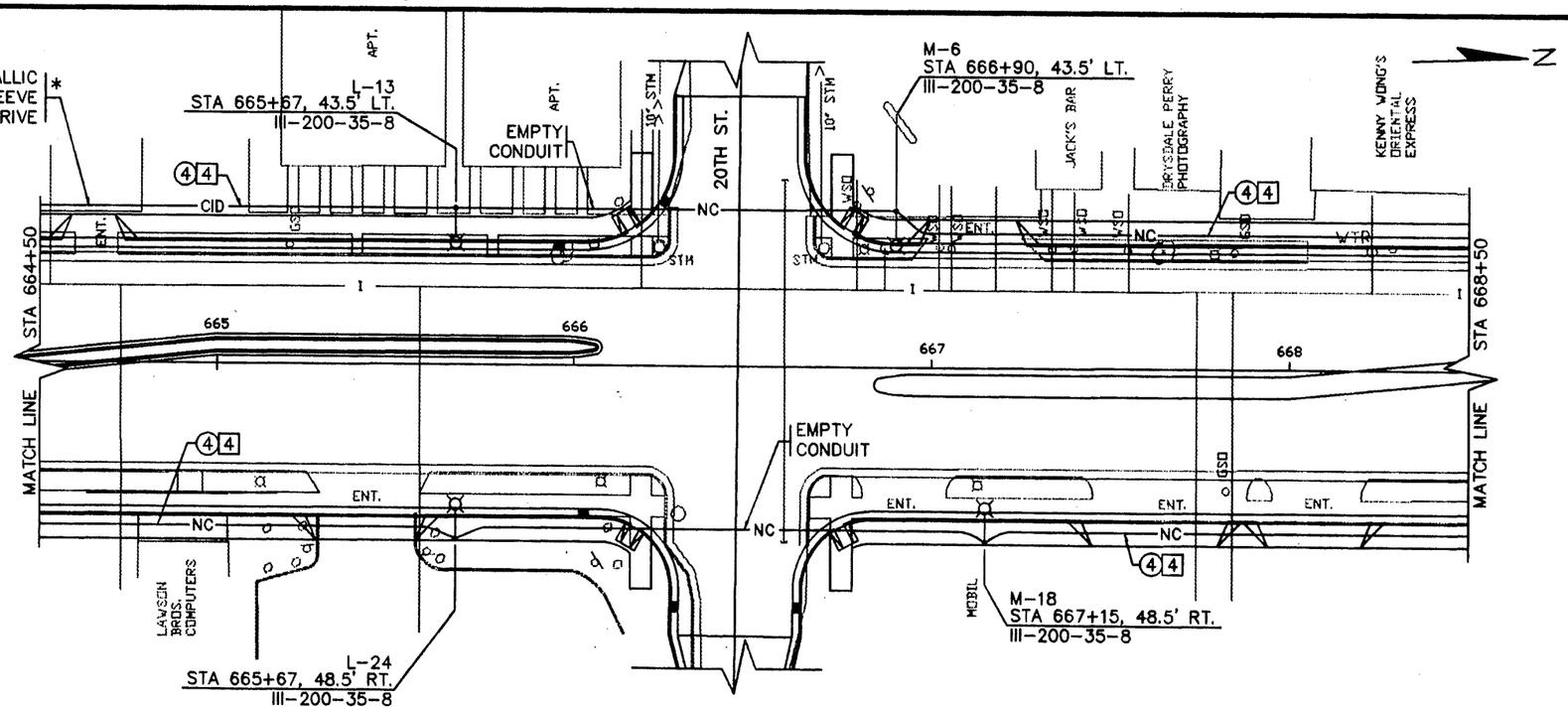
STATE PROJECT NUMBER	SHEET NO.
8010-07-73	2.103

LIGHTING PLAN
TOWER AVENUE & FRONTAGE ROADS
S.T.H. 35 DOUGLAS COUNTY

* PAID FOR AS NONMETALLIC CONDUIT, 2-INCH. (ROUTE CABLE-IN-DUCT THRU SLEEVE).



NOTE:
ALL STATIONING REFERENCED FROM TOWER AVENUE REFERENCE LINE UNLESS SPECIFICALLY NOTED OTHERWISE.

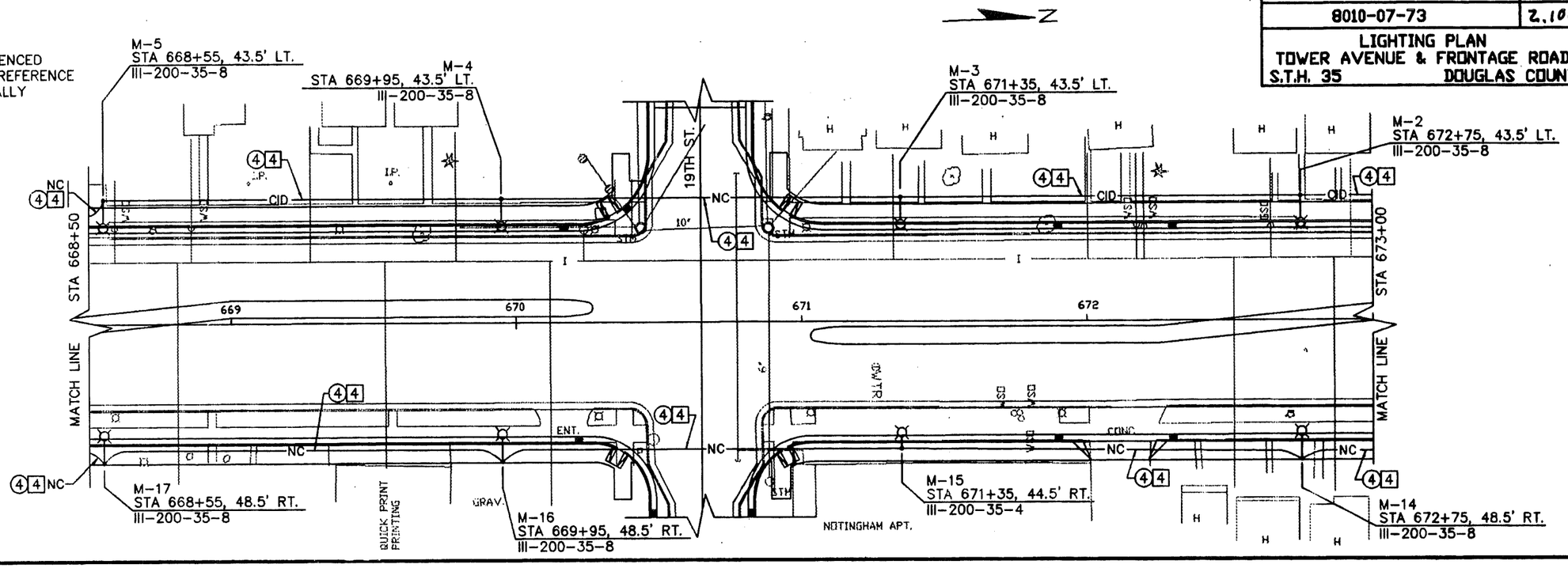


DATE: NOVEMBER 1, 1995
REVISED:
HVP JOB #2207 SEH JOB #23202
HVP DRAWING #27 SEH DRAWING #
SCALE 1"=20'-0"

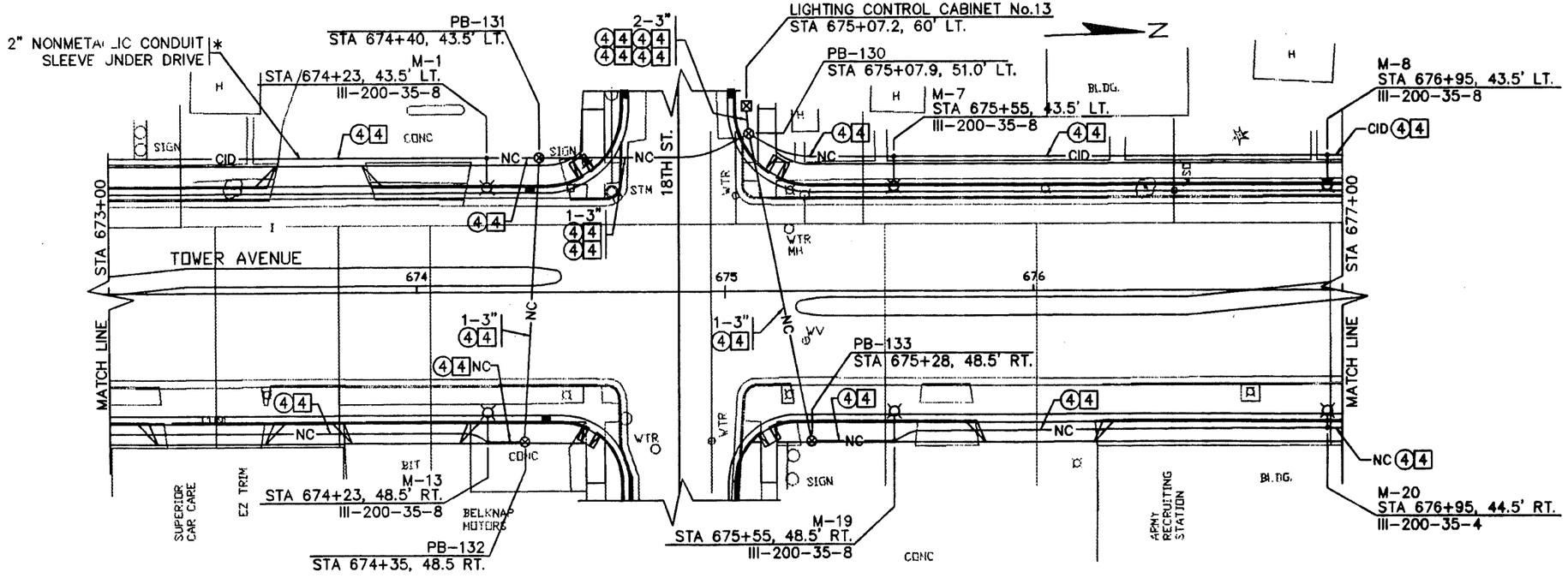
STATE PROJECT NUMBER	SHEET NO.
8010-07-73	2.104

LIGHTING PLAN
TOWER AVENUE & FRONTAGE ROADS
S.T.H. 35 DOUGLAS COUNTY

NOTE:
ALL STATIONING REFERENCED FROM TOWER AVENUE REFERENCE LINE UNLESS SPECIFICALLY NOTED OTHERWISE.



* PAID FOR AS NONMETALLIC CONDUIT, 2-INCH. (ROUTE CABLE-IN-DUCT THRU SLEEVE).

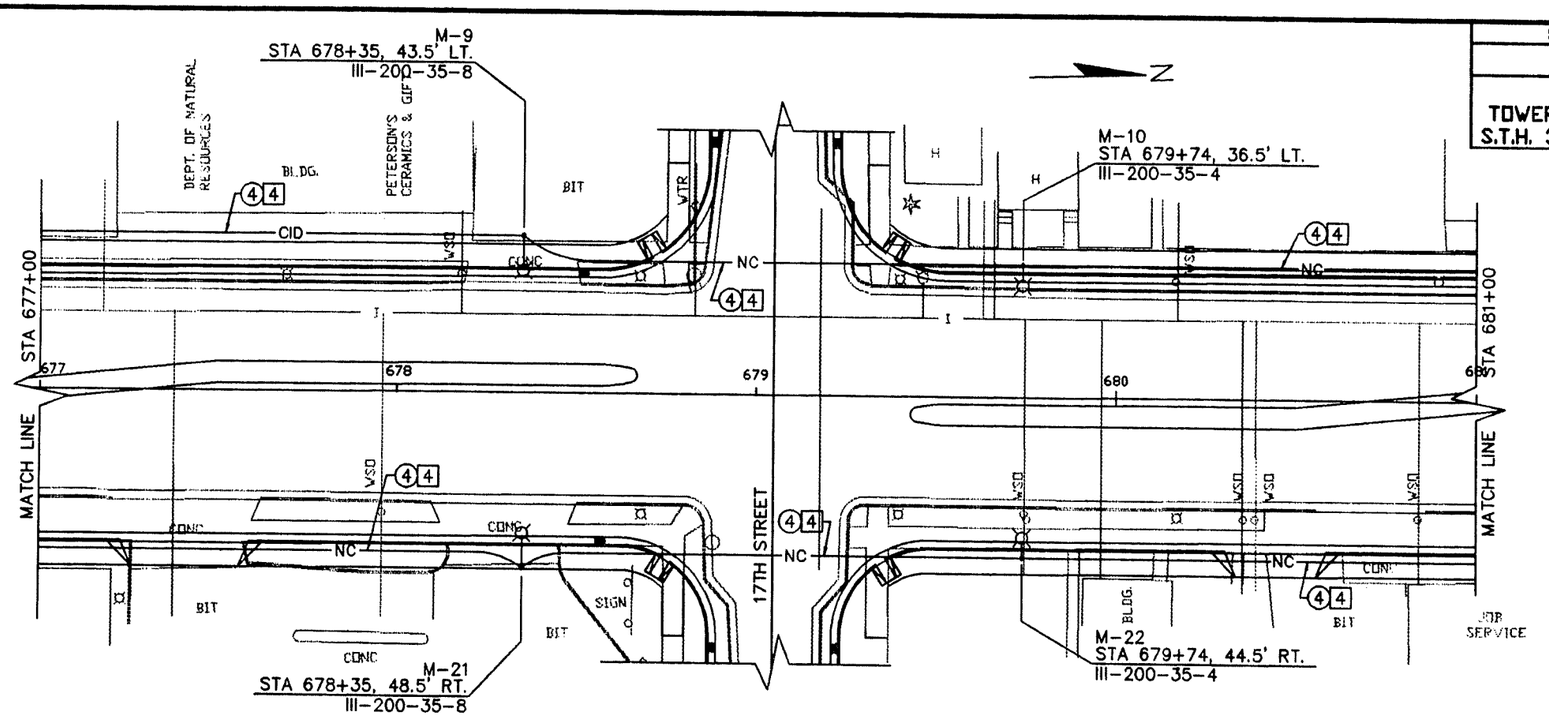


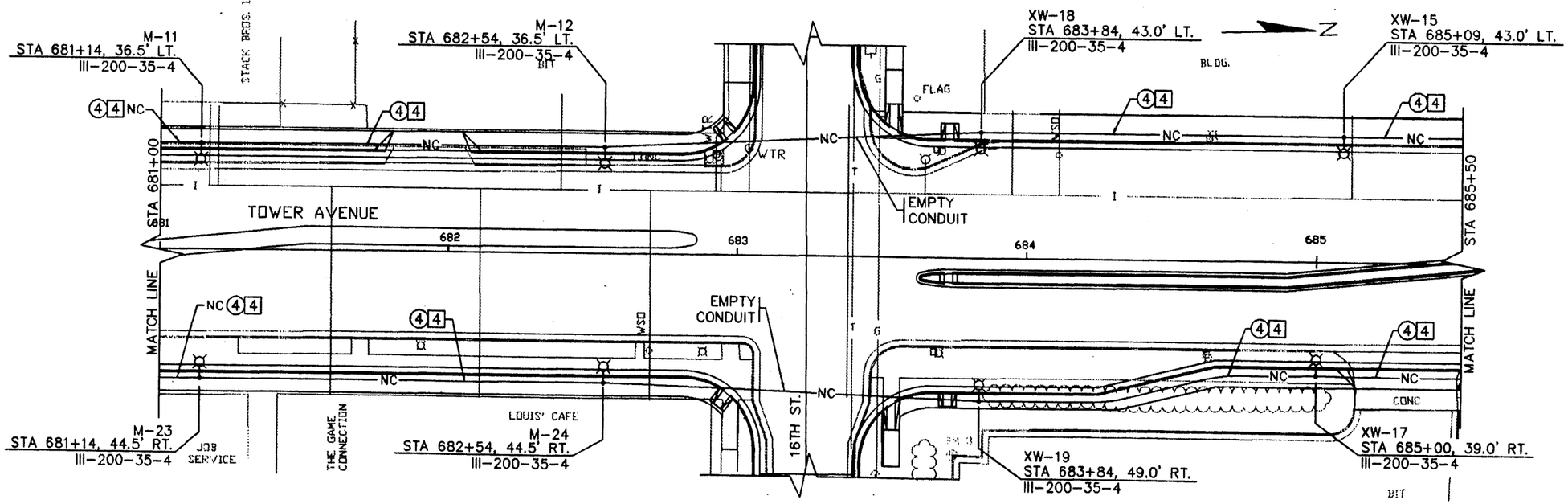
SCALE: 1"=20'-0"
HVP DRAWING #28
SEH DRAWING #
HVP JOB #2207
SEH JOB #23202
DATE: NOVEMBER 1, 1995
REVISED:

STATE PROJECT NUMBER	SHEET NO.
8010-07-73	2.105

LIGHTING PLAN
TOWER AVENUE & FRONTAGE ROADS
S.T.H. 35 DOUGLAS COUNTY

NOTE:
ALL STATIONING REFERENCED FROM TOWER AVENUE REFERENCE LINE UNLESS SPECIFICALLY NOTED OTHERWISE.

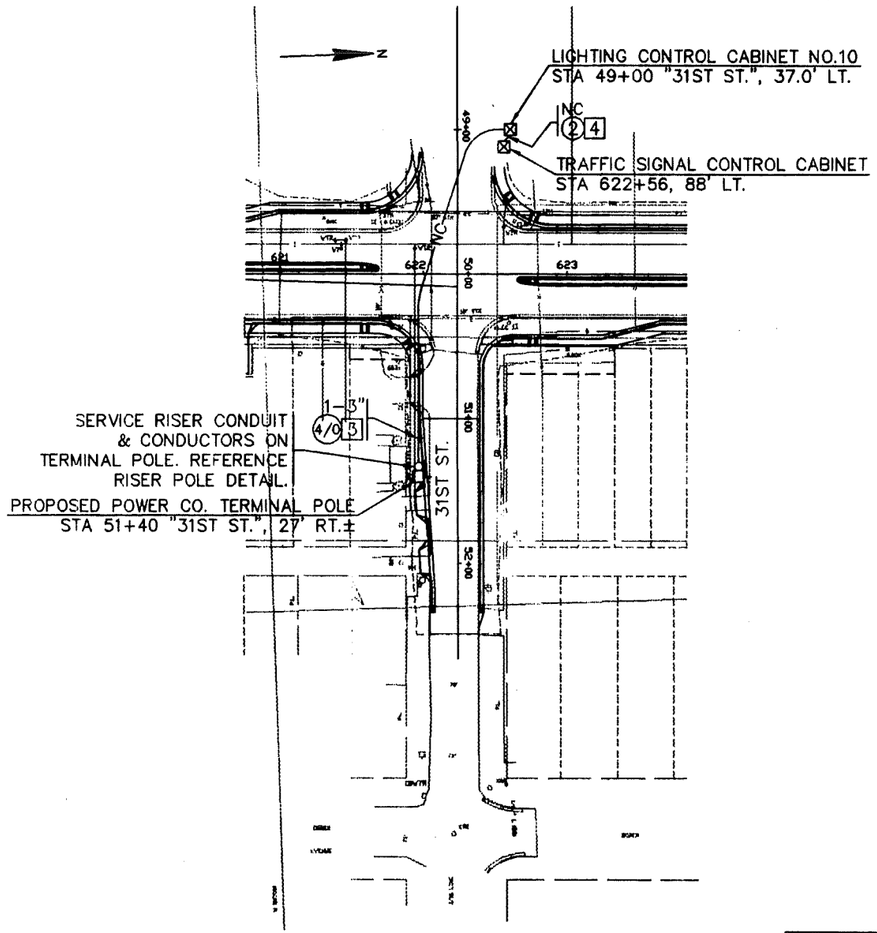




DATE: NOVEMBER 1, 1995
REVISED:
HVP JOB #92207
SEH JOB #23202
HVP DRAWING #F29
SEH DRAWING #
SCALE: 1"=20'-0"

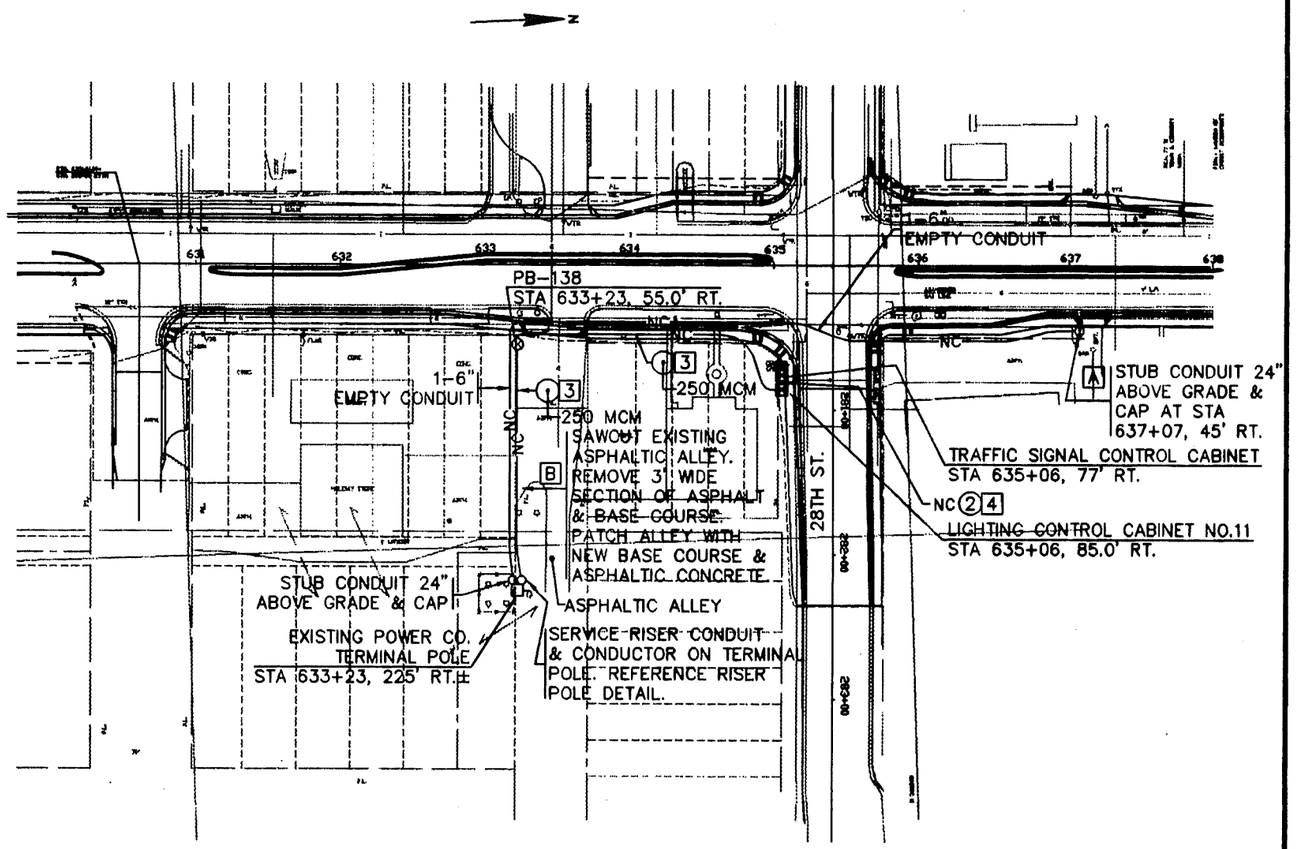
STATE PROJECT NUMBER	SHEET NO.
8010-07-73	2.108

LIGHTING SERVICE PLAN
TOWER AVENUE, CITY OF SUPERIOR
S.T.H. 35 DOUGLAS COUNTY



ELECTRICAL SERVICE PLAN
LIGHTING CONTROL CABINET NO.10
& TRAFFIC SIGNAL CONTROL CABINET

NOTE:
COORDINATE LOCATION OF PULL BOXES & SERVICE CONDUIT WITH LIGHTING CONDUIT. REFERENCE LIGHTING PLANS.



ELECTRICAL SERVICE PLAN
LIGHTING CONTROL CABINET NO.11
& TRAFFIC SIGNAL CONTROL CABINET

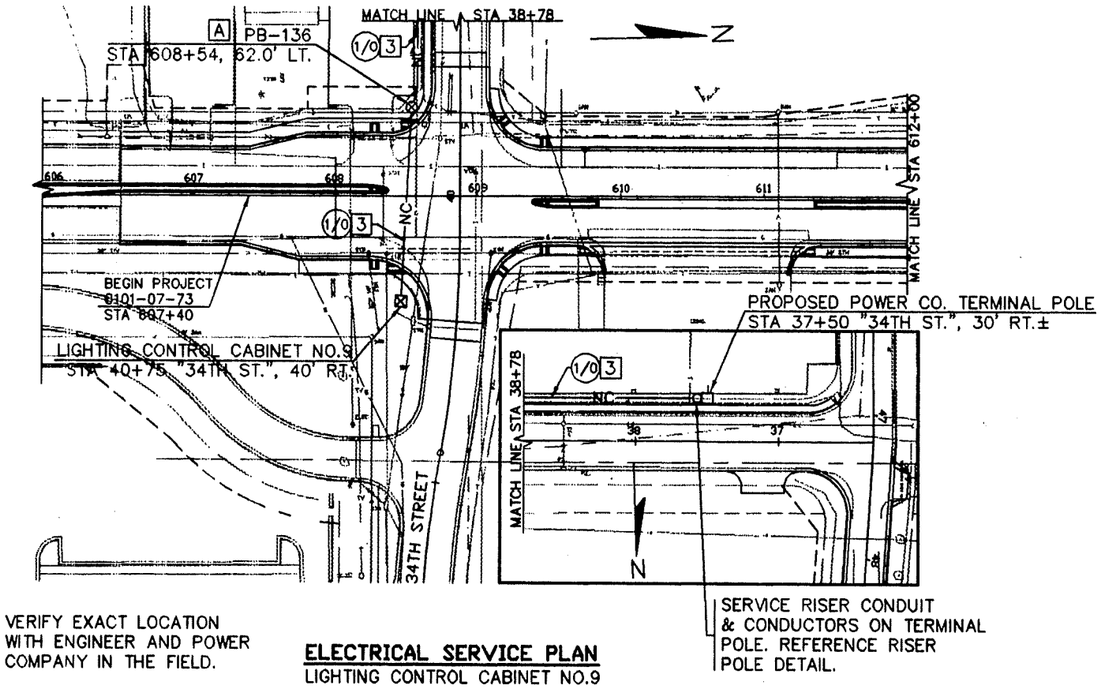
[A] VERIFY EXACT LOCATION WITH ENGINEER AND POWER COMPANY IN THE FIELD.

[B] REMOVAL & DISPOSAL OF BASE COURSE & ASPHALTIC MATERIAL SHALL BE CONSIDERED INCIDENTAL TO NONMETALLIC CONDUIT, 2-INCH.

DATE: NOVEMBER 1, 1985
REVISED:
HVP JOB #82207
SEH JOB #
HVP DRAWING #R17
SCALE: 1"=50'-0"

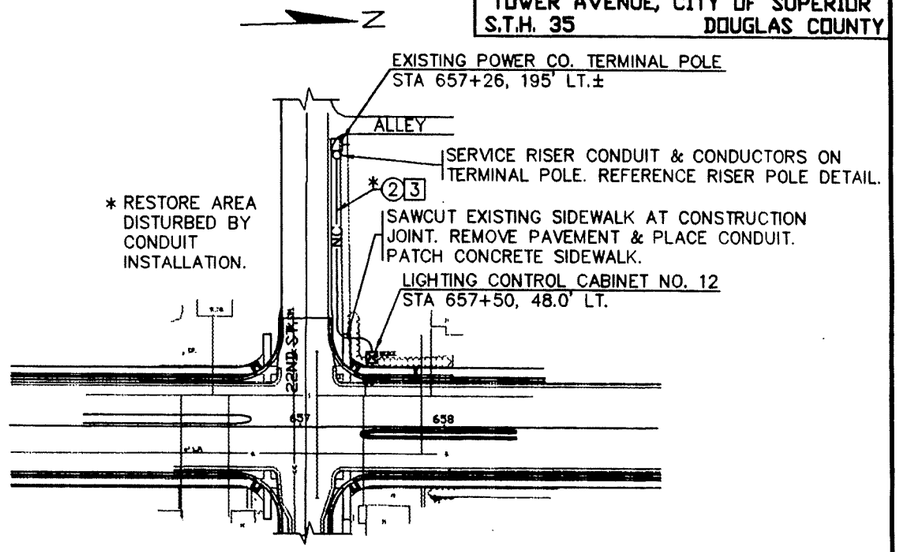
STATE PROJECT NUMBER	SHEET NO.
8010-07-73	2.109

LIGHTING SERVICE PLAN
TOWER AVENUE, CITY OF SUPERIOR
S.T.H. 35 DOUGLAS COUNTY

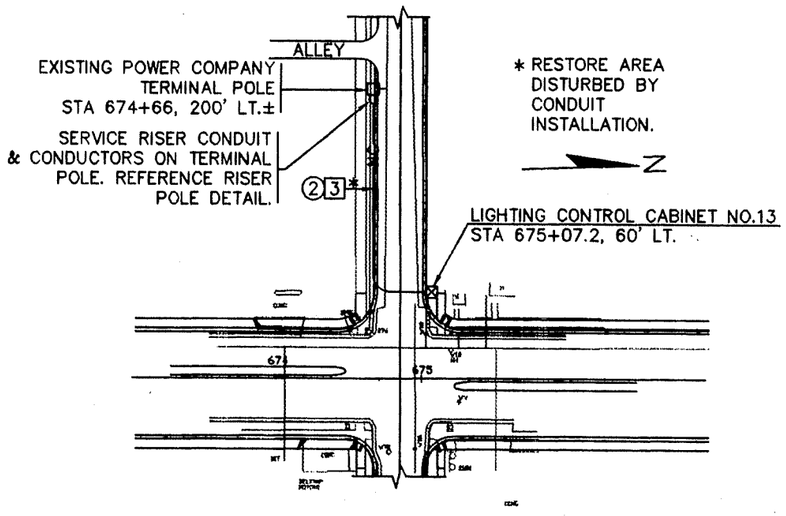


A VERIFY EXACT LOCATION WITH ENGINEER AND POWER COMPANY IN THE FIELD.

ELECTRICAL SERVICE PLAN
LIGHTING CONTROL CABINET NO.9

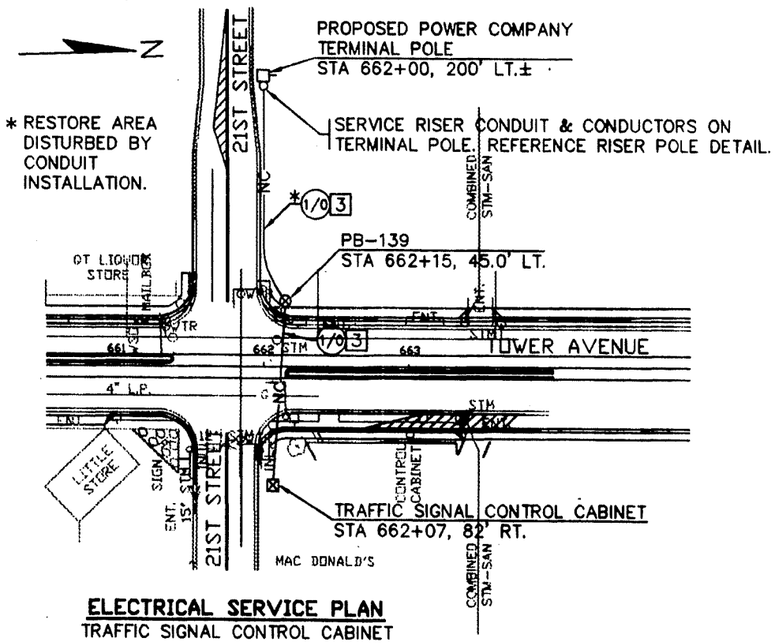


ELECTRICAL SERVICE PLAN
LIGHTING CONTROL CABINET NO.12



ELECTRICAL SERVICE PLAN
LIGHTING CONTROL CABINET NO.13

NOTE:
COORDINATE LOCATION OF PULL BOXES & SERVICE CONDUIT WITH LIGHTING CONDUIT. REFERENCE LIGHTING PLANS.



ELECTRICAL SERVICE PLAN
TRAFFIC SIGNAL CONTROL CABINET

DATE: NOVEMBER 1, 1995
REVISED:
HVP JOB #97207
SEH JOB #
HVP DRAWING #18
SCALE: 1"=50'-0"

NOTES:

1) EXACT LOCATION OF POLE BASES, PULLBOXES, LOOP DETECTORS AND CONTROL CABINET BASE SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
2) ALL VEHICLE SIGNAL FACES SHALL HAVE BACKPLATES.
3) ALL VEHICLE SIGNAL FACES SHALL BE 12" (SEE SIGNAL HEAD CONFIGURATIONS CHART FOR FURTHER DETAILS.)
4) ALL PEDESTRIAN SIGNAL FACES SHALL BE 12"x12" (SEE SIGNAL HEAD CONFIGURATIONS CHART FOR FURTHER DETAILS.)
5) ALL TRAFFIC SIGNAL TROMBONE MAST ARMS SHALL BE 20' OR 25' AS NOTED.
6) ALL CONDUIT FROM TRAFFIC SIGNAL POLE BASES TO ADJOINING PULLBOXES SHALL BE 2"PVC.
7) SEE SPECIAL PROVISIONS AND DETAILS FOR INFORMATION REGARDING OVERHEAD STREET NAME SIGNS TO BE FURNISHED AND INSTALLED BY CONTRACTOR.
8) LUMINAIRES AND LUMINAIRE MAST ARMS TO BE FURNISHED AND INSTALLED AS PART OF STREET LIGHTING PORTION OF THE PROJECT.
9) SEE SPECIAL PROVISIONS AND QUANTITIES REGARDING REMOVAL AND SALVAGING OF INPLACE SIGNAL SYSTEM.
10) SEE LIGHTING PLANS AND SPECIAL PROVISIONS REGARDING ELECTRICAL SERVICE PROVISIONS FOR SIGNAL SYSTEM.

STATE PROJECT NUMBER	SHEET NO.
8010-07-73	2.112

TRAFFIC SIGNAL PLAN
TOWER AVENUE AND 28TH STREET
S.T.H.35 DOUGLAS CO.

LEGEND OF SYMBOLS

- PROPOSED POLYVINYL CHLORIDE (PVC) CONDUIT (SIZE AS NOTED)
- SIGNAL HEAD–LUMINAIRE POLE MOUNTED (TYPE 2 SPECIAL BASE)
- SIGNAL HEAD–PEDESTAL POLE MOUNTED (TYPE 1 SPECIAL BASE)
- SIGNAL HEAD–MAST ARM MOUNTED (TYPE 2 SPECIAL BASE)
- PB — 24"PULL BOX
- CONTROLLER CABINET BASE (TYPE 9)
- NT NT — LOOP DETECTOR (SIZE AND TURNS OF WIRE AS NOTED) (IN 1"P.V.C.)
- PEDESTRIAN PUSH BUTTON AND R10-4c SIGN (SEE DETAIL)
- LUMINAIRE IN COMBINATION WITH SIGNAL POLE
- 3 — SIGNAL HEAD NUMBER
- T-2, T-3, T-4 — POLE TYPE

SIGNAL HEAD CONFIGURATIONS

SIGNAL HEAD NUMBER		SIGNAL HEAD NUMBER	
1,6,11,13,14,16 (3–12"VERTICAL)	R Y G	2,7,12,15 (3–12" HORIZONTAL)	R Y G
3,4,5,8,9,10 (5–12"VERTICAL)	R Y G Y G	17,18,19,20, 21,22,23,24 (12"PEDESTRIAN SIGNAL)	DW W

ELECTRICAL SERVICE (LIGHTING/SIGNALS)–TO BE F & I AS PART OF STREET LIGHTING PORTION OF PROJECT.

FILE NAME: HDGN: 23202ts7

WISDOT/CADDS SHEET 42

STATE PROJECT NUMBER	SHEET NO.
8010-07-73	2.113

TRAFFIC SIGNAL PLAN CHARTS
TOWER AVENUE AND 28TH STREET
S.T.H.35 DOUGLAS CO.

SEQUENCE OF OPERATION

	HEAD NUMBER	Ø1			Ø2			NOT USED Ø3			Ø4			Ø5			Ø6			NOT USED Ø7			Ø8			FLASH
		R/W	CLEAR TO		R/W	CLEAR TO		R/W	CLEAR TO		R/W	CLEAR TO		R/W	CLEAR TO		R/W	CLEAR TO		R/W	CLEAR TO		R/W	CLEAR TO		
Ø1	3,4,5	G	Y	•	R	R	R				R	R	R	R	R	R	R	R	R				R	R	R	–
Ø2	6,7,8,9,10	R	R	R	G	Y	R				R	R	R	R	R	R	R	R	R				R	R	R	Y
Ø3	– – –	–	–	–	–	–	–				–	–	–	–	–	–	–	–	–				–	–	–	–
Ø4	11,12,13	R	R	R	R	R	R				G	Y	R	R	R	R	R	R	R				R	R	R	R
Ø5	8,9,10	R	R	R	R	R	R				R	R	R	G	Y	•	R	R	R				R	R	R	–
Ø6	1,2,3,4,5	R	R	R	R	R	R				R	R	R	R	R	R	G	Y	R				R	R	R	Y
Ø7	– – –	–	–	–	–	–	–				–	–	–	–	–	–	–	–	–				–	–	–	–
Ø8	14,15,16	R	R	R	R	R	R				R	R	R	R	R	R	R	R	R				G	Y	R	R
Ø2 PED	21,22	DW	DW	DW	••	DW	DW				DW	DW	DW	DW	DW	DW	DW	DW	DW				DW	DW	DW	
Ø4 PED	19,20	DW	DW	DW	DW	DW	DW				••	DW	DW	DW	DW	DW	DW	DW	DW				DW	DW	DW	
Ø6 PED	17,18	DW	DW	DW	DW	DW	DW				DW	DW	DW	DW	DW	DW	••	DW	DW				DW	DW	DW	
Ø8 PED	23,24	DW	DW	DW	DW	DW	DW				DW	DW	DW	DW	DW	DW	DW	DW	DW				••	DW	DW	

•• = WHEN CALLED, TIMES STEADY WALK, THEN FLASHING DON'T WALK, THEN STEADY DON'T WALK.
• = RED INDICATION IS ASSOCIATED WITH CORRESPONDING THROUGH PHASE.

DETECTOR LOGIC

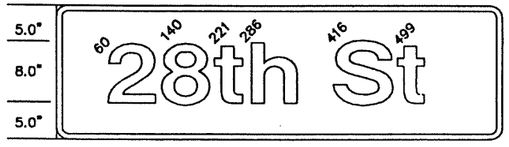
DETECTOR NUMBER	SIZE (FT.)	DISTANCE FROM STOP BAR	AMPLIFIER CHANNEL	DETECTOR OPERATION			PHASE CALLED	PHASE EXTENDED	CALLING DELAY	DETECTOR DISCONNECT	EXTENSION STRETCH	MOTOR CYCLE SENSITIVITY
				CALLS & EXTENDS	CALLS ONLY	EXTENDS ONLY						
Ø11	4–6x6	5',20',35'	1	X			Ø1	Ø1				
Ø21	2–6x6	205'	2	X			Ø2	Ø2			X	
Ø41	2–6x6	120'	3			X	–	Ø4				
Ø42	2–6x6	5'	4	X			Ø4	Ø4	X			
Ø43	2–6x6	5'	5	X			Ø4	Ø4				
Ø51	4–6x6	5',20',35'	6	X			Ø5	Ø5				
Ø61	2–6x6	205'	7	X			Ø6	Ø6			X	
Ø81	2–6x6	120'	8			X	–	Ø8				
Ø82	2–6x6	5'	9	X			Ø8	Ø8	X			
Ø83	2–6x6	5'	10	X			Ø8	Ø8				

CHART 1

PHASE ON	NON-CONFLICTING PHASE ALLOWED TO TIME CONCURRENTLY	PHASES IN CONFLICT WITH PHASE ON
Ø1	5or6	2–4–8
Ø2	5or6	1–4–8
Ø3	–	–
Ø4	8	1–2–5–6
Ø5	1or2	4–6–8
Ø6	1or2	4–5–8
Ø7	–	–
Ø8	4	1–2–5–6

TYPE 2 (STREET NAME) SIGN LAYOUTS

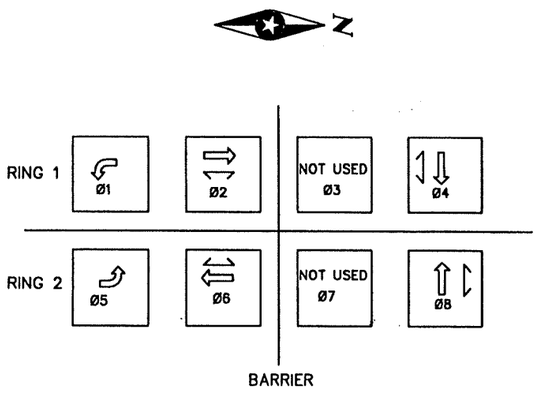
78" x 18" , 3"R. 1.0"B
LINE 1 65.6: 8"-6"E MOD.



60" x 18" , 3"R. 1.0"B.
LINE 1 47.9: 8"-6"E MOD.

SIGN NOTES:

1) COLOR – WHITE ON GREEN BACKGROUND.
2) TYPE "H" REFLECTIVE SHEETING ON ALUMINUM SHEETING SHALL BE USED.
3) SIGNS TO BE FURNISHED AND INSTALLED ON TRAFFIC SIGNAL MAST ARMS AT 5' FROM RIGHT END OF MAST ARM.



NOTES:

1) ANY ACTUATED PHASE FOR WHICH THERE IS NO CALL SHALL BE SKIPPED.
2) WHEN ONE PHASE IS ON ALONE, ANY NON-CONFLICTING PHASE MAY START TIMING CONCURRENTLY, WITHOUT A CLEARANCE INTERVAL (SEE CHART 1 AT LEFT).
3) IF ANY OPPOSING THROUGH PHASES ARE TIMING CONCURRENTLY, THEY SHALL TERMINATE TOGETHER DUE TO PERMISSIVE LEFT TURN CONFLICT.

OVERLAPS
O.L. "A" = NONE
O.L. "B" = NONE
O.L. "C" = NONE
O.L. "D" = NONE

CONTROLLER LOGIC			
PHASE NUMBER	PHASE LOCKING	PHASE RECALL	DUAL ENTRY
Ø1	N	N	N
Ø2	Y	MIN.	N
Ø3	N	N	N
Ø4	N	N	Ø8
Ø5	N	N	N
Ø6	Y	MIN.	N
Ø7	N	N	N
Ø8	N	N	Ø4

PEDESTRIAN PUSH BUTTON SIGN

9"x12"

BLACK LEGEND, BORDER, AND ARROW ON WHITE NON-REFLECTORIZED BACKGROUND

SIGN NO.R10-4c (R, L or DH)

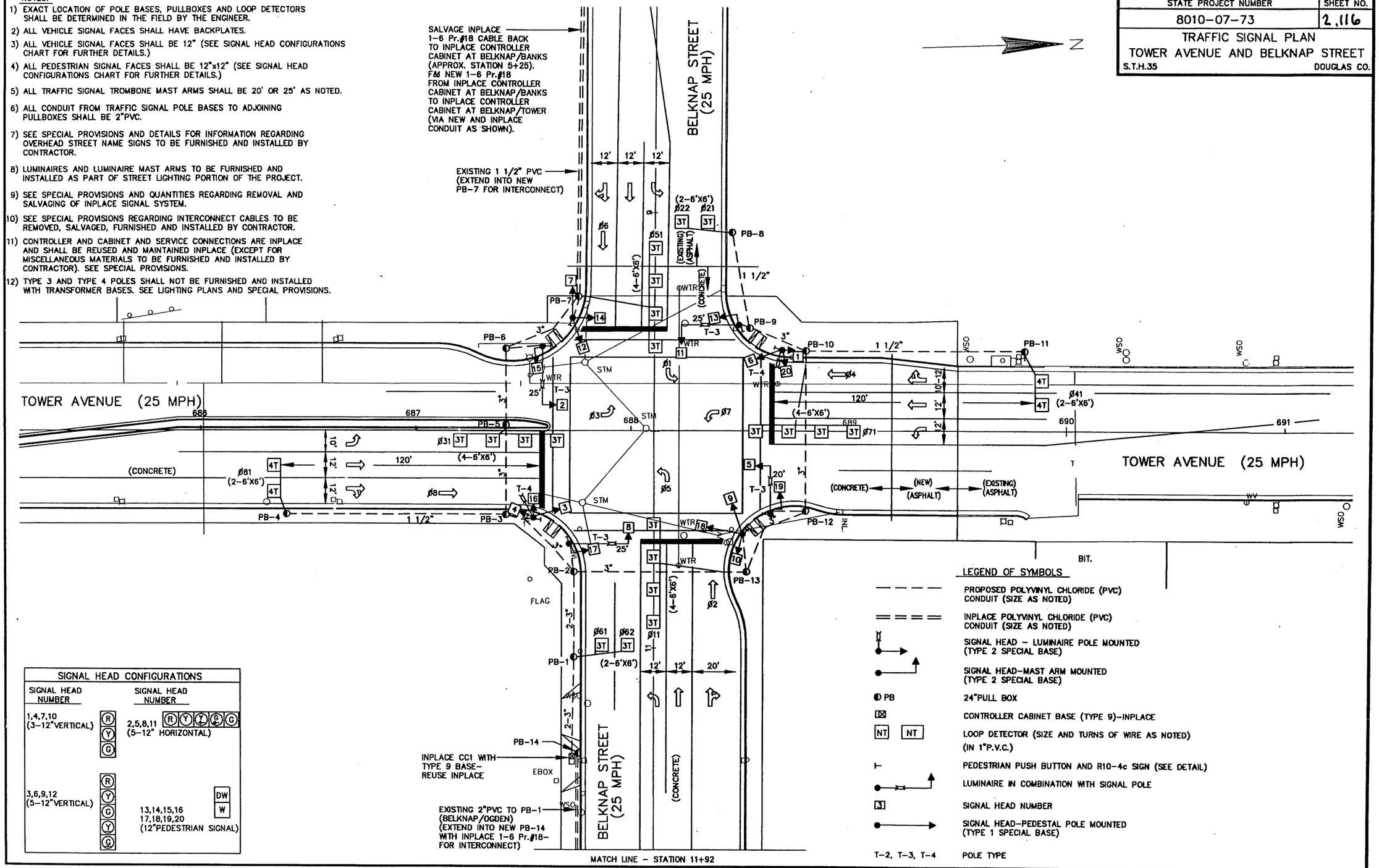
S:\TRANS\TOWER\CHARTS 1-2-11-96 2:33 pm

STATE PROJECT NUMBER	SHEET NO.
8010-07-73	2.116

TRAFFIC SIGNAL PLAN
TOWER AVENUE AND BELKNAP STREET
S.T.H.35 DOUGLAS CO.

NOTES:

1) EXACT LOCATION OF POLE BASES, PULLBOXES AND LOOP DETECTORS SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
2) ALL VEHICLE SIGNAL FACES SHALL HAVE BACKPLATES.
3) ALL VEHICLE SIGNAL FACES SHALL BE 12" (SEE SIGNAL HEAD CONFIGURATIONS CHART FOR FURTHER DETAILS.)
4) ALL PEDESTRIAN SIGNAL FACES SHALL BE 12"x12" (SEE SIGNAL HEAD CONFIGURATIONS CHART FOR FURTHER DETAILS.)
5) ALL TRAFFIC SIGNAL TROMBONE MAST ARMS SHALL BE 20' OR 25' AS NOTED.
6) ALL CONDUIT FROM TRAFFIC SIGNAL POLE BASES TO ADJOINING PULLBOXES SHALL BE 2"PVC.
7) SEE SPECIAL PROVISIONS AND DETAILS FOR INFORMATION REGARDING OVERHEAD STREET NAME SIGNS TO BE FURNISHED AND INSTALLED BY CONTRACTOR.
8) LUMINAIRES AND LUMINAIRE MAST ARMS TO BE FURNISHED AND INSTALLED AS PART OF STREET LIGHTING PORTION OF THE PROJECT.
9) SEE SPECIAL PROVISIONS AND QUANTITIES REGARDING REMOVAL AND SALVAGING OF INPLACE SIGNAL SYSTEM.
10) SEE SPECIAL PROVISIONS REGARDING INTERCONNECT CABLES TO BE REMOVED, SALVAGED, FURNISHED AND INSTALLED BY CONTRACTOR.
11) CONTROLLER AND CABINET AND SERVICE CONNECTIONS ARE INPLACE AND SHALL BE REUSED AND MAINTAINED INPLACE (EXCEPT FOR MISCELLANEOUS MATERIALS TO BE FURNISHED AND INSTALLED BY CONTRACTOR). SEE SPECIAL PROVISIONS.
12) TYPE 3 AND TYPE 4 POLES SHALL NOT BE FURNISHED AND INSTALLED WITH TRANSFORMER BASES. SEE LIGHTING PLANS AND SPECIAL PROVISIONS.



SIGNAL HEAD CONFIGURATIONS

SIGNAL HEAD NUMBER		SIGNAL HEAD NUMBER
1,4,7,10 (3-12"VERTICAL)	R Y G	2,5,8,11 (5-12" HORIZONTAL) R Y Y G G
3,6,9,12 (5-12"VERTICAL)	R Y G Y G	13,14,15,16 17,18,19,20 (12"PEDESTRIAN SIGNAL) DW W

LEGEND OF SYMBOLS

- PROPOSED POLYVINYL CHLORIDE (PVC) CONDUIT (SIZE AS NOTED)
- INPLACE POLYVINYL CHLORIDE (PVC) CONDUIT (SIZE AS NOTED)
- SIGNAL HEAD - LUMINAIRE POLE MOUNTED (TYPE 2 SPECIAL BASE)
- SIGNAL HEAD-MAST ARM MOUNTED (TYPE 2 SPECIAL BASE)
- PB 24"PULL BOX
- CONTROLLER CABINET BASE (TYPE 9)-INPLACE
- NT NT LOOP DETECTOR (SIZE AND TURNS OF WIRE AS NOTED) (IN 1"P.V.C.)
- PEDESTRIAN PUSH BUTTON AND R10-4c SIGN (SEE DETAIL)
- LUMINAIRE IN COMBINATION WITH SIGNAL POLE
- 3 SIGNAL HEAD NUMBER
- SIGNAL HEAD-PEDESTAL POLE MOUNTED (TYPE 1 SPECIAL BASE)
- T-2, T-3, T-4 POLE TYPE

FILE NAME: HDGN: 2320ts18

WISDOT/CADDS SHEET 42

STATE PROJECT NUMBER	SHEET NO.
8010-07-73	2.117
TRAFFIC SIGNAL PLAN CHARTS	
TOWER AVENUE AND BELKNAP STREET	
S.T.H.35	DOUGLAS CO.

SEQUENCE OF OPERATION

	HEAD NUMBER	Ø1 R/W	Ø1 CLEAR TO		Ø2 R/W	Ø2 CLEAR TO		Ø3 R/W	Ø3 CLEAR TO		Ø4 R/W	Ø4 CLEAR TO		Ø5 R/W	Ø5 CLEAR TO		Ø6 R/W	Ø6 CLEAR TO		Ø7 R/W	Ø7 CLEAR TO		Ø8 R/W	Ø8 CLEAR TO		FLASH
Ø1	8,9	G	Y	•	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	–
Ø2	10,11,12	R	R	R	G	Y	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	Y
Ø3	5,6	R	R	R	R	R	R	G	Y	•	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	–
Ø4	1,2,3	R	R	R	R	R	R	R	R	R	G	Y	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Ø5	11,12	R	R	R	R	R	R	R	R	R	R	R	R	G	Y	•	R	R	R	R	R	R	R	R	R	–
Ø6	7,8,9	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	G	Y	R	R	R	R	R	R	R	Y
Ø7	2,3	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	G	Y	•	R	R	R	–
Ø8	4,5,6	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	G	Y	R	R
Ø2 PED	19,20	DW	DW	DW	••	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	
Ø4 PED	13,14	DW	DW	DW	DW	DW	DW	DW	DW	DW	••	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	
Ø6 PED	15,16	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	••	DW	DW	DW	DW	DW	DW	DW	DW	
Ø8 PED	17,18	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	••	DW	DW	DW	DW	DW	

•• = WHEN CALLED, TIMES STEADY WALK, THEN FLASHING DON'T WALK, THEN STEADY DON'T WALK.
• = RED INDICATION IS ASSOCIATED WITH CORRESPONDING THROUGH PHASE.

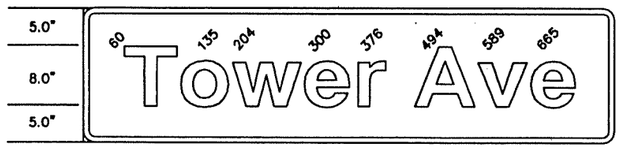
DETECTOR LOGIC

DETECTOR NUMBER	SIZE (FT.)	DISTANCE FROM STOP BAR	AMPLIFIER CHANNEL	DETECTOR OPERATION: CALLS & EXTENDS	DETECTOR OPERATION: CALLS ONLY	DETECTOR OPERATION: EXTENDS ONLY	PHASE CALLED	PHASE EXTENDED	CALLING DELAY	DETECTOR DISCONNECT	EXTENSION STRETCH	MOTOR CYCLE SENSITIVITY
Ø11	4-6x6	5',20',35'	1	X			Ø1	Ø1				
Ø21	6x6	45'	2	X			Ø2	Ø2				
Ø22	6x6	45'	2	X			Ø2	Ø2				
Ø31	4-6x6	5',20',35'	3	X			Ø3	Ø3				
Ø41	2-6x6	120'	4	X			Ø4	Ø4				
Ø51	4-6x6	5',20',35'	5	X			Ø5	Ø5				
Ø61	6x6	45'	6	X			Ø6	Ø6				
Ø62	6x6	45'	6	X			Ø6	Ø6				
Ø71	4-6x6	5',20',35'	7	X			Ø7	Ø7				
Ø81	2-6x6	120'	8	X			Ø8	Ø8				

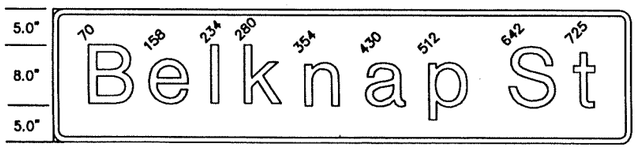
CHART 1

PHASE ON	NON-CONFLICTING PHASE ALLOWED TO TIME CONCURRENTLY	PHASES IN CONFLICT WITH PHASE ON
Ø1	5or6	2-3-4-7-8
Ø2	5or6	1-3-4-7-8
Ø3	7or8	1-2-4-5-6
Ø4	7or8	1-2-3-5-6
Ø5	1or2	3-4-6-7-8
Ø6	1or2	3-4-5-7-8
Ø7	3or4	1-2-5-6-8
Ø8	3or4	1-2-5-6-7

TYPE 2 (STREET NAME) SIGN LAYOUTS



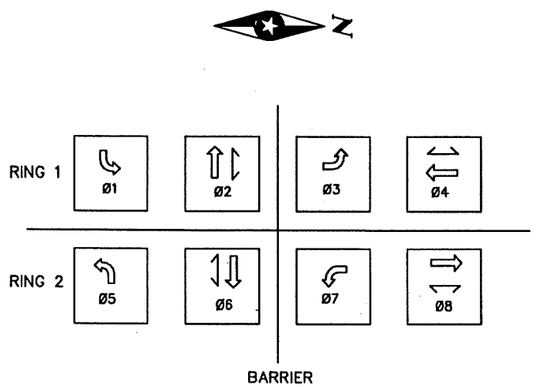
78" x 18" , 3"R. 1.0"B
LINE 1 65.6: 8"-6"E MOD.



84" x 18" , 3"R. 1.0"B.
LINE 1 69.5: 8"-6"E MOD.

SIGN NOTES:

1) COLOR - WHITE ON GREEN BACKGROUND.
2) TYPE "H" REFLECTIVE SHEETING ON ALUMINUM SHEETING SHALL BE USED.
3) SIGNS TO BE FURNISHED AND INSTALLED ON TRAFFIC SIGNAL MAST ARMS AT 5' FROM RIGHT END OF MAST ARM.



NOTES:

1) ANY ACTUATED PHASE FOR WHICH THERE IS NO CALL SHALL BE SKIPPED.
2) WHEN ONE PHASE IS ON ALONE, ANY NON-CONFLICTING PHASE MAY START TIMING CONCURRENTLY, WITHOUT A CLEARANCE INTERVAL (SEE CHART 1 AT LEFT).
3) IF ANY OPPOSING THROUGH PHASES ARE TIMING CONCURRENTLY, THEY SHALL TERMINATE TOGETHER DUE TO PERMISSIVE LEFT TURN CONFLICT.

OVERLAPS
O.L. "A" = NONE
O.L. "B" = NONE
O.L. "C" = NONE
O.L. "D" = NONE

CONTROLLER LOGIC

PHASE NUMBER	PHASE LOCKING	PHASE RECALL	DUAL ENTRY
Ø1	N	N	N
Ø2	N	N	N
Ø3	N	N	N
Ø4	Y	N	N
Ø5	N	N	N
Ø6	N	N	N
Ø7	N	N	N
Ø8	Y	N	N

PEDESTRIAN PUSH BUTTON SIGN

9"x12"

BLACK LEGEND, BORDER, AND ARROW ON WHITE NON-REFLECTORIZED BACKGROUND

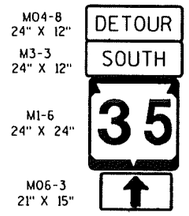
SIGN NO.R10-4c (R, L or DH)

12-11-95 3:42 pm
S:\TRANS\TOWER\CHART2

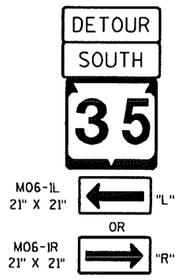
STATE PROJECT NUMBER	SHEET NO
8010-07-73	2.144
TRAFFIC CONTROL SIGNS	
S.T.H. 35	DOUGLAS COUNTY

(A) TYPE A WARNING LIGHTS

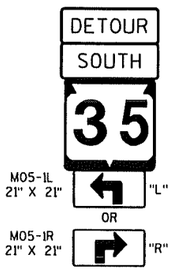
(1)



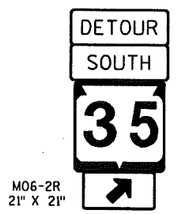
(2-L) OR (2-R)



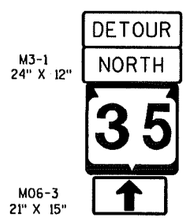
(3-L) OR (3-R)



(4)



(5)



(6-L) OR (6-R)

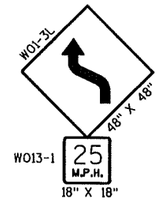
(7-L) OR (7-R)

(8)

(9)

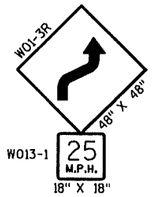
(10) (A)

(11) (A)

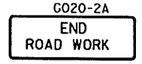


(12)

(13) (A)



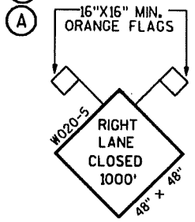
(14)



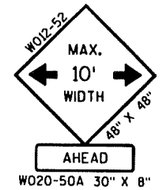
(16)

(17)

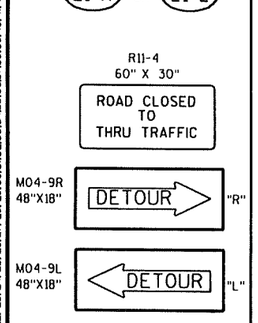
(18) (A)



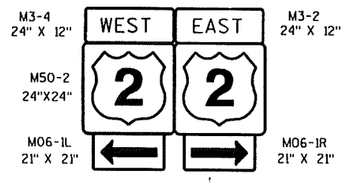
(19) 11' (20) 10' (A) (A)



(21-R) OR (21-L)



(22)

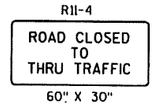


(23)

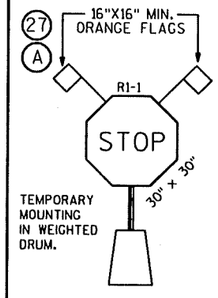
(24)

(25)

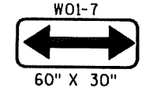
(26)



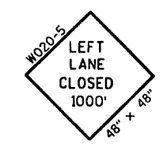
(27) (A)



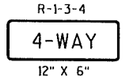
(28)



(29) (A)

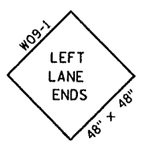


(30)



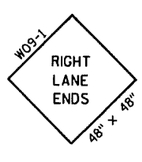
(31)

(32)



(33)

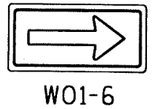
(34)



(35) (A)

(36)

(39)



FILE NAME: HDGN:23202TCS.DGN

STATE PROJECT NUMBER	SHEET NO
8010-07-73	2.145

TRAFFIC CONTROL SIGNS

S.T.H. 35 — DOUGLAS COUNTY

(A) TYPE A WARNING LIGHTS

(40-L) OR (40-R)

M04-8 24" X 12" — DETOUR
M3-4 24" X 12" — WEST
M1-4 24"X24" — 2
M06-1L 21" X 21" "L"
OR
M06-1R 21" X 21" "R"

(41)

STOP AHEAD — W3-1
36" X 36"

(42)

W012-1D — 30" X 30"

(43)

M1-4 24"X24" — 2

(44-L) OR (44-R)

DETOUR
WEST
2
M05-1L 21" X 21" "L"
OR
M05-1R 21" X 21" "R"

(45)

DETOUR
WEST
2
M06-3 21" X 15"

(46)

M4-5 24" X 12" — TO
M3-2 24" X 12" — EAST
2

(47-L) OR (47-R)

TO
EAST
2
OR

(48-L) OR (48-R)

TO
EAST
2
"L"
OR
"R"

(49) (A)

W020-2 — DETOUR AHEAD — 48" X 48"

(50)

M1-6 24" X 24" — 35

(52)

R6-2R 24" X 30" — ONE WAY

(53)

R3-1 36" X 36"

(54)

EAST
2

STATE PROJECT NUMBER	SHEET NO
8010-07-73	2.167

TOWER AVENUE, SUPERIOR
ALIGNMENT LAYOUT
S.T.H. 35 — DOUGLAS CO.

47+18.61 W. FR. RD.
△= 4°00'00" RT.
P.I. 47+18.61
36+33.76 34TH ST.

P.I. 51+67.73
E 1,471,904.55
N 566,259.76
△= 71°21'59" RT.
D= 31°49'52"
T= 129.26'
L= 224.20'
R= 180'
E= 41.61'

P.I. 54+01.12
N 566,320.17
E 1,472,165.35
△= 75°07'55" LT.
D= 31°49'52"
T= 138.45'
L= 236.03'
R= 180'
E= 47.09'

P.I. 60+08.63
N 566,943.55
E 1,472,185.22
△= 46°53'43" LT.
D= 38°11'50"
T= 65.06'
L= 122.77'
R= 150'
E= 13.50'

P.I. 61+31.40
N 567,035.45
E 1,472,093.11
△= 46°53'43" RT.
D= 38°11'50"
T= 65.06'
L= 122.07'
R= 150'
E= 13.50'

P.I. 63+08.36
N 567,219.65
E 1,472,098.98
△= 43°31'12" RT.
D= 49°49'21"
T= 45.90'
L= 87.35'
R= 115'
E= 8.82'

P.I. 63+96.79
N 567,284.94
E 1,472,165.05
△= 44°26'43" LT.
D= 49°49'21"
T= 46.98'
L= 89.21'
R= 115'
E= 9.23'

PC 50+38.47
PRC 52+62.67
EQUATION
EQUATION PT 54+98.71 BK = 55+23.39 AHD
P.R.C. 60+66.34
P.C. 59+43.57
P.T. 61+89.12
P.C. 62+62.46
STA. 48+27.0 31ST ST. = STA. 62+29.76 W. FR. RD.
P.R.C. 63+49.81
P.T. 64+39.01

R/W REBAR
603+62
P.O.L. 603+63.34
PK ℄ ASPH.
TOWER AVE.
50.01'
74.14'
78.84'
35'±
35'±
SET ⅜" SPK. 0.5' N. OF IN SIGN TO HOSPITAL
SET ⅜" SPK. IN LINE BETWEEN TEL. PEDS.

40' 34TH STREET
STA. 608+88.00=
STA. 40+00 34TH
N 565801.12
E 1472226.85

610 615 620 625 TOWER AVENUE 630 635 640 645

N 01°49'33" E
N 01°45'58" E

STA. 630+61.00=
STA. 290+00 29TH
N 567973.01
E 1472296.08

STA. 635+40.94=
STA. 280+00.00
N 568452.71
E 1472311.37

PK R/W
635+02.91
49.97' LT.
62.81'
61.74'
CENTER SE BOLT ON PHILLIPS 66 SIGN
62.81'
R/W REBAR
635+02.97
50.03' RT.
P.I. STA. 635+40.94

STA. 641+11.00 =
STA. 260+00
N 569020.50
E 1472328.88

STA. 646+80.00=
STA. 240+00.00
N 569591.23
E 1472346.47

34TH STREET
P.C. 40+33.00
P.T. 43+58.84

P.I. 41+06.25
N 565,797.73
E 1,472,333.04
△= 10°13'39" RT.
D= 7°00'00"
T= 73.25'
L= 146.11'
R= 818.51'
E= 3.27'

P.I. 42+69.34
N 565,763.60
E 1,472,492.92
△= 12°34'53" LT.
D= 7°00'00"
T= 90.23'
L= 179.74'
R= 818.51'
E= 4.96'

STA. 618+01.69=
STA. 320+00 32ND
N 566714.34
E 1472255.96

STA. 622+23.42=
STA. 50+00 31ST
N 567135.86
E 1472269.39

32ND STREET
31ST STREET
29TH STREET
28TH STREET
26TH STREET
24TH STREET

N

MATCH LINE STA. 648

650 N 01°45'58" E

STA. 652+84.00=
STA. 230+00.00
N 570194.94
E 1472365.09
S 88°13'39" E

STA. 657+04.00=
STA. 220+00.00
N 570614.74
E 1472378.03
S 88°53'00" E

STA. 661+74.00=
STA. 210+00.00
N 571084.69
E 1472392.52
S 88°13'55" E

660

STA. 666+46.00=
STA. 200+00.00
N 571556.30
E 1472407.06
S 87°46'37" E

N 01°45'58" E 670

STA. 670+65.00=
STA. 190+00.00
N 571975.10
E 1472419.97
S 88°12'43" E

STA. 674+85.00=
STA. 180+00.00
N 572394.90
E 1472432.92
S 88°13'13" E

N 01°45'58" E

STA. 679+05.00=
N 572814.70
E 1472445.86

680

STA. 683+24.00=
STA. 160+00.00
N 573233.50
E 1472458.77
S 88°37'02" E

STA. 688+10.66 =
STA. 10+00.00
N 573719.93
E 1472473.77
N 88°14'16" W

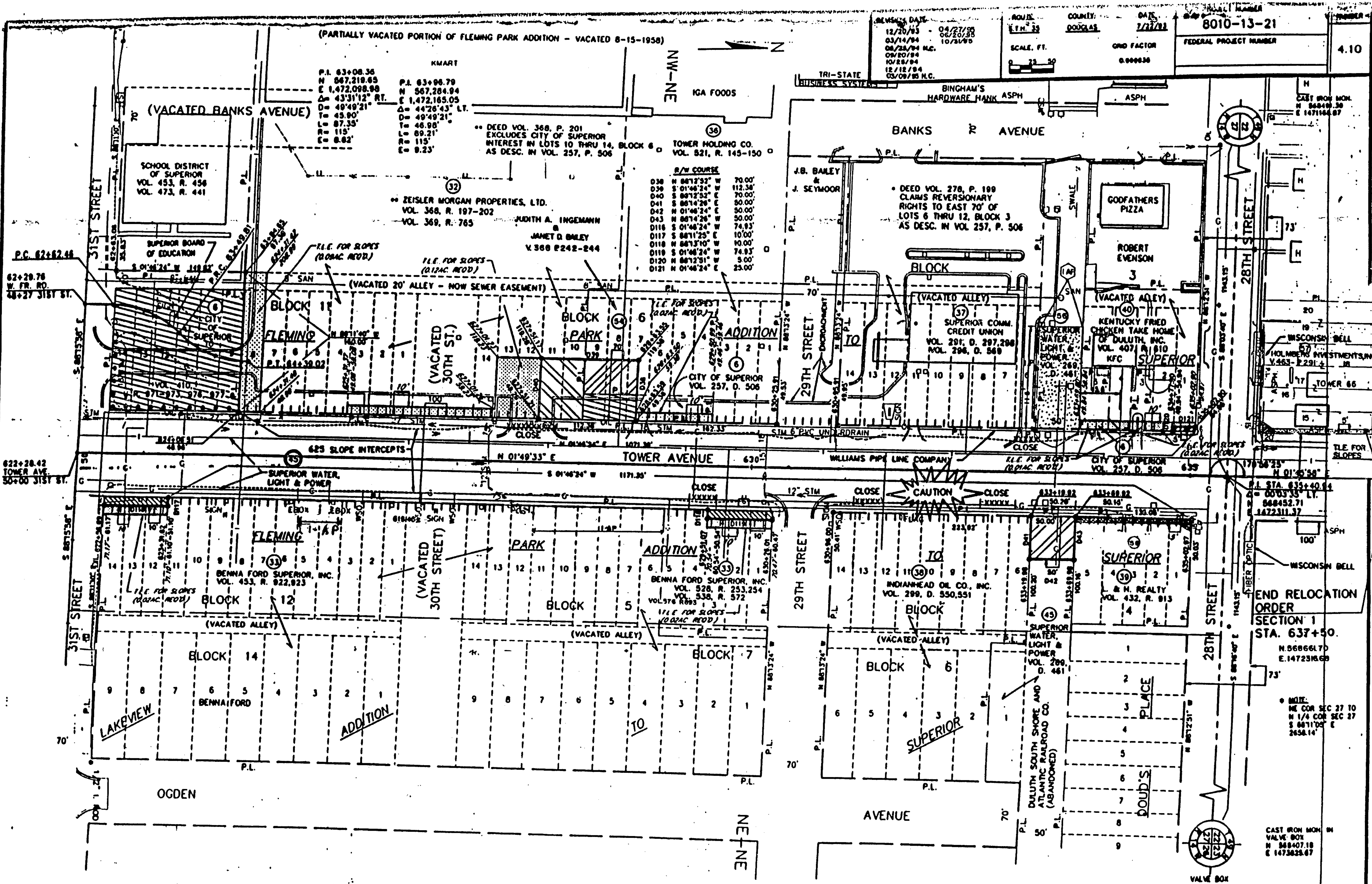
690

BLACK "X" IN SIDEWALK MIDDLE OF BUNBARS STORE
42.00'
42.00'
STA. 690+83.46
O.O.T. PK ℄ TOWER AVE.
BLACK "X" IN SIDEWALK ℄ N. SIDE DOOR TO INSTANT REPLAY

23RD STREET
22ND STREET
21ST STREET
20TH STREET
19TH STREET
18TH STREET
17TH STREET
16TH STREET
BELKNAP STREET
15
OGDEN AVENUE
STA. 13+85.52 BELKNAP =
STA. 100+00.00 OGDEN
N 573708.07
E 1472859.11

LEVELS ON • 2,3,4,5,6,7,8,9,10,11,12 11. 20,21, 23,24,25,26,27,28, 30, 32,33,34,35,36,37,38,39,40,41,42,43,44,
51,52,53,54,55,56,57,58,59,60,61,62,63

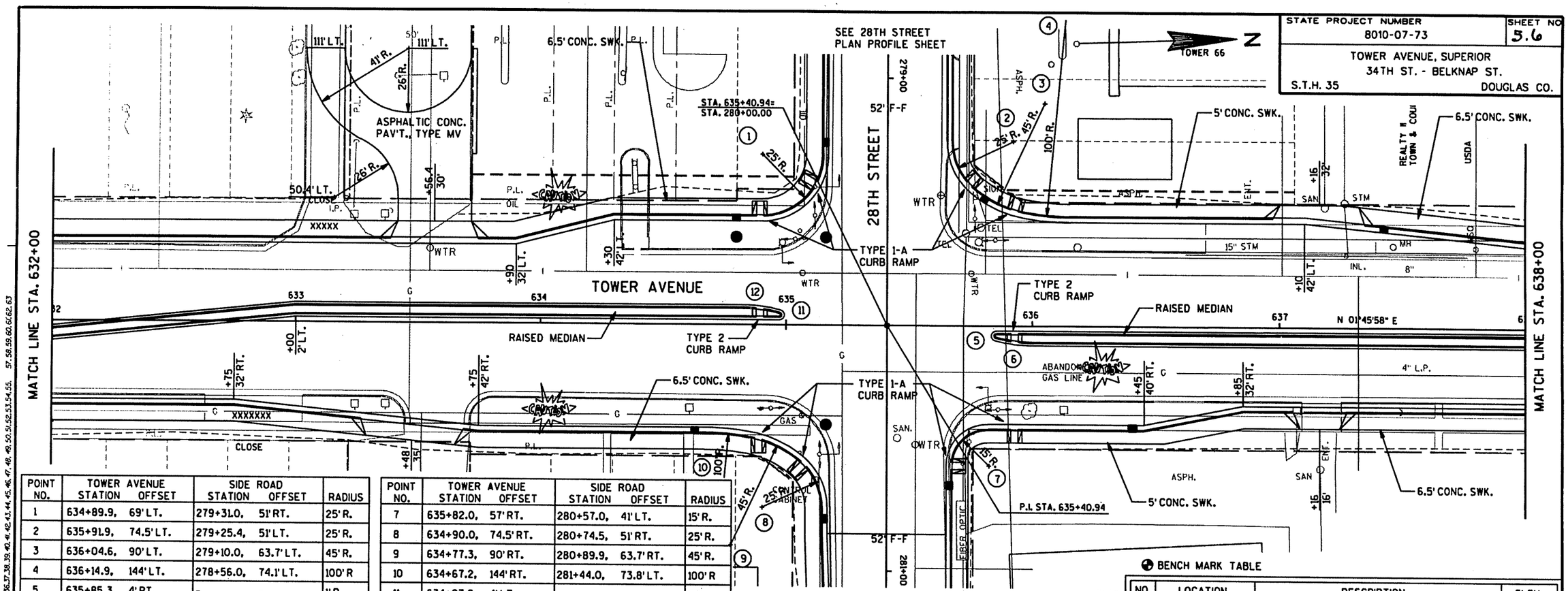
FILE NAME: HDGN:23202all.dgn



8010-13-21
FEDERAL PROJECT NUMBER
4.10
COUNTY: DOUGLAS
SCALE, FT.
GRID FACTOR
(PARTIALLY VACATED PORTION OF FLEMING PARK ADDITION - VACATED 8-15-1958)
KMART
IGA FOODS
TRI-STATE BUSINESS SYSTEMS
BINGHAM'S HARDWARE HANK
(VACATED BANKS AVENUE)
BANKS AVENUE
SCHOOL DISTRICT OF SUPERIOR VOL. 453, R. 456 VOL. 473, R. 441
SUPERIOR BOARD OF EDUCATION
DEED VOL. 368, P. 201 EXCLUDES CITY OF SUPERIOR INTEREST IN LOTS 10 THRU 14, BLOCK 6 AS DESC. IN VOL. 257, P. 506
ZEISLER MORGAN PROPERTIES, LTD. VOL. 368, R. 197-202 VOL. 369, R. 765
JUDITH A. INGEMANN & JANET D. BAILEY
TOWER HOLDING CO. VOL. 521, R. 145-150
R/W COURSE
J.B. BAILEY & J. SEYMOOR
DEED VOL. 278, P. 199 CLAIMS REVERSIONARY RIGHTS TO EAST 70' OF LOTS 6 THRU 12, BLOCK 3 AS DESC. IN VOL 257, P. 506
GODFATHERS PIZZA
ROBERT EVENSON
(VACATED 20' ALLEY - NOW SEWER EASEMENT)
T.L.E. FOR SLOPES
(VACATED ALLEY)
SUPERIOR COMM. CREDIT UNION
SUPERIOR WATER, LIGHT & POWER
KENTUCKY FRIED CHICKEN TAKE HOME OF DULUTH, INC.
KFC
CITY OF SUPERIOR VOL. 257, D. 506
BLOCK 11
BLOCK 6
BLOCK 3
FLEMING PARK ADDITION TO SUPERIOR
(VACATED 30TH ST.)
31ST STREET
29TH STREET
28TH STREET
WISCONSIN BELL
HOLMBERG INVESTMENTS, INC
TOWER 66
TOWER AVENUE
625 SLOPE INTERCEPTS
WILLIAMS PIPE LINE COMPANY
CAUTION
CLOSE
BENNA FORD SUPERIOR, INC. VOL. 453, R. 822,823
BENNA FORD SUPERIOR, INC. VOL. 528, R. 253,254 VOL. 538, R. 572
INDIANHEAD OIL CO., INC. VOL. 299, D. 550,551
L & H. REALTY VOL. 432, R. 913
(VACATED 30TH STREET)
BLOCK 12
BLOCK 5
BLOCK 4
BLOCK 14
BLOCK 7
BLOCK 6
LAKEVIEW ADDITION TO SUPERIOR
DULUTH SOUTH SHORE AND ATLANTIC RAILROAD CO. (ABANDONED)
DOUD'S PLACE
OGDEN AVENUE
NE-NW
END RELOCATION ORDER SECTION 1 STA. 637+50
CAST IRON MON. IN VALVE BOX
VALVE BOX
T.L.E. FOR SLOPES

STATE PROJECT NUMBER 8010-07-73 | SHEET NO 3.6

TOWER AVENUE, SUPERIOR
34TH ST. - BELKNAP ST.
S.T.H. 35 DOUGLAS CO.



POINT NO.	TOWER AVENUE STATION	TOWER AVENUE OFFSET	SIDE ROAD STATION	SIDE ROAD OFFSET	RADIUS
1	634+89.9,	69' LT.	279+31.0,	51' RT.	25' R.
2	635+91.9,	74.5' LT.	279+25.4,	51' LT.	25' R.
3	636+04.6,	90' LT.	279+10.0,	63.7' LT.	45' R.
4	636+14.9,	144' LT.	278+56.0,	74.1' LT.	100' R
5	635+85.3,	4' RT.	-	-	1' R.
6	636+00.4,	53' LT.	-	-	60' R.

POINT NO.	TOWER AVENUE STATION	TOWER AVENUE OFFSET	SIDE ROAD STATION	SIDE ROAD OFFSET	RADIUS
7	635+82.0,	57' RT.	280+57.0,	41' LT.	15' R.
8	634+90.0,	74.5' RT.	280+74.5,	51' RT.	25' R.
9	634+77.3,	90' RT.	280+89.9,	63.7' RT.	45' R.
10	634+67.2,	144' RT.	281+44.0,	73.8' LT.	100' R
11	634+97.2,	4' LT.	-	-	1' R.
12	634+82.0,	53' RT.	-	-	60' R.

BENCH MARK TABLE

BLDG NO.	LOCATION	DESCRIPTION	ELEV.
2	--	TOP N.W. BOLT SIGNAL LIGHT BASE S.E. COR. 28TH & TOWER	660.01

NET LENGTH OF CENTERLINE STA. 632+00 TO STA. 638+00= 600 L.F.

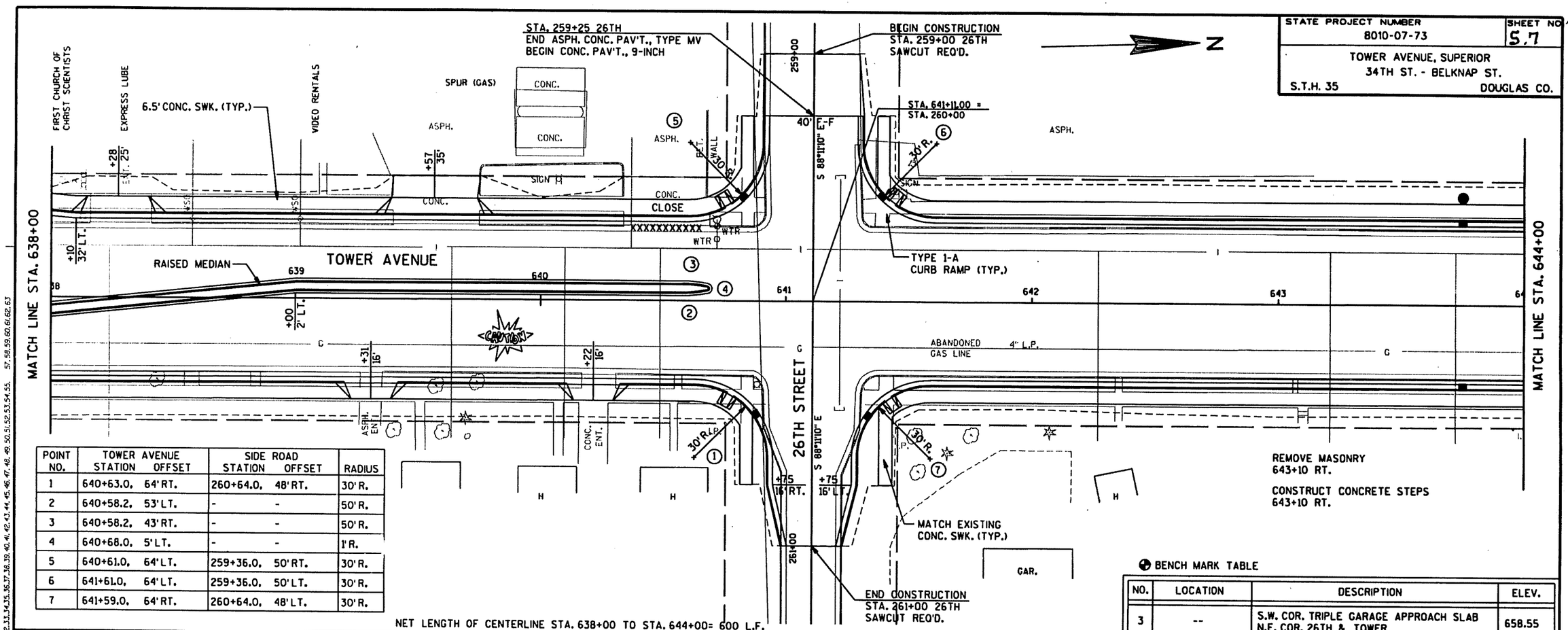
	632+00	632+25	632+50	632+75	633+00	633+25	633+50	633+75	634+00	634+25	634+50	634+75	635+00	635+25	635+50	635+75	636+00	636+25	636+50	636+75	637+00	637+25	637+50	637+75	638+00
EXIST.			660.8		660.9	661.0			660.8		660.5		660.2	660.0		659.5	659.5		659.4		659.2	659.1	659.0		658.8
38'LT.																									
32'LT.			59.33		59.49	59.54	59.55	59.50	59.41		59.17		58.93	58.86	58.75	58.60	58.45		58.21		57.97		57.73		57.49
20'LT.			59.63		59.79	59.84	59.85	59.80	59.71		59.47		59.23	59.11	58.99	58.87	58.75		58.51		58.27		58.03		57.79
8'LT.			59.87		60.03	60.08	60.09	60.04	59.95		59.71		59.47	59.35	59.23	59.11	58.99		58.75		58.51		58.27		58.03
℄		659.95	660.03	660.11	660.19	660.24	660.25	660.20	660.11	659.99	659.87	659.75	659.63	659.51	659.39	659.27	659.15	659.03	658.91	658.79	658.67	658.55	658.43	658.31	658.19
8'RT.			59.87		60.03	60.08	60.09	60.04	59.95		59.71		59.47	59.35	59.23	59.11	58.99		58.75		58.51		58.27		58.03
20'RT.			59.63		59.79	59.84	59.85	59.80	59.71		59.47		59.23	59.11	58.99	58.87	58.75		58.51		58.27		58.03		57.79
32'RT.			59.33		59.49	59.54	59.55	59.50	59.41		59.17		58.93	58.86	58.77	58.61	58.45		58.21		57.97		57.73		57.49
40'RT.																									

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, 57,58,59,60,61,62,63

FILE NAME: H00N123202PP7

STATE PROJECT NUMBER	SHEET NO.
8010-07-73	5.7

TOWER AVENUE, SUPERIOR
34TH ST. - BELKNAP ST.
S.T.H. 35 DOUGLAS CO.

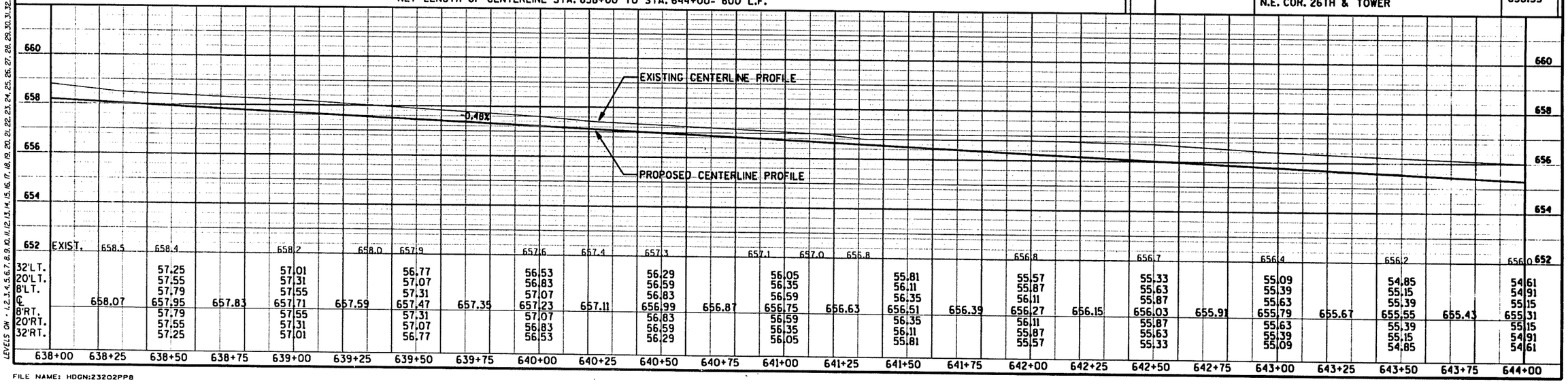


POINT NO.	TOWER AVENUE STATION	TOWER AVENUE OFFSET	SIDE ROAD STATION	SIDE ROAD OFFSET	RADIUS
1	640+63.0,	64'RT.	260+64.0,	48'RT.	30'R.
2	640+58.2,	53'LT.	-	-	50'R.
3	640+58.2,	43'RT.	-	-	50'R.
4	640+68.0,	5'LT.	-	-	1'R.
5	640+61.0,	64'LT.	259+36.0,	50'RT.	30'R.
6	641+61.0,	64'LT.	259+36.0,	50'LT.	30'R.
7	641+59.0,	64'RT.	260+64.0,	48'LT.	30'R.

NET LENGTH OF CENTERLINE STA. 638+00 TO STA. 644+00= 600 L.F.

BENCH MARK TABLE

NO.	LOCATION	DESCRIPTION	ELEV.
3	--	S.W. COR. TRIPLE GARAGE APPROACH SLAB N.E. COR. 26TH & TOWER	658.55



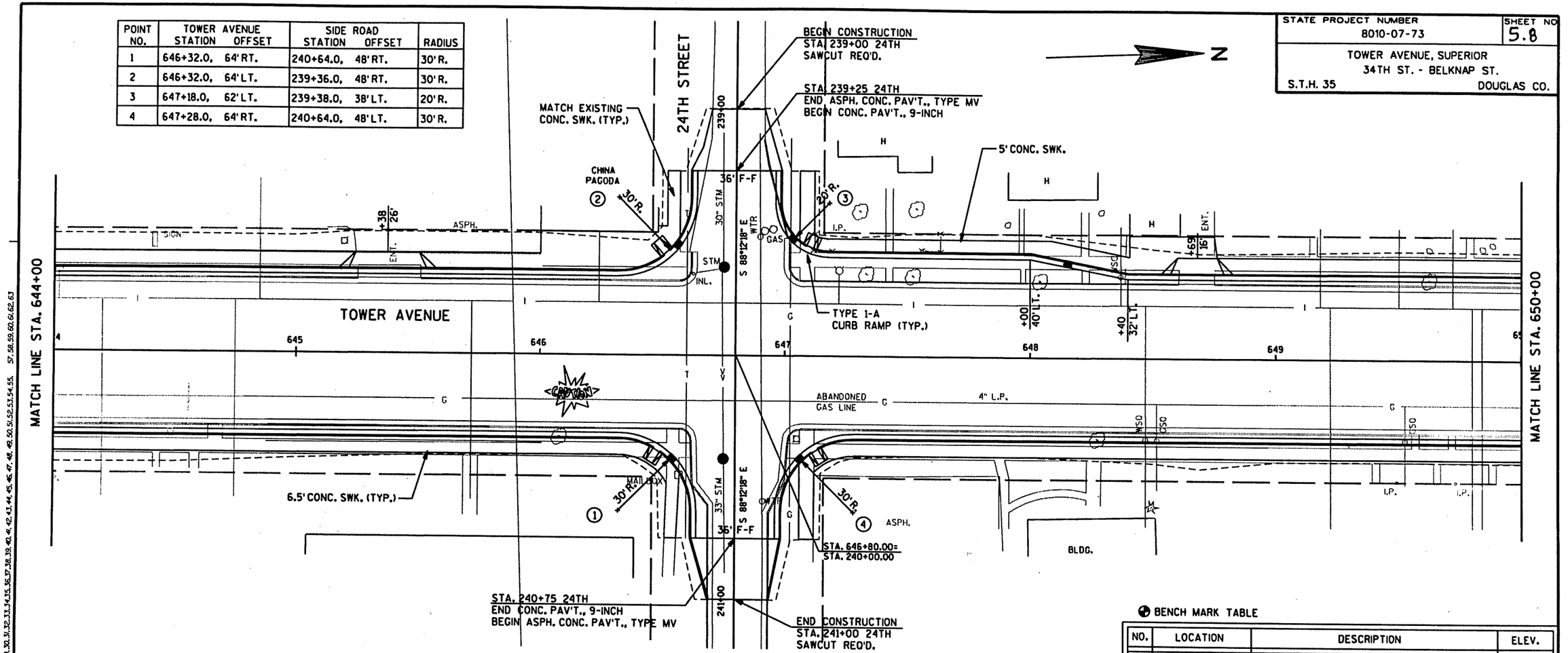
	638+00	638+25	638+50	638+75	639+00	639+25	639+50	639+75	640+00	640+25	640+50	640+75	641+00	641+25	641+50	641+75	642+00	642+25	642+50	642+75	643+00	643+25	643+50	643+75	644+00
EXIST.		658.5	658.4		658.2		658.0	657.9		657.6	657.4	657.3		657.1	657.0	656.8		656.8		656.7		656.4		656.2		656.0
32'LT.			57.25		57.01			56.77		56.53		56.29		56.05			55.81		55.57		55.33		55.09		54.85		54.61
20'LT.			57.55		57.31			57.07		56.83		56.59		56.35			56.11		55.87		55.63		55.39		55.15		54.91
8'LT.			57.79		57.55			57.31		57.07		56.83		56.59			56.35		56.11		55.87		55.63		55.39		55.15
℄		658.07	657.95	657.83	657.71	657.59	657.47	657.35	657.23	657.11	656.99	656.87	656.75	656.63	656.51	656.39	656.27	656.15	656.03	655.91	655.79	655.67	655.55	655.43	655.31
8'RT.			57.79		57.55			57.31		57.07		56.83		56.59			56.35		56.11		55.87		55.63		55.39		55.15
20'RT.			57.55		57.31			57.07		56.83		56.59		56.35			56.11		55.87		55.63		55.39		55.15		54.91
32'RT.			57.25		57.01			56.77		56.53		56.29		56.05			55.81		55.57		55.33		55.09		54.85		54.61

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

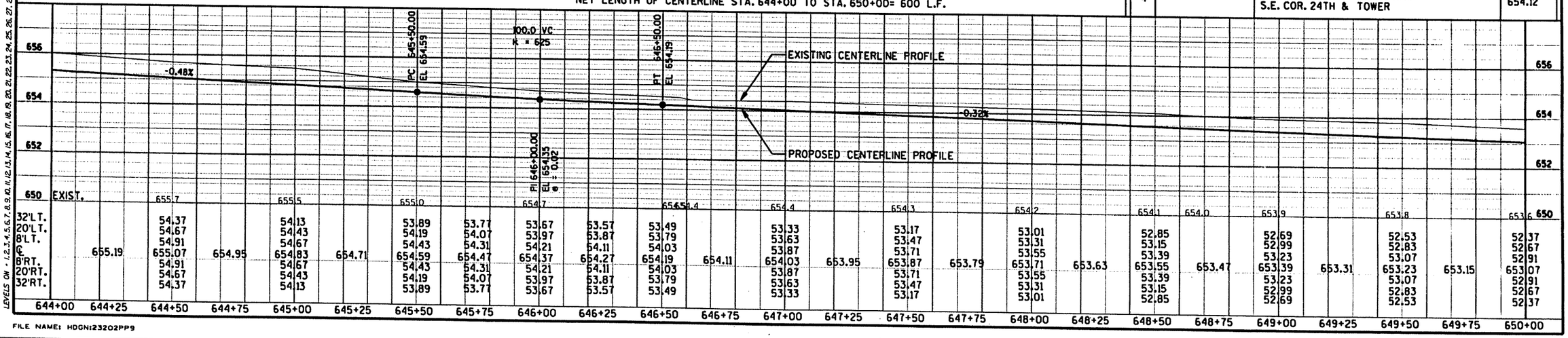
FILE NAME: HDGN:23202PP8

STATE PROJECT NUMBER	SHEET NO
8010-07-73	5.8
TOWER AVENUE, SUPERIOR 34TH ST. - BELKNAP ST.	
S.T.H. 35	DOUGLAS CO.

POINT NO.	TOWER AVENUE STATION	TOWER AVENUE OFFSET	SIDE ROAD STATION	SIDE ROAD OFFSET	RADIUS
1	646+32.0,	64'RT.	240+64.0,	48'RT.	30'R.
2	646+32.0,	64'LT.	239+36.0,	48'RT.	30'R.
3	647+18.0,	62'LT.	239+38.0,	38'LT.	20'R.
4	647+28.0,	64'RT.	240+64.0,	48'LT.	30'R.



NET LENGTH OF CENTERLINE STA. 644+00 TO STA. 650+00= 600 L.F.



BENCH MARK TABLE

NO.	LOCATION	DESCRIPTION	ELEV.
4	--	N.W. COR. CONC. MAILBOX BASE S.E. COR. 24TH & TOWER	654.12

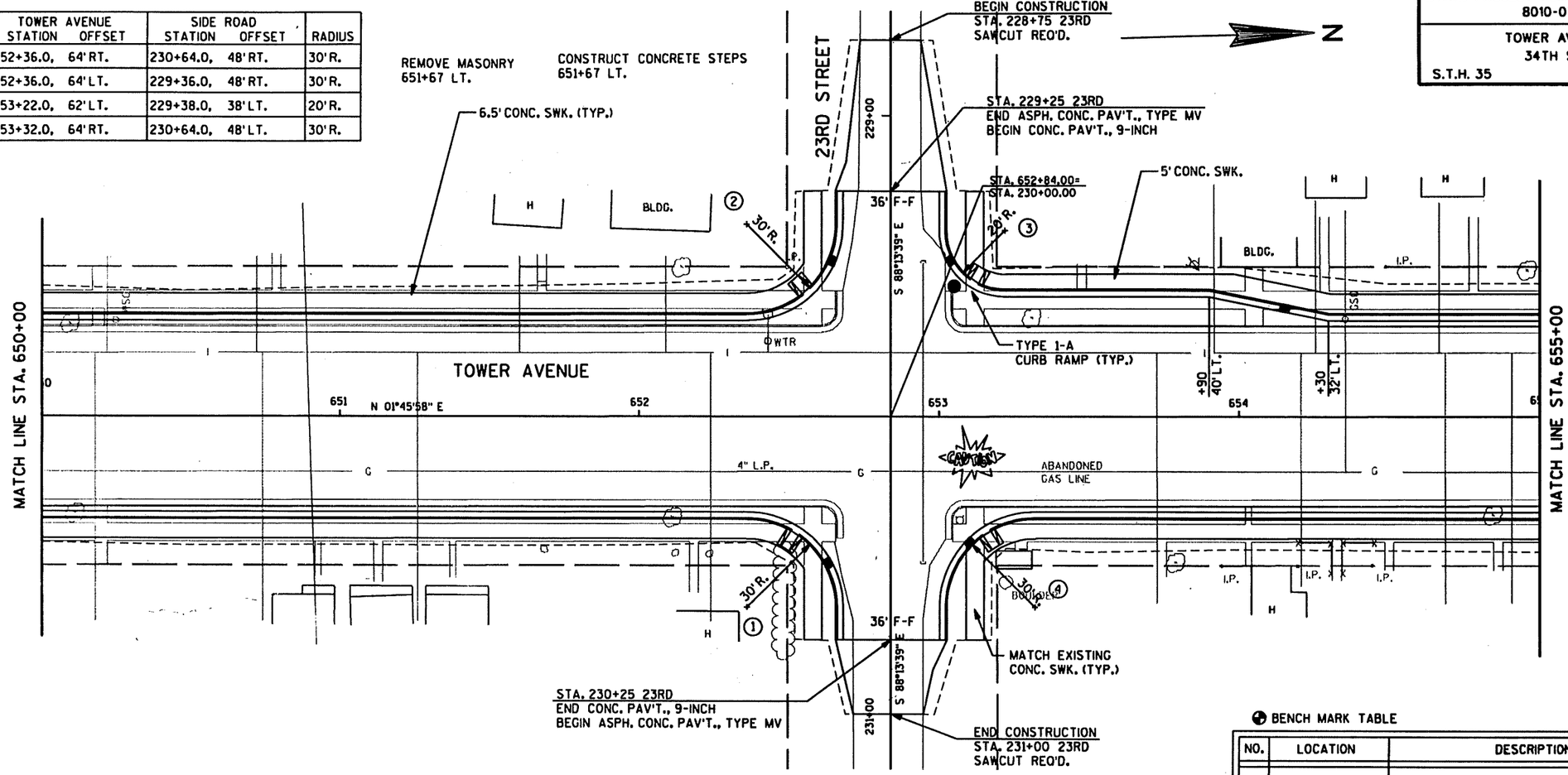
LEVELS ON - 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,51,52,53,54,55,57,58,59,60,61,62,63

FILE NAME: HDGN:23202PP9

STATE PROJECT NUMBER	SHEET NO
8010-07-73	5.9

TOWER AVENUE, SUPERIOR
34TH ST. - BELKNAP ST.
S.T.H. 35 DOUGLAS CO.

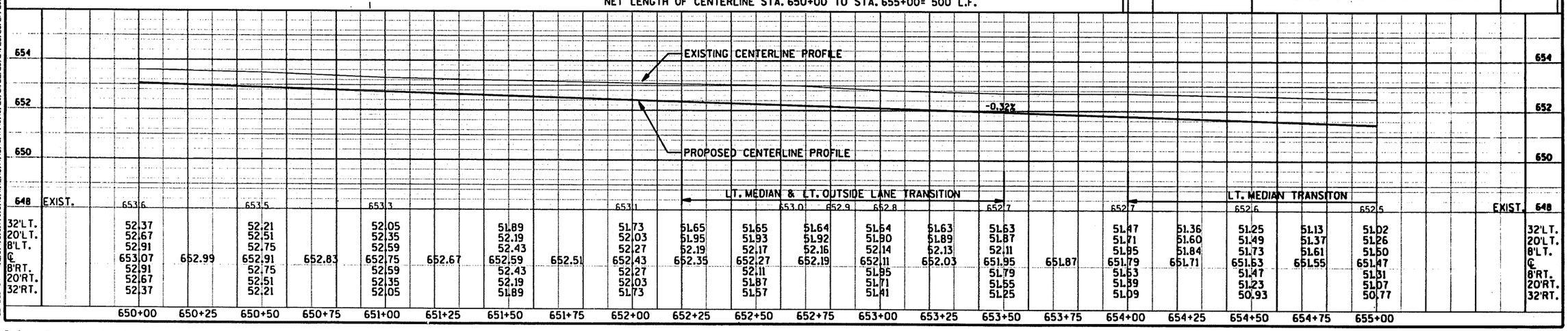
POINT NO.	TOWER AVENUE STATION	TOWER AVENUE OFFSET	SIDE ROAD STATION	SIDE ROAD OFFSET	RADIUS
1	652+36.0,	64'RT.	230+64.0,	48'RT.	30'R.
2	652+36.0,	64'LT.	229+36.0,	48'RT.	30'R.
3	653+22.0,	62'LT.	229+38.0,	38'LT.	20'R.
4	653+32.0,	64'RT.	230+64.0,	48'LT.	30'R.



BENCH MARK TABLE

NO.	LOCATION	DESCRIPTION	ELEV.
5	--	TOP N.E. COR. OF BOTTOM STEP #1802 23RD	654.30

NET LENGTH OF CENTERLINE STA. 650+00 TO STA. 655+00= 500 L.F.



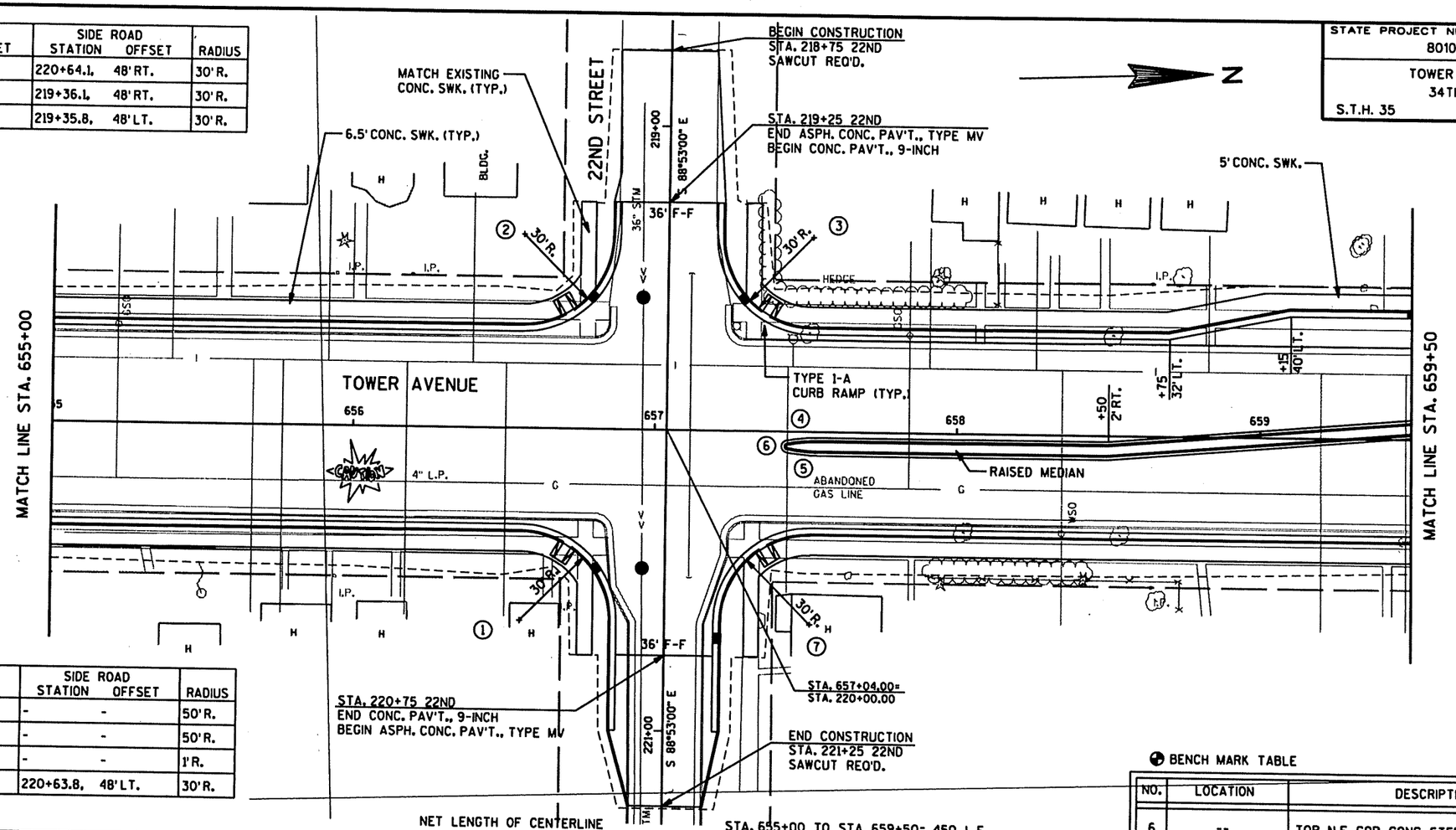
LEVELS ON - 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,51,52,53,54,55,57,58,59,60,61,62,63

FILE NAME: HDGN:23202PP10

STATE PROJECT NUMBER	SHEET NO
8010-07-73	5.10
TOWER AVENUE, SUPERIOR 34TH ST. - BELKNAP ST.	
S.T.H. 35	DOUGLAS CO.

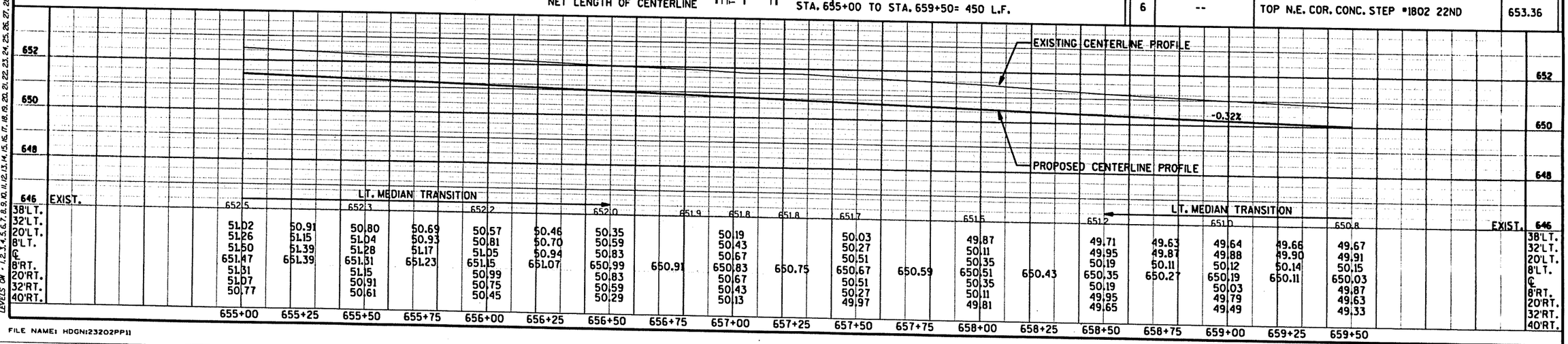
POINT NO.	TOWER AVENUE STATION	TOWER AVENUE OFFSET	SIDE ROAD STATION	SIDE ROAD OFFSET	RADIUS
1	656+55.8,	64'RT.	220+64.1,	48'RT.	30'R.
2	656+56.2,	64'LT.	219+36.1,	48'RT.	30'R.
3	657+52.2,	64'LT.	219+35.8,	48'LT.	30'R.

POINT NO.	TOWER AVENUE STATION	TOWER AVENUE OFFSET	SIDE ROAD STATION	SIDE ROAD OFFSET	RADIUS
4	657+53.8,	53'RT.	-	-	50'R.
5	657+53.8,	43'LT.	-	-	50'R.
6	657+44.0,	5'RT.	-	-	1'R.
7	657+51.8,	64'RT.	220+63.8,	48'LT.	30'R.



BENCH MARK TABLE

NO.	LOCATION	DESCRIPTION	ELEV.
6	--	TOP N.E. COR. CONC. STEP #1802 22ND	653.36



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, 57,58,59,60,61,62,63

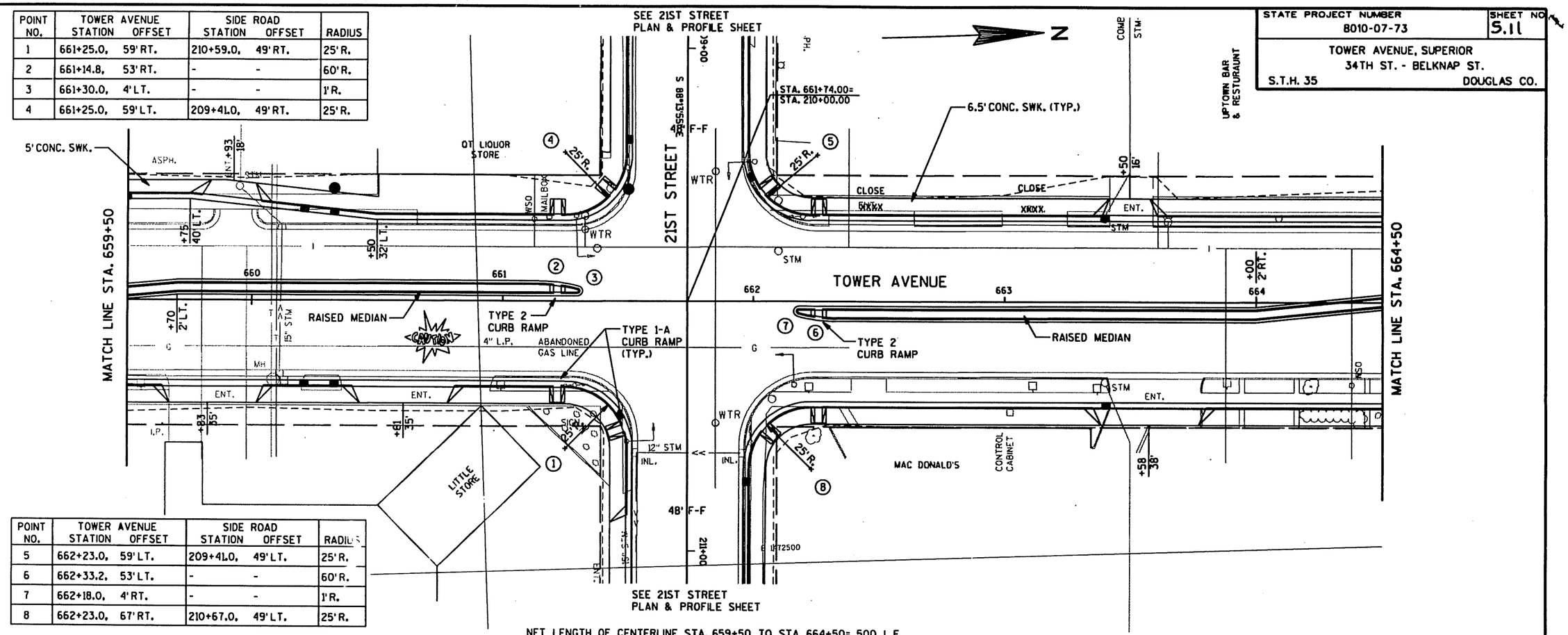
FILE NAME: HDGN:23202PP11

STATE PROJECT NUMBER	SHEET NO.
8010-07-73	5.11

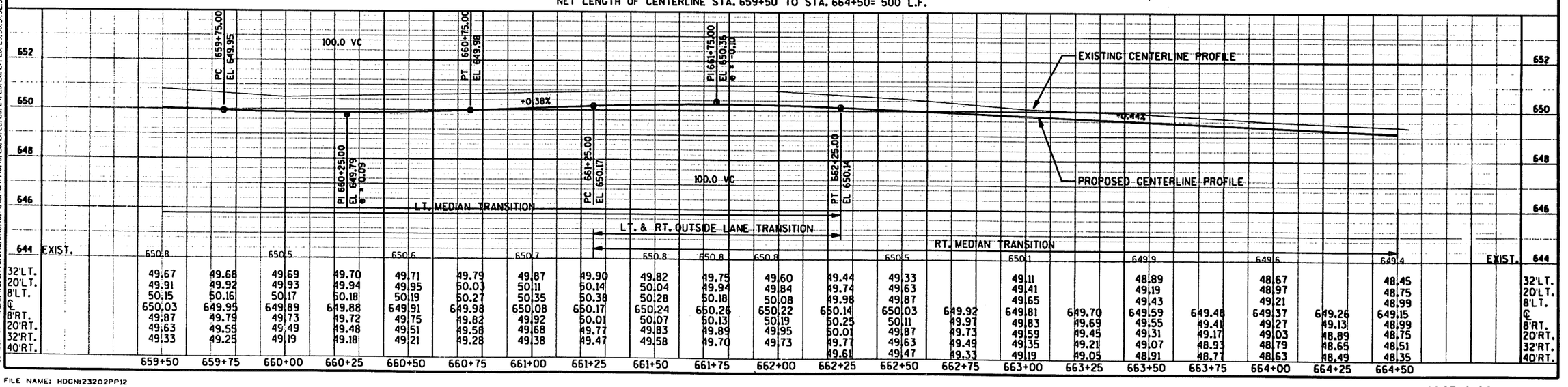
TOWER AVENUE, SUPERIOR
34TH ST. - BELKNAP ST.
S.T.H. 35 DOUGLAS CO.

POINT NO.	TOWER AVENUE STATION	TOWER AVENUE OFFSET	SIDE ROAD STATION	SIDE ROAD OFFSET	RADIUS
1	661+25.0,	59'RT.	210+59.0,	49'RT.	25'R.
2	661+14.8,	53'RT.	-	-	60'R.
3	661+30.0,	4'LT.	-	-	1'R.
4	661+25.0,	59'LT.	209+41.0,	49'RT.	25'R.

POINT NO.	TOWER AVENUE STATION	TOWER AVENUE OFFSET	SIDE ROAD STATION	SIDE ROAD OFFSET	RADIUS
5	662+23.0,	59'LT.	209+41.0,	49'LT.	25'R.
6	662+33.2,	53'LT.	-	-	60'R.
7	662+18.0,	4'RT.	-	-	1'R.
8	662+23.0,	67'RT.	210+67.0,	49'LT.	25'R.



NET LENGTH OF CENTERLINE STA. 659+50 TO STA. 664+50= 500 L.F.



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

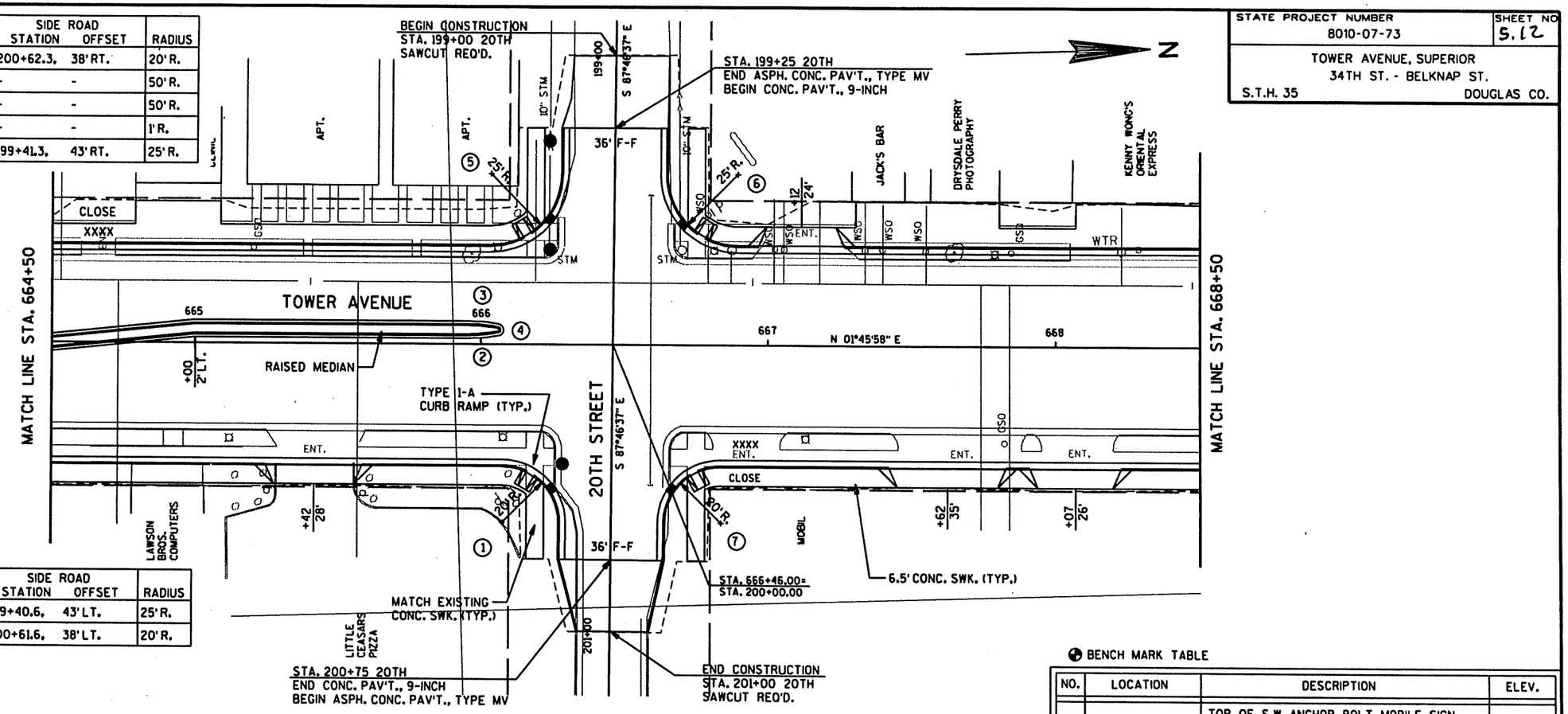
FILE NAME: HDGN:23202PP12

STATE PROJECT NUMBER	SHEET NO
8010-07-73	5.12

TOWER AVENUE, SUPERIOR
34TH ST. - BELKNAP ST.
S.T.H. 35 DOUGLAS CO.

POINT NO.	TOWER AVENUE STATION	TOWER AVENUE OFFSET	SIDE ROAD STATION	SIDE ROAD OFFSET	RADIUS
1	666+07.5,	62'RT.	200+62.3,	38'RT.	20'R.
2	665+96.2,	53'LT.	-	-	50'R.
3	665+96.2,	43'RT.	-	-	50'R.
4	666+06.0,	5'LT.	-	-	1'R.
5	666+03.5,	59'LT.	199+41.3,	43'RT.	25'R.

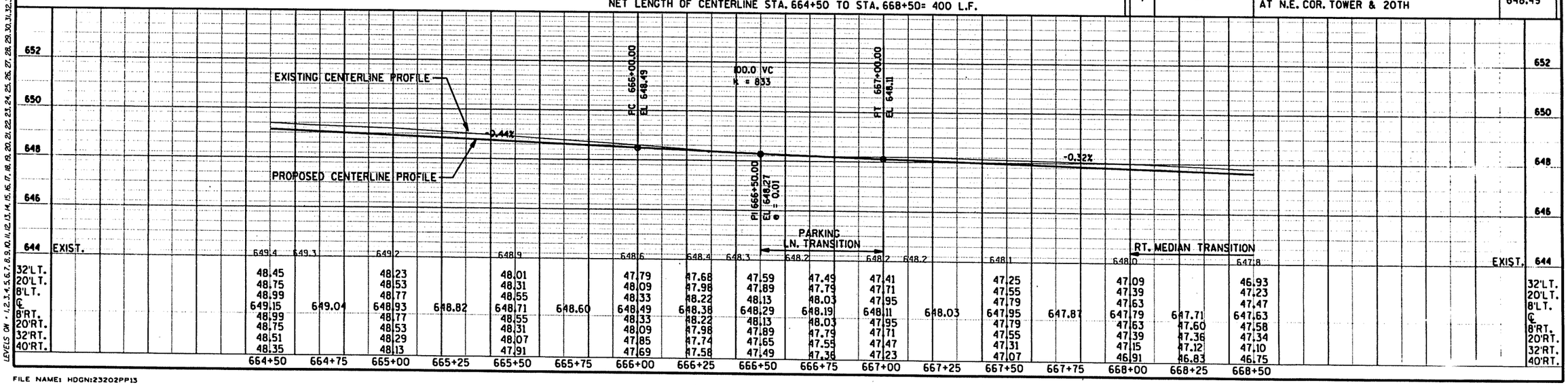
POINT NO.	TOWER AVENUE STATION	TOWER AVENUE OFFSET	SIDE ROAD STATION	SIDE ROAD OFFSET	RADIUS
6	666+89.5,	59'LT.	199+40.6,	43'LT.	25'R.
7	666+83.5,	62'RT.	200+61.6,	38'LT.	20'R.



BENCH MARK TABLE

NO.	LOCATION	DESCRIPTION	ELEV.
7	--	TOP OF S.W. ANCHOR BOLT MOBILE SIGN AT N.E. COR. TOWER & 20TH	648.49

NET LENGTH OF CENTERLINE STA. 664+50 TO STA. 668+50= 400 L.F.



	664+50	664+75	665+00	665+25	665+50	665+75	666+00	666+25	666+50	666+75	667+00	667+25	667+50	667+75	668+00	668+25	668+50
EXIST.	649.4	649.3	649.2		648.9		648.6	648.4	648.3	648.2	648.2	648.2	648.1		648.0		647.8
32'LT.	48.45		48.23		48.01		47.79	47.68	47.59	47.49	47.41		47.25		47.09		46.93
20'LT.	48.75		48.53		48.31		48.09	47.98	47.89	47.79	47.71		47.55		47.39		47.23
8'LT.	48.99		48.77		48.55		48.33	48.22	48.13	48.03	47.95		47.79		47.63		47.47
℄	649.15	649.04	648.93	648.82	648.71	648.60	648.49	648.38	648.29	648.19	648.11	648.03	647.95	647.87	647.79	647.71	647.63
8'RT.	48.99		48.77		48.55		48.33	48.22	48.13	48.03	47.95		47.79		47.63	47.60	47.58
20'RT.	48.75		48.53		48.31		48.09	47.98	47.89	47.79	47.71		47.55		47.39	47.36	47.34
32'RT.	48.51		48.29		48.07		47.85	47.74	47.65	47.55	47.47		47.31		47.15	47.12	47.10
40'RT.	48.35		48.13		47.91		47.69	47.58	47.49	47.36	47.23		47.07		46.91	46.83	46.75

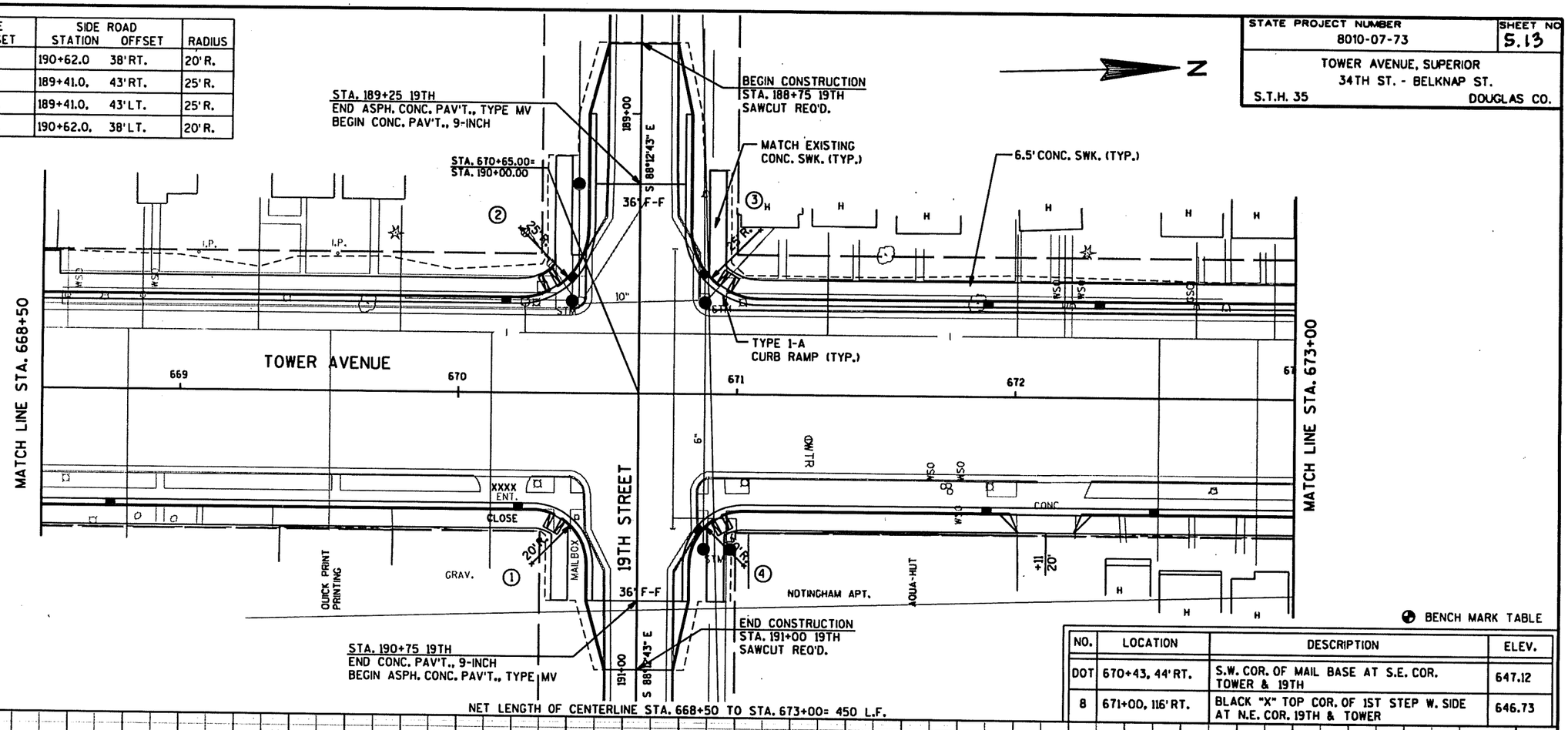
LEVELS ON - 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,51,52,53,54,55,57,58,59,60,61,62,63

FILE NAME: HDGN:23202PP13

POINT NO.	TOWER AVENUE STATION	TOWER AVENUE OFFSET	SIDE ROAD STATION	SIDE ROAD OFFSET	RADIUS
1	670+27.0,	62'RT.	190+62.0	38'RT.	20'R.
2	670+22.0,	59'LT.	189+41.0,	43'RT.	25'R.
3	671+08.0,	59'LT.	189+41.0,	43'LT.	25'R.
4	671+03.0,	62'RT.	190+62.0,	38'LT.	20'R.

STATE PROJECT NUMBER	SHEET NO
8010-07-73	5.13

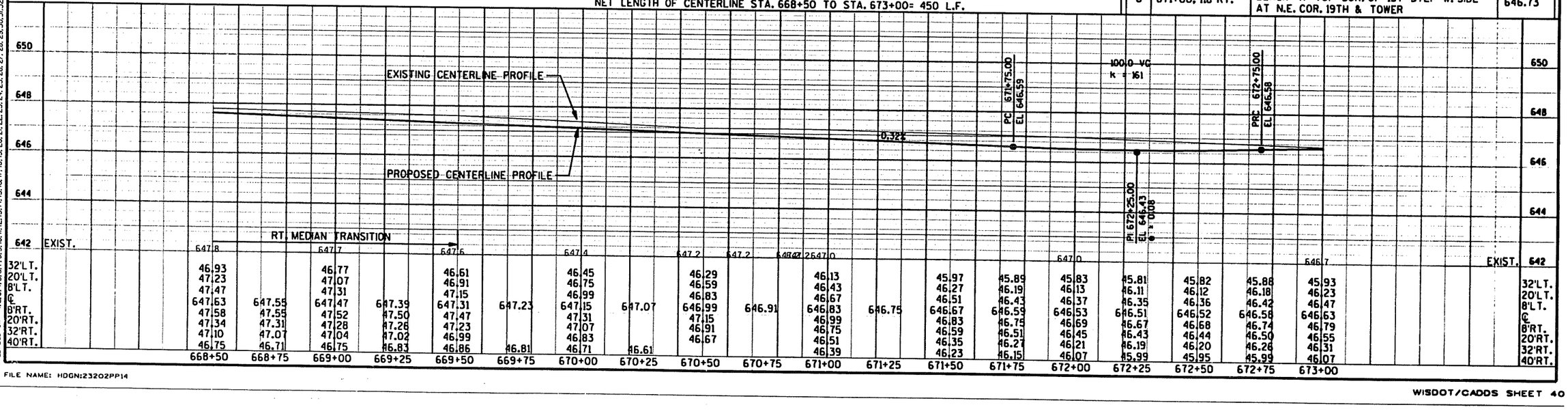
TOWER AVENUE, SUPERIOR
34TH ST. - BELKNAP ST.
S.T.H. 35 DOUGLAS CO.



NET LENGTH OF CENTERLINE STA. 668+50 TO STA. 673+00= 450 L.F.

BENCH MARK TABLE

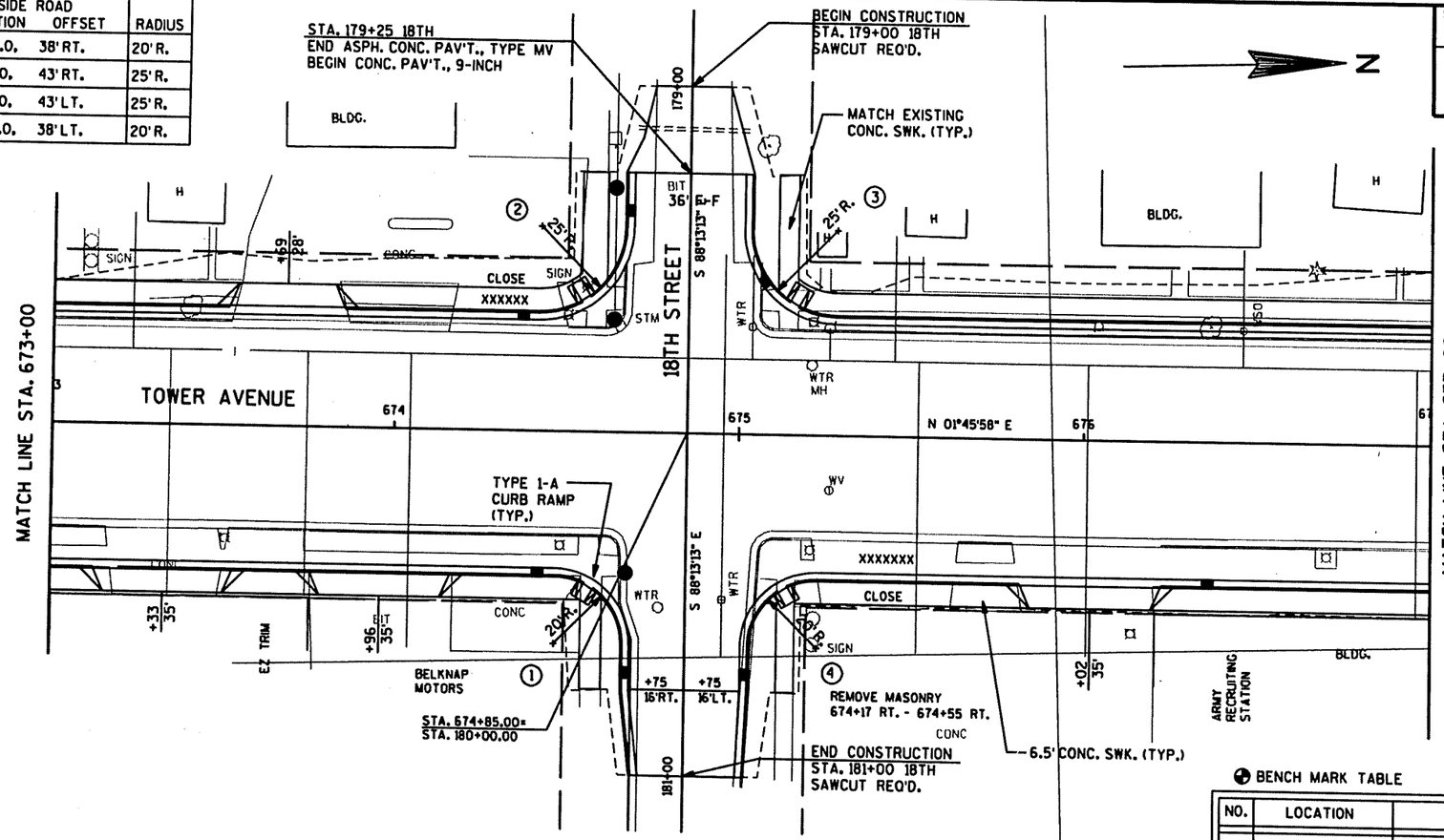
NO.	LOCATION	DESCRIPTION	ELEV.
DOT	670+43, 44'RT.	S.W. COR. OF MAIL BASE AT S.E. COR. TOWER & 19TH	647.12
8	671+00, 116'RT.	BLACK "X" TOP COR. OF 1ST STEP W. SIDE AT N.E. COR. 19TH & TOWER	646.73



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, 57,58,59,60,61,62,63

FILE NAME: HDGN:23202PP14

POINT NO.	TOWER AVENUE STATION	TOWER AVENUE OFFSET	SIDE ROAD STATION	SIDE ROAD OFFSET	RADIUS
1	674+47.0,	62'RT.	180+62.0,	38'RT.	20'R.
2	674+42.0,	59'LT.	179+41.0,	43'RT.	25'R.
3	675+28.0,	59'LT.	179+41.0,	43'LT.	25'R.
4	675+23.0,	62'RT.	180+62.0,	38'LT.	20'R.



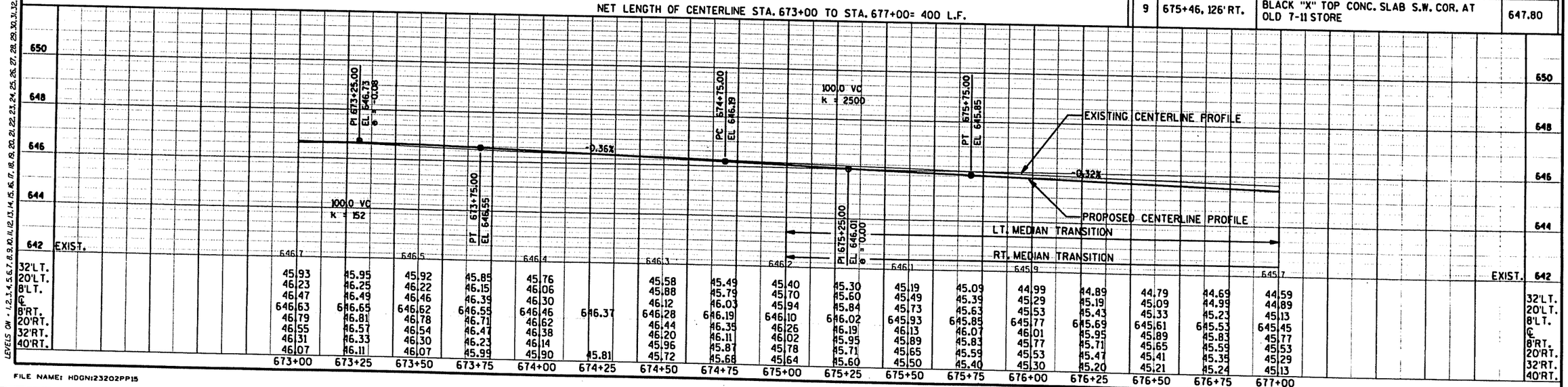
STATE PROJECT NUMBER	SHEET NO
8010-07-73	5.14

TOWER AVENUE, SUPERIOR
34TH ST. - BELKNAP ST.
S.T.H. 35 DOUGLAS CO.

BENCH MARK TABLE

NO.	LOCATION	DESCRIPTION	ELEV.
9	675+46, 126'RT.	BLACK "X" TOP CONC. SLAB S.W. COR. AT OLD 7-11 STORE	647.80

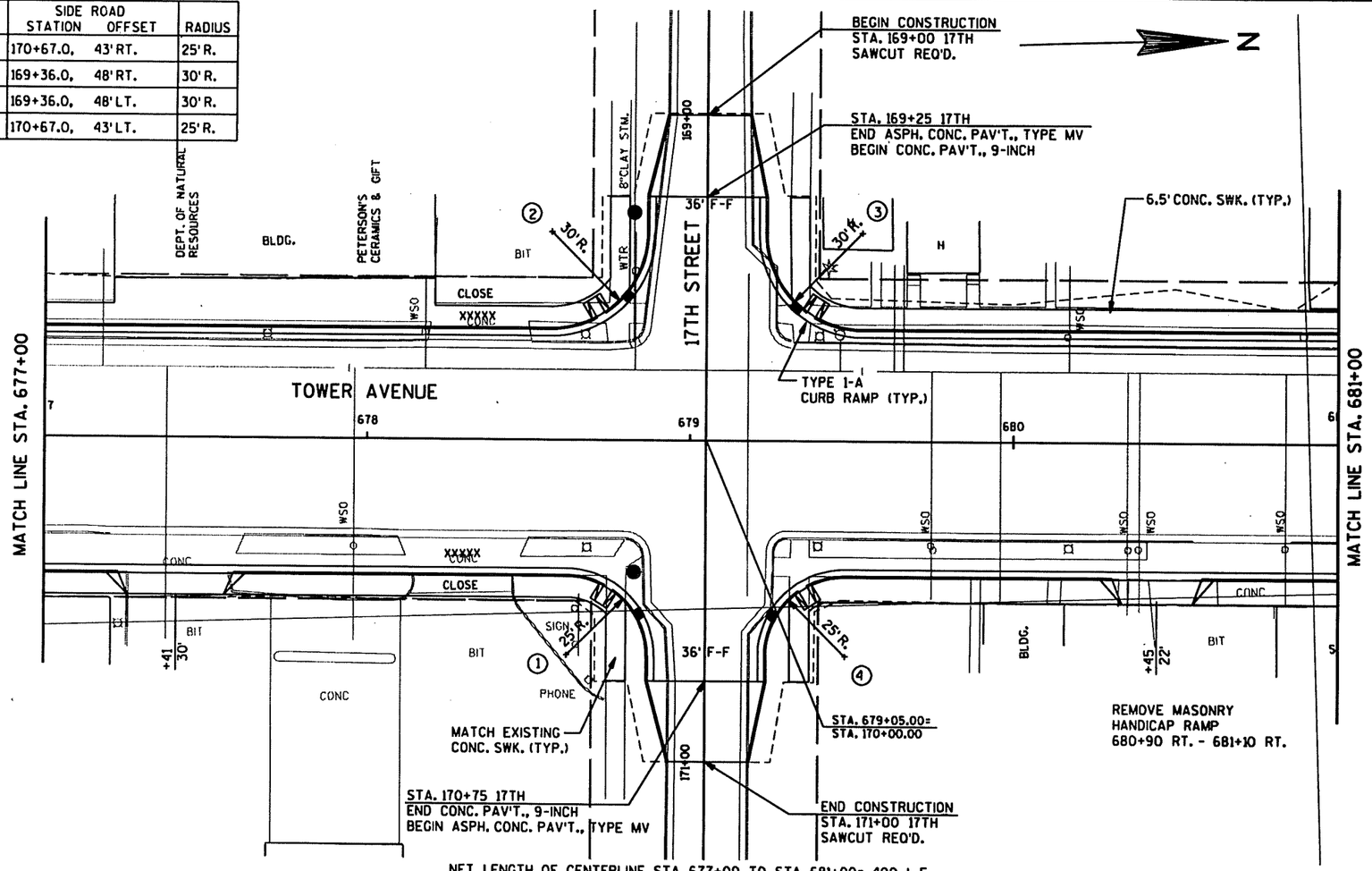
NET LENGTH OF CENTERLINE STA. 673+00 TO STA. 677+00= 400 L.F.



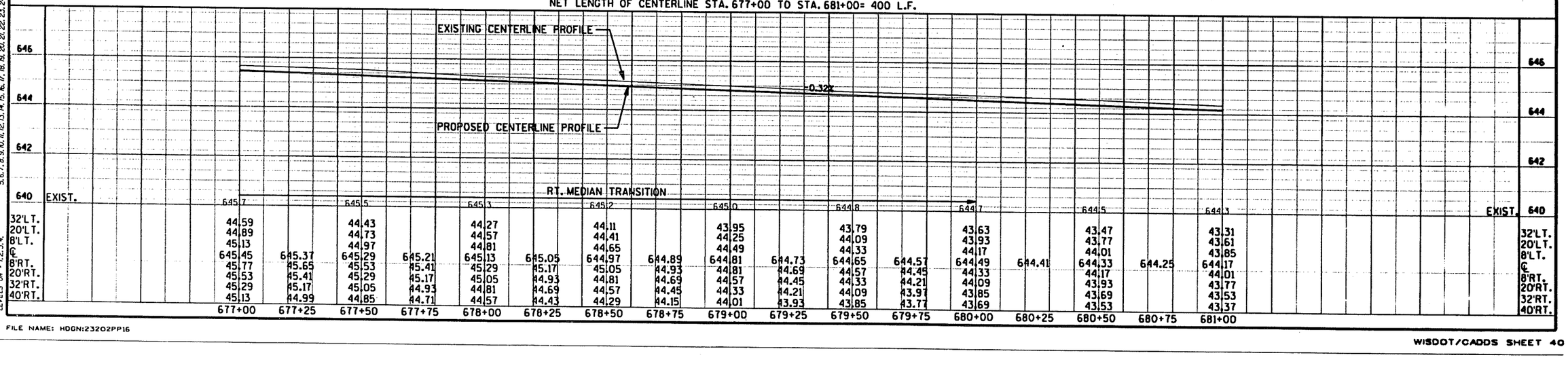
LEVELS ON - 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,51,52,53,54,55, 57,58,59,60,61,62,63

FILE NAME: HDGN:23202PP15

POINT NO.	TOWER AVENUE STATION	TOWER AVENUE OFFSET	SIDE ROAD STATION	SIDE ROAD OFFSET	RADIUS
1	678+62.0,	67'RT.	170+67.0,	43'RT.	25'R.
2	678+57.0,	64'LT.	169+36.0,	48'RT.	30'R.
3	679+53.0,	64'LT.	169+36.0,	48'LT.	30'R.
4	679+48.0,	67'RT.	170+67.0,	43'LT.	25'R.



NET LENGTH OF CENTERLINE STA. 677+00 TO STA. 681+00= 400 L.F.



STATE PROJECT NUMBER	SHEET NO.
8010-07-73	5,15

TOWER AVENUE, SUPERIOR
34TH ST. - BELKNAP ST.
S.T.H. 35 DOUGLAS CO.

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, 57,58,59,60,61,62,63

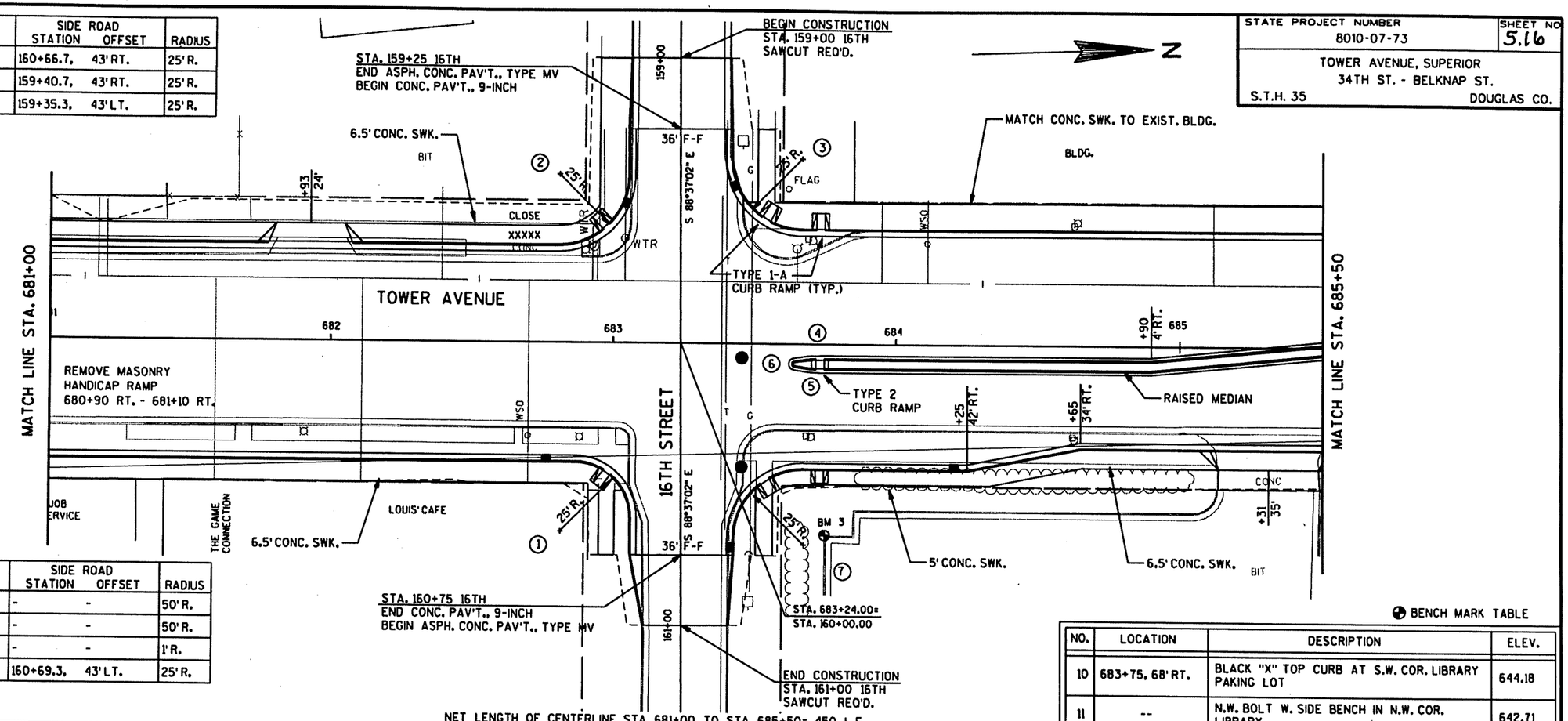
FILE NAME: HDGN:23202PP16

STATE PROJECT NUMBER	SHEET NO
8010-07-73	5.16

TOWER AVENUE, SUPERIOR
34TH ST. - BELKNAP ST.
S.T.H. 35 DOUGLAS CO.

POINT NO.	TOWER AVENUE STATION	TOWER AVENUE OFFSET	SIDE ROAD STATION	SIDE ROAD OFFSET	RADIUS
1	682+81.5,	67'RT.	160+66.7,	43'RT.	25'R.
2	682+80.6,	59'LT.	159+40.7,	43'RT.	25'R.
3	683+66.6,	65'LT.	159+35.3,	43'LT.	25'R.

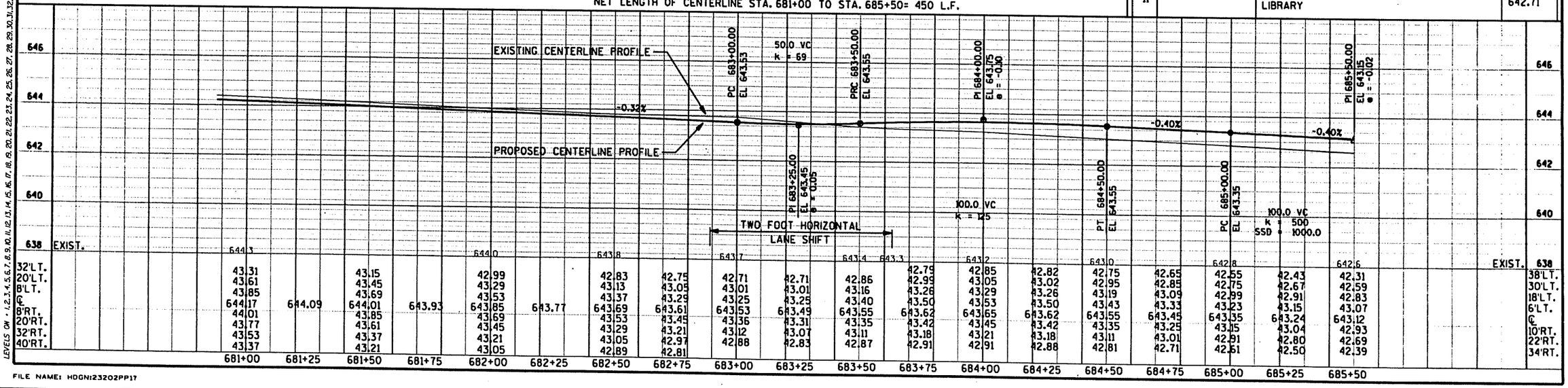
POINT NO.	TOWER AVENUE STATION	TOWER AVENUE OFFSET	SIDE ROAD STATION	SIDE ROAD OFFSET	RADIUS
4	683+73.9,	55'RT.	-	-	50'R.
8	683+73.9,	41'LT.	-	-	50'R.
5	683+64.0,	7'RT.	-	-	1'R.
7	683+67.5,	69'RT.	160+69.3,	43'LT.	25'R.



BENCH MARK TABLE

NO.	LOCATION	DESCRIPTION	ELEV.
10	683+75, 68'RT.	BLACK "X" TOP CURB AT S.W. COR. LIBRARY PAKING LOT	644.18
11	--	N.W. BOLT W. SIDE BENCH IN N.W. COR. LIBRARY	642.71

NET LENGTH OF CENTERLINE STA. 681+00 TO STA. 685+50= 450 L.F.



	EXIST.	644.3		644.0		643.8	643.7	643.4	643.3	643.2		643.0		642.8		642.6	EXIST.	
32'LT.		43.31		43.15		42.99	42.83	42.75	42.71	42.71	42.86	42.79	42.85	42.82	42.75	42.65	42.55	42.43	42.31	38'LT.
20'LT.		43.61		43.45		43.29	43.13	43.05	43.01	43.01	43.16	42.99	43.05	43.02	42.95	42.85	42.75	42.67	42.59	30'LT.
8'LT.		43.85		43.69		43.53	43.37	43.29	43.25	43.25	43.40	43.26	43.29	43.26	43.19	43.09	42.99	42.91	42.83	18'LT.
℄		644.17	644.09	644.01	643.93	643.85	643.77	643.69	643.61	643.53	643.49	643.50	643.53	643.50	643.43	43.33	43.23	43.15	43.07	6'LT.
8'RT.		44.01		43.85		43.69		43.53	43.45	43.36	43.31	43.35	643.55	643.62	643.55	643.45	643.35	643.24	643.12	℄
20'RT.		43.77		43.61		43.45		43.29	43.21	43.12	43.07	43.11	43.35	43.42	43.35	43.25	43.15	43.04	42.93	10'RT.
32'RT.		43.53		43.37		43.21		43.05	42.97	42.88	42.83	42.87	43.11	43.18	43.11	43.01	42.91	42.80	42.69	22'RT.
40'RT.		43.37		43.21		43.05		42.89	42.81				42.91	42.91	42.88	42.71	42.61	42.50	42.39	34'RT.
		681+00	681+25	681+50	681+75	682+00	682+25	682+50	682+75	683+00	683+25	683+50	683+75	684+00	684+25	684+50	684+75	685+00	685+25	685+50

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

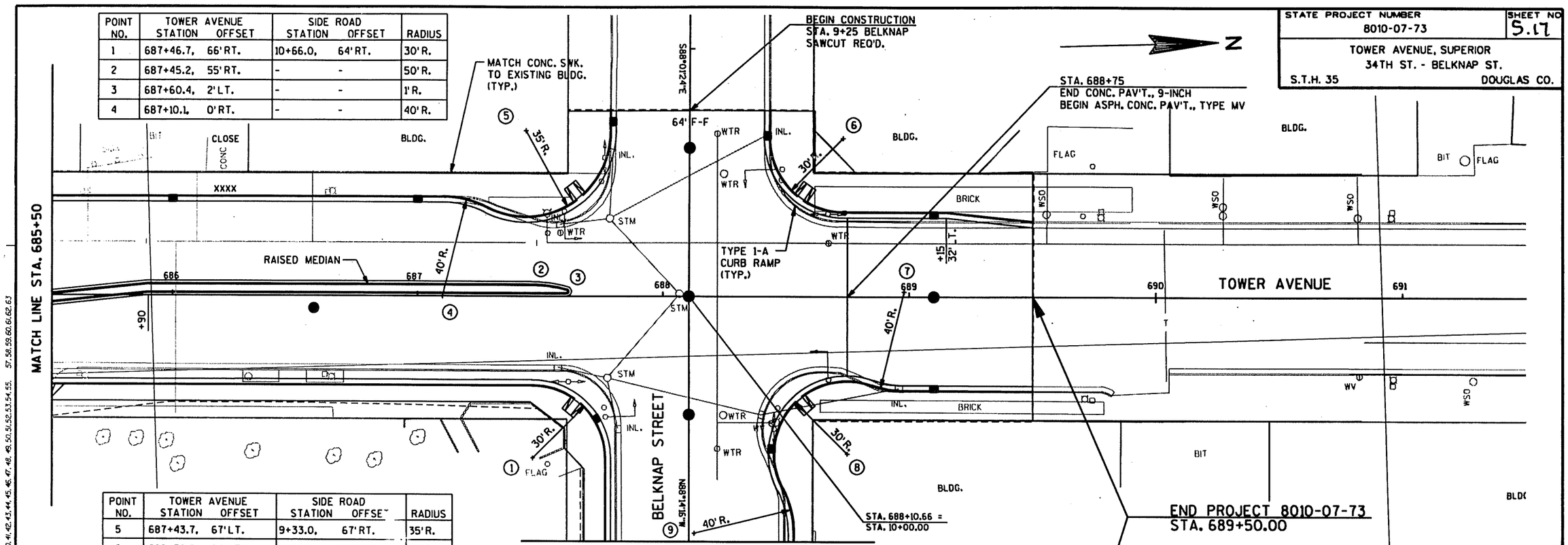
FILE NAME: HDGN:23202PP17

STATE PROJECT NUMBER	SHEET NO
8010-07-73	5.17

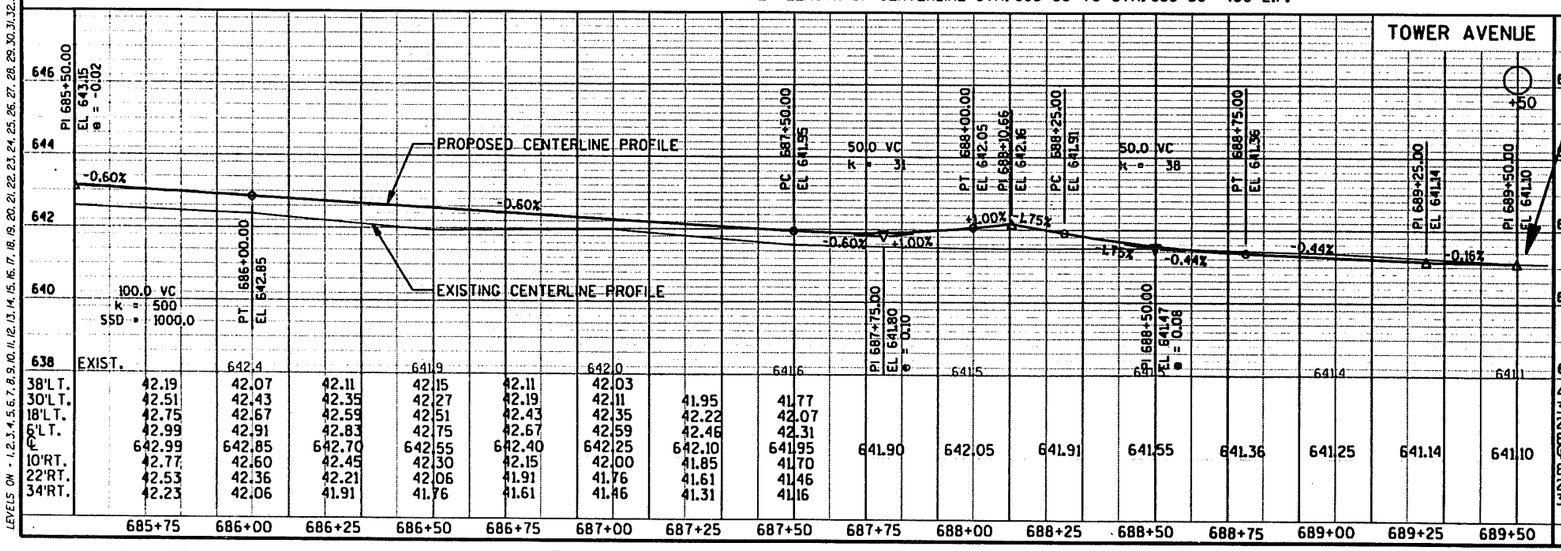
TOWER AVENUE, SUPERIOR
34TH ST. - BELKNAP ST.
S.T.H. 35 DOUGLAS CO.

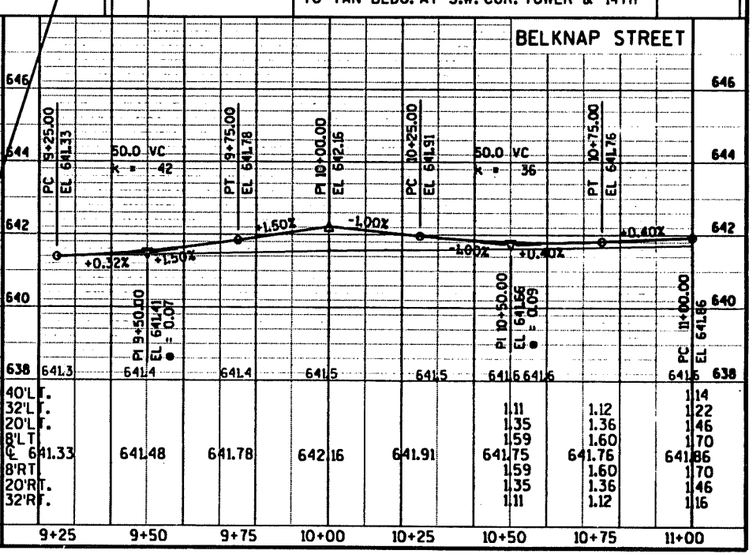
POINT NO.	TOWER AVENUE STATION	TOWER AVENUE OFFSET	SIDE ROAD STATION	SIDE ROAD OFFSET	RADIUS
1	687+46.7,	66'RT.	10+66.0,	64'RT.	30'R.
2	687+45.2,	55'RT.	-	-	50'R.
3	687+60.4,	2'LT.	-	-	1'R.
4	687+10.1,	0'RT.	-	-	40'R.

POINT NO.	TOWER AVENUE STATION	TOWER AVENUE OFFSET	SIDE ROAD STATION	SIDE ROAD OFFSET	RADIUS
5	687+43.7,	67'LT.	9+33.0,	67'RT.	35'R.
6	688+72.9,	64'LT.	9+36.0,	62'LT.	30'R.
7	688+97.9,	2'LT.	-	-	40'R.
8	688+74.7,	64'RT.	10+64.0,	64'LT.	30'R.
9	688+12.7,	96.5'RT.	10+96.5,	2'LT.	40'R.



NET LENGTH OF CENTERLINE STA. 685+50 TO STA. 689+50= 400 L.F.





BENCH MARK TABLE

NO.	LOCATION	DESCRIPTION	ELEV.
12	--	TOP OF BOTTOM STEP N.E. COR. AT N. ENT. TO TAN BLDG. AT S.W. COR. TOWER & 14TH	640.57

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, 57,58,59,60,61,62,63

FILE NAME: HDGN:23202PP18

STATE PROJECT NUMBER	SHEET NO
8010-07-73	5.25

28TH STREET, SUPERIOR
BANKS AVE. - OGDEN AVE.
S.T.H. 35 DOUGLAS CO.

SEE TOWER AVENUE
PLAN & PROFILE SHEET

STA. 278+25 28TH
END ASPH. CONC. PAV'T., TYPE MV
BEGIN CONC. PAV'T., 9-INCH

BEGIN CONSTRUCTION
STA. 277+75 28TH
SAWCUT REQ'D.

STA. 635+40.94=
STA. 280+00.00

STA. 280+85 28TH
END CONC. PAV'T., 9-INCH
BEGIN ASPH. CONC. PAV'T., TYPE MV

END CONSTRUCTION
STA. 282+35 28TH
SAWCUT REQ'D.

28TH STREET

TOWER AVENUE

ABANDONED GAS LINE

P.I. STA. 635+40.94

CROWN LINE

S88°12'51"E

N

SEE TOWER AVENUE
PLAN & PROFILE SHEET

PI 277+75.00 EL 659.03
PC 277+90.00 EL 659.08
PI 278+25.00 EL 659.21 e = -0.08
PT 278+60.00 EL 659.01
PC 279+30.00 EL 658.62
PI 279+55.00 EL 658.48 e = -0.17
PT 279+80.00 EL 659.03
PI 280+00.00 EL 659.43
PC 280+20.00 EL 659.03
PI 280+45.00 EL 658.53 e = -0.16
PT 280+70.00 EL 658.68
PC 281+00.00 EL 658.86
PI 281+50.00 EL 658.16 e = -0.16
PT 282+00.00 EL 658.80
PI 282+35.00 EL 658.55

70.0 VC k = 76 SSD = 757.4
50.0 VC k = 18
50.0 VC k = 19
100.0 VC k = 76 SSD = 553.5

+0.36% +0.36% -0.56% -0.56% -0.56% +2.20% +2.00% +2.00% -2.00% +0.60% +0.60% +0.60% -0.72% -0.72%

277+50 277+75 278+00 278+25 278+50 278+75 279+00 279+25 279+50 279+75 280+00 280+25 280+50 280+75 281+00 281+25 281+50 281+75 282+00 282+25 282+50

659.0 659.0 659.11 659.1 659.13 659.06 659.2 658.93 658.79 659.4 658.65 659.6 658.62 659.7 658.93 659.43 659.8 658.94 658.67 660.0 659.7 658.71 658.86 659.5 658.97 659.00 659.1 658.94 658.80 658.7 658.62 658.5 658.4

650 652 654 656 658 660 662

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, 57,58,59,60,61,62,63

FILE NAME: HDGN:23202PP28

STATE PROJECT NUMBER	SHEET NO
8010-07-73	5,26

21ST STREET, SUPERIOR
BANKS AVE. - OGDEN AVE.
S.T.H. 35 DOUGLAS CO.

SEE TOWER AVENUE
PLAN & PROFILE SHEET

N

BEGIN CONSTRUCTION
STA. 208+00 21ST
SAWCUT REQ'D.

ASPH.

ASPH.

STA. 661+74.00=
STA. 210+00.00

ENT.

TOWER AVENUE

STM

662

MAC DONALD

+50

+60
22' LT.

208+00 21ST STREET

209+00

S 88°13'55" E

WTR

+60
22' RT.

+40

+64
35'

MAILBOX

MSO

OT LIQUOR STORE

661

ABANDONED GAS LINE

4" L.P.

WTR

INL.

211+00

212+00

+84
35'

+50
22' RT.

12" STM

INL.

+50
22' RT.

+06
35' RT.

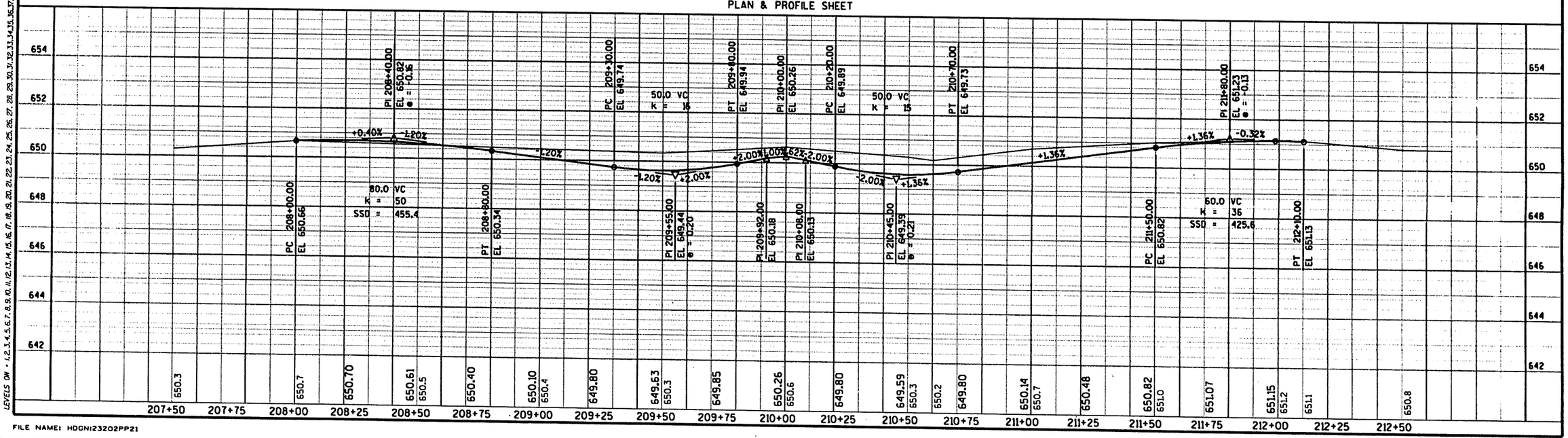
SIGN

LITTLE STORE

END CONSTRUCTION
STA. 212+10 21ST
SAWCUT REQ'D.

N 571000

SEE TOWER AVENUE
PLAN & PROFILE SHEET



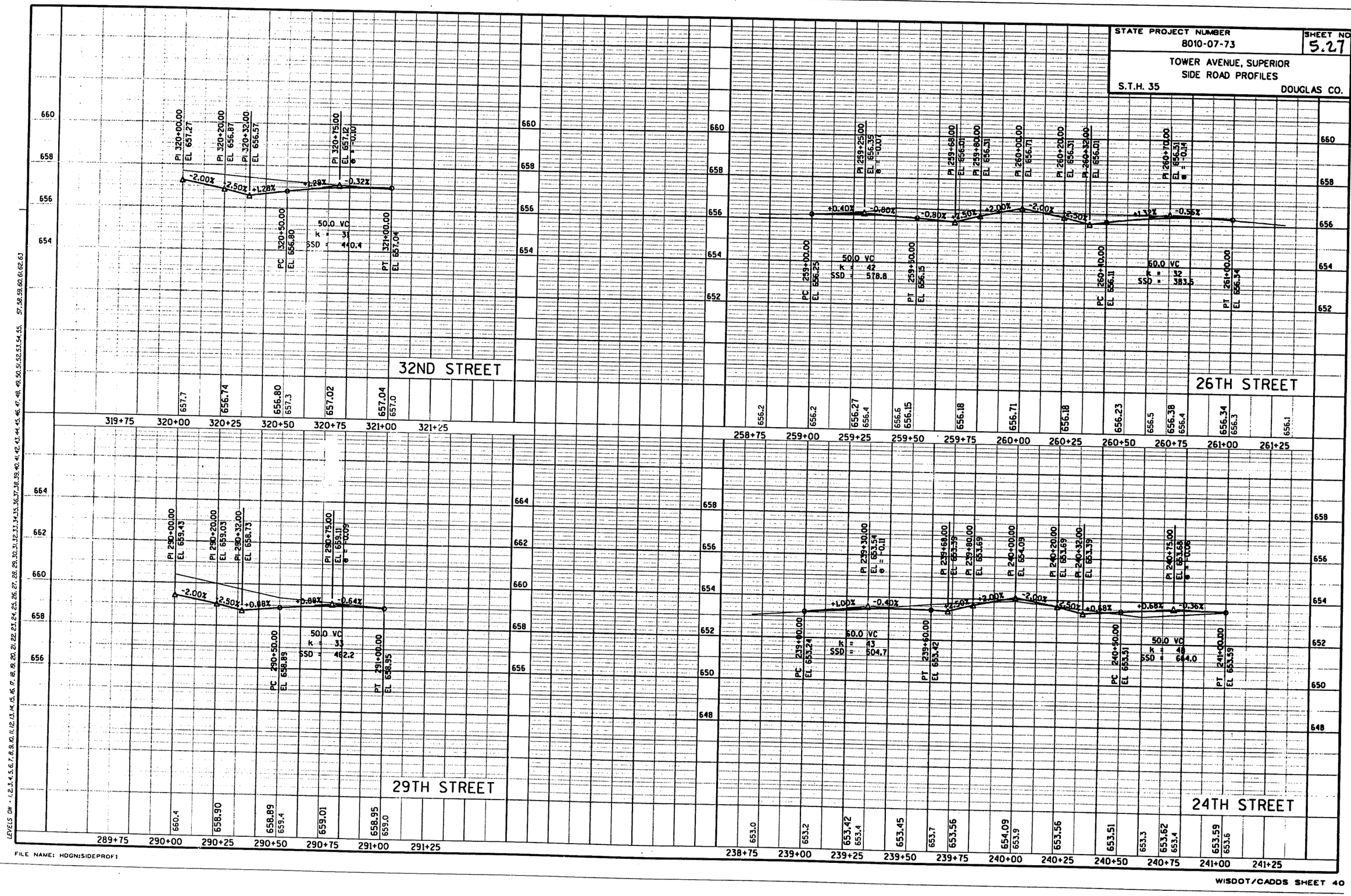
LEVELS ON • 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,51,52,53,54,55, 57,58,59,60,61,62,63

FILE NAME: HDGN:23202PP21

STATE PROJECT NUMBER
8010-07-73

SHEET NO
5.27

TOWER AVENUE, SUPERIOR
SIDE ROAD PROFILES
S.T.H. 35
DOUGLAS CO.



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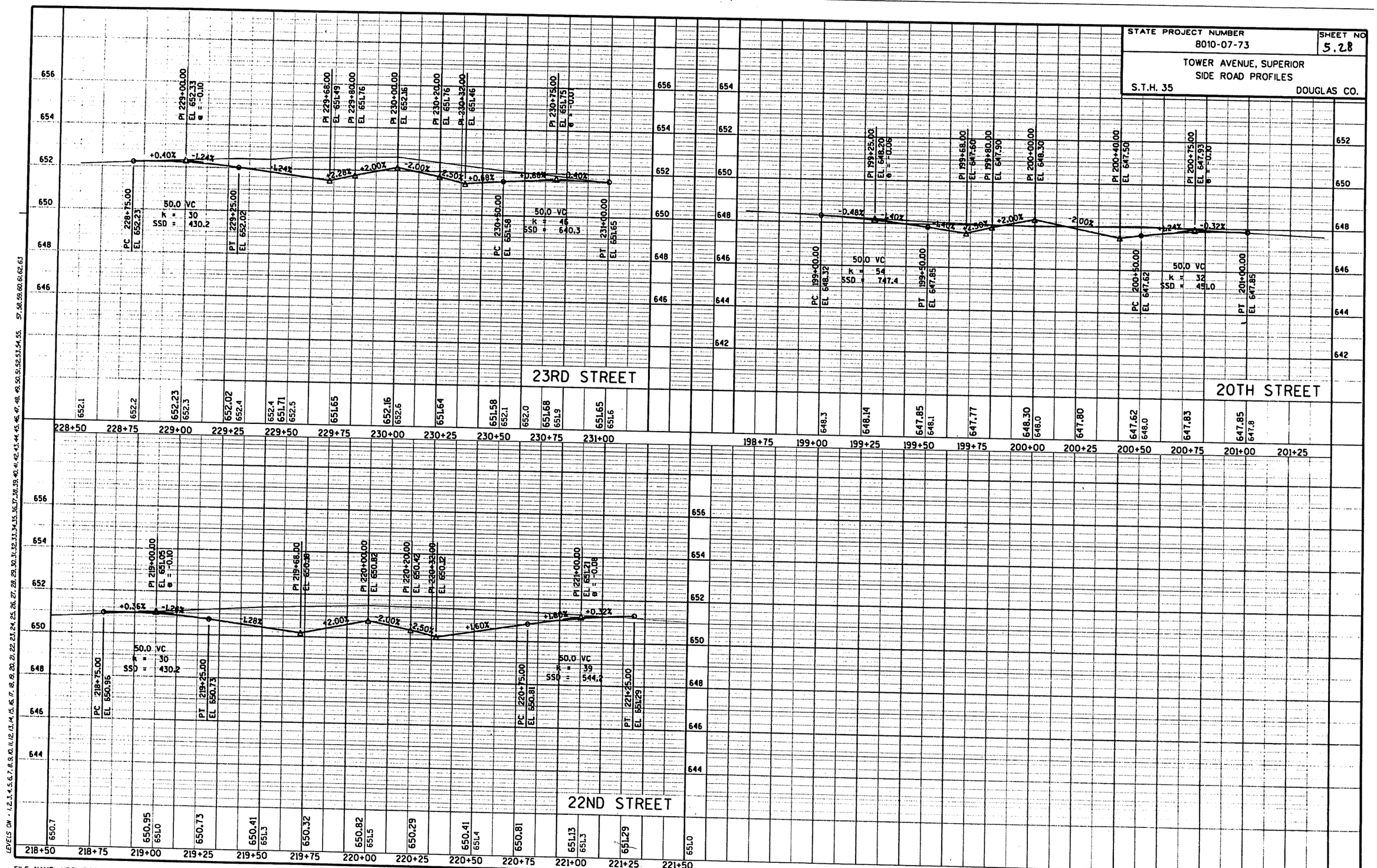
FILE NAME: HDGN:SIDEPROF1

WISDOT/CADDS SHEET 40

STATE PROJECT NUMBER 8010-07-73 | SHEET NO 5.28

TOWER AVENUE, SUPERIOR
SIDE ROAD PROFILES
S.T.H. 35 DOUGLAS CO.



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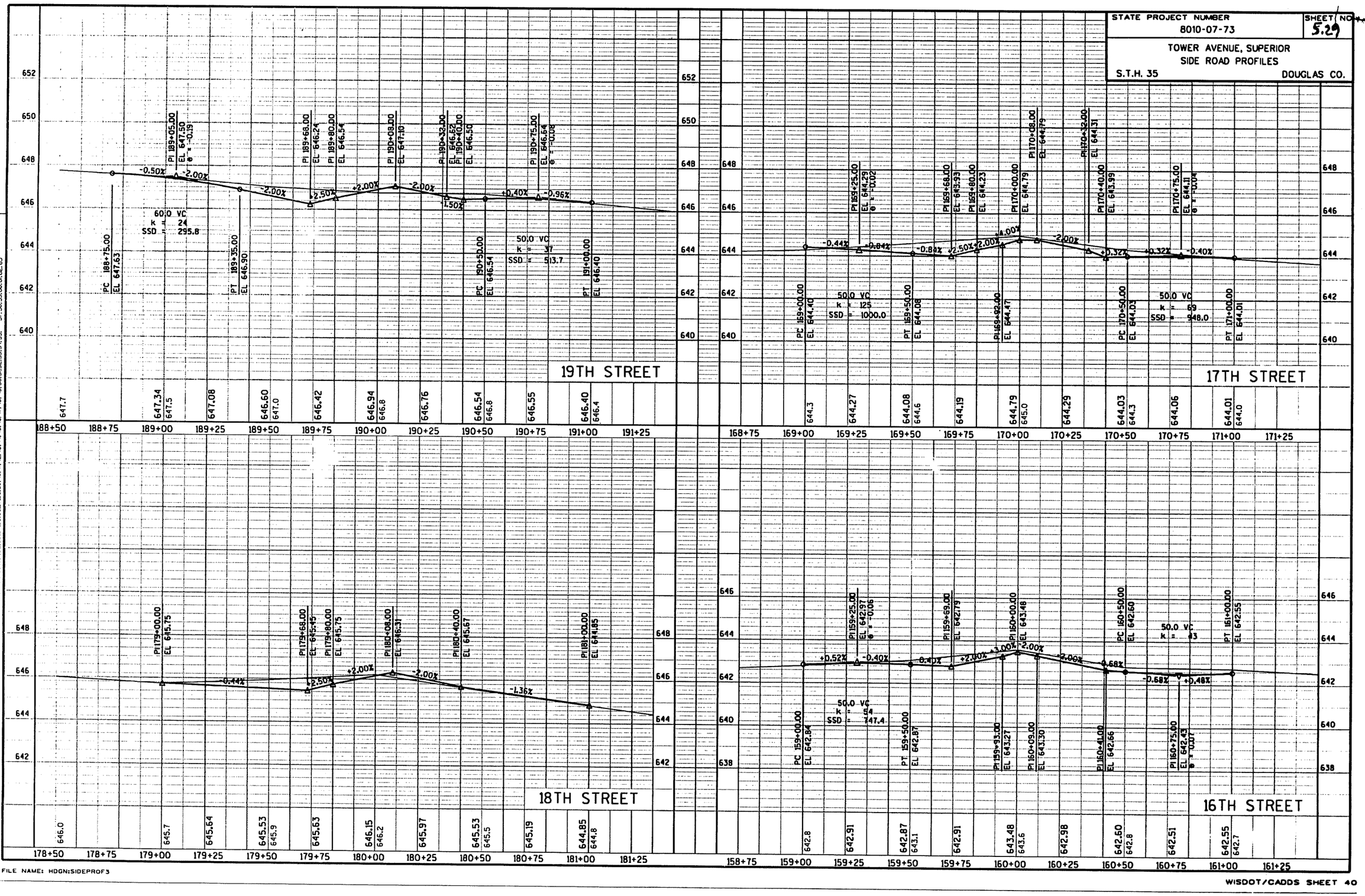
FILE NAME: HDGN:SIDEPROF2

STATE PROJECT NUMBER
8010-07-73

SHEET NO. 5.29

TOWER AVENUE, SUPERIOR
SIDE ROAD PROFILES
S.T.H. 35 DOUGLAS CO.



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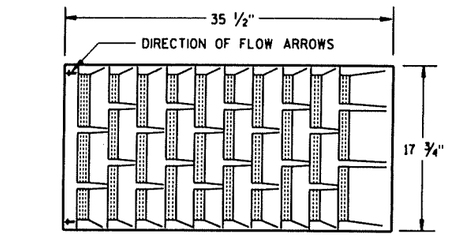
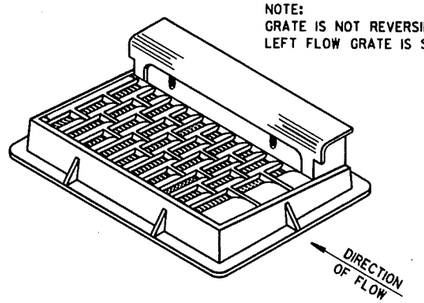
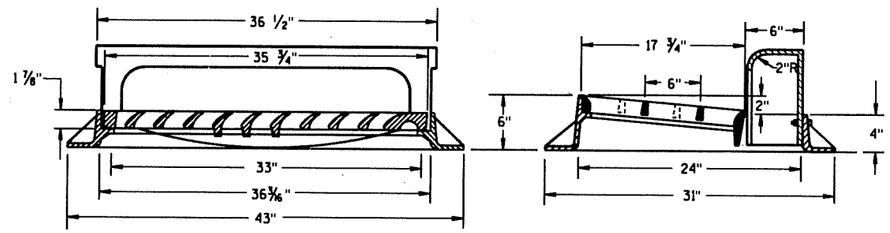
FILE NAME: HDGN:SIDEPROF3





NOTE:
GRATE IS NOT REVERSIBLE.
LEFT FLOW GRATE IS SHOWN

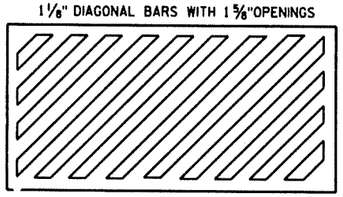
NOTE: CURB BOX HEIGHT ADJUSTABLE 6" TO 9"



TYPE "H"

(APPROXIMATE WEIGHT 420 LBS.)
FRAME..... 170 LBS.
GRATE..... 135 LBS.
CURB BOX..... 115 LBS.

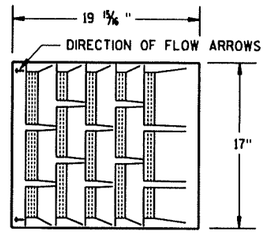
1 ⅛" DIAGONAL BARS WITH 1 ⅝"OPENINGS

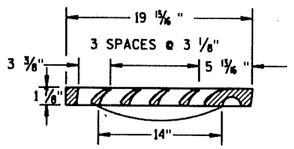


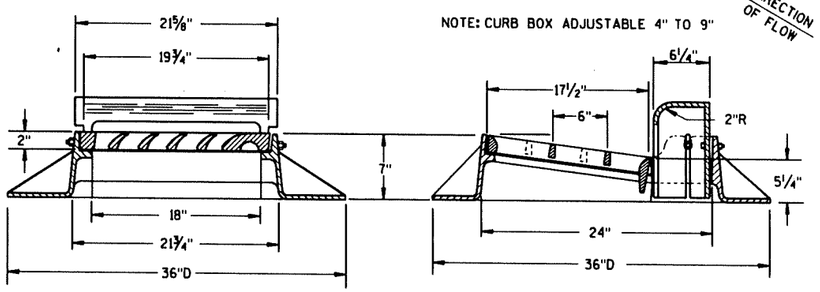
SPECIAL GRATE FOR TYPE "H" COVER

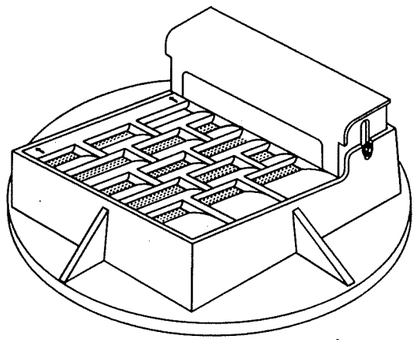
(MEASURES 35 ½" X 17 ¾" X 2")
(APPROXIMATE WEIGHT 170 LBS.)
GRATE..... 170 LBS.

(NOTED AS TYPE H-S ON DRAINAGE TABLE)









NOTE: CURB BOX ADJUSTABLE 4" TO 9"

NOTE:
GRATE IS NOT REVERSIBLE
LEFT FLOW GRATE IS SHOWN

TYPE "A"

(APPROXIMATE WEIGHT 355 LBS.)
FRAME..... 185 LBS.
GRATE..... 85 LBS.
CURB BOX..... 85 LBS.

GENERAL NOTES

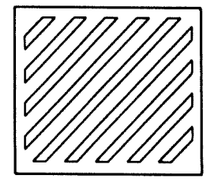
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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.

ROUND FRAMES AND COVERS SHALL HAVE CONTINUOUSLY MACHINED BEARING SURFACES TO PREVENT ROCKING AND RATTLING.

THE ACTUAL WEIGHT OF COVERS MAY VARY WITHIN 5 PERCENT, PLUS OR MINUS, OF THE APPROXIMATE WEIGHT.

1" DIAGONAL BARS WITH 1½" OPENINGS



SPECIAL GRATE FOR TYPE "A" COVER

(MEASURES 19 7/8" X 17" X 1 15/16 "
GRATE..... 85 LBS.

(NOTED AS TYPE A-S ON DRAINAGE TABLE)

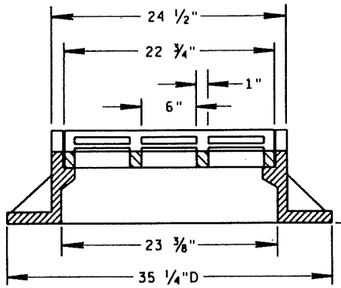
INLET COVERS

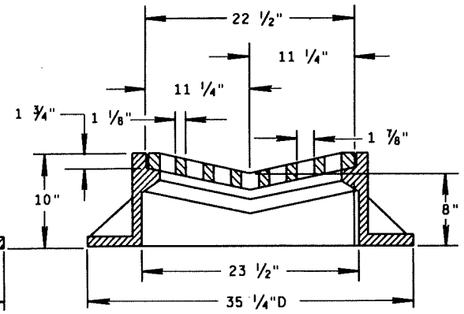
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

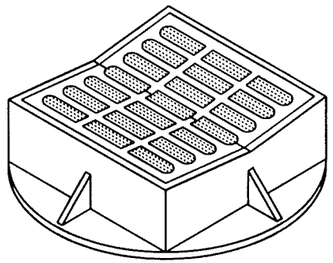
APPROVED
08/07/85
DATE
CHIEF ROADWAY DESIGN ENGINEER
FHWA

S.D.D. 8 A 5-11a

S.D.D. 8 A 5-11a



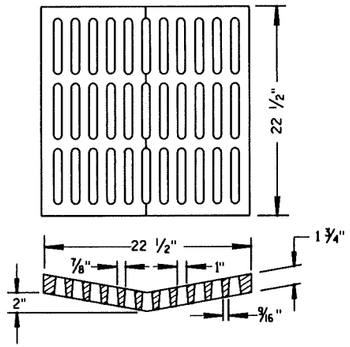




TYPE "B"

(APPROXIMATE WEIGHT 395 LBS.)

FRAME..... 285 LBS.
GRATE..... 110 LBS.

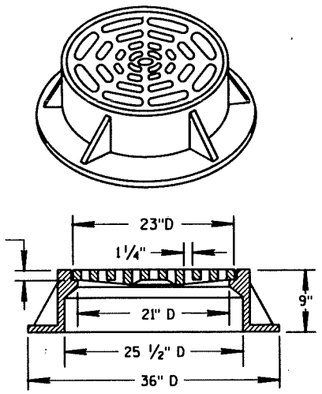


ALTERNATIVE GRATE FOR FOR TYPE "B" COVER

(APPROXIMATE GRATE WEIGHT 125 LBS.)
GRATE.....125 LBS.

USE WHERE PEDESTRIAN OR BICYCLE TRAFFIC IS POSSIBLE.

NOTED AS TYPE B-A ON THE DRAINAGE TABLE



TYPE "C"

(APPROXIMATE WEIGHT 340 LBS.)

FRAME..... 235 LBS.
GRATE..... 105 LBS.

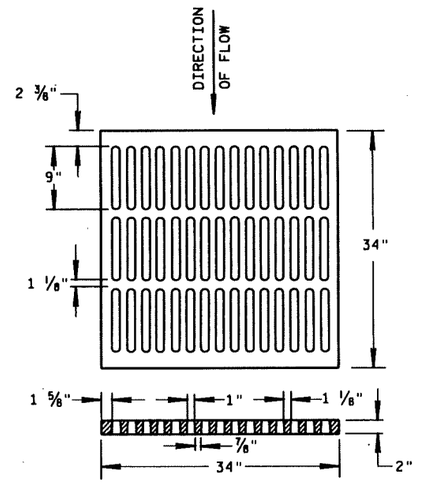
GENERAL NOTES

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.

ROUND FRAMES AND COVERS SHALL HAVE CONTINUOUSLY MACHINED BEARING SURFACES TO PREVENT ROCKING AND RATTLING.

THE ACTUAL WEIGHT OF COVERS MAY VARY WITHIN 5 PERCENT, PLUS OR MINUS, OF THE APPROXIMATE WEIGHT.

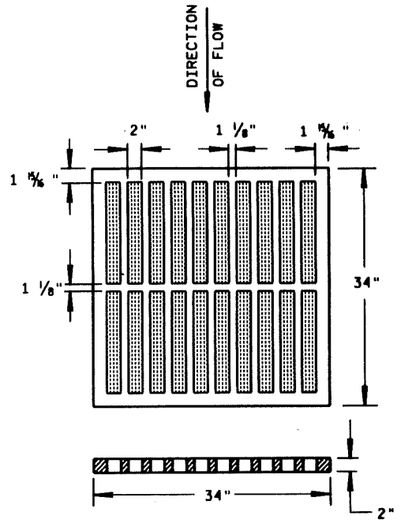


ALTERNATIVE TYPE "MS"

(APPROXIMATE GRATE WEIGHT 365 LBS.)
GRATE.....365 LBS.

USE WHERE PEDESTRIAN OR BICYCLE TRAFFIC IS PERMITTED

NOTED AS TYPE MS-A ON THE DRAINAGE TABLE

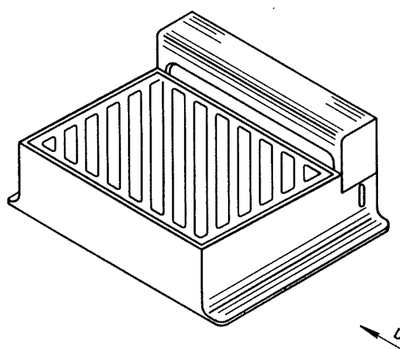


TYPE "MS"

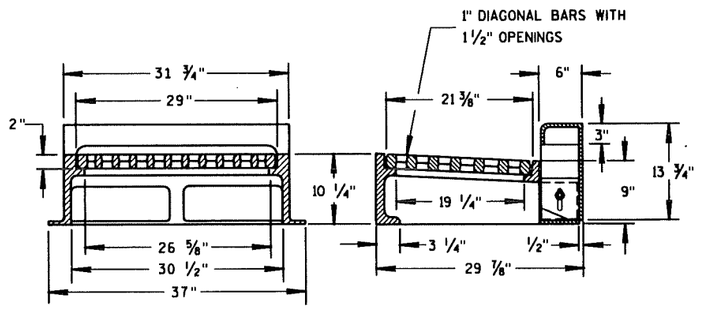
(APPROXIMATE GRATE WEIGHT 270 LBS.)
GRATE.....270 LBS.

USE ON FREEWAYS AND EXPRESSWAYS

NOTED AS TYPE MS ON DRAINAGE TABLE



DIAGONAL SLOTS, SHALL BE ORIENTED TO THE DIRECTION OF FLOW AS ILLUSTRATED. GRATES ARE MANUFACTURED TO BE REVERSIBLE.



NOTE: CURB BOX HEIGHT ADJUSTABLE 6" TO 9"

TYPE "WM"

(APPROXIMATE WEIGHT 670 LBS.)

FRAME..... 360 LBS.
GRATE..... 160 LBS.
CURB BOX..... 150 LBS.

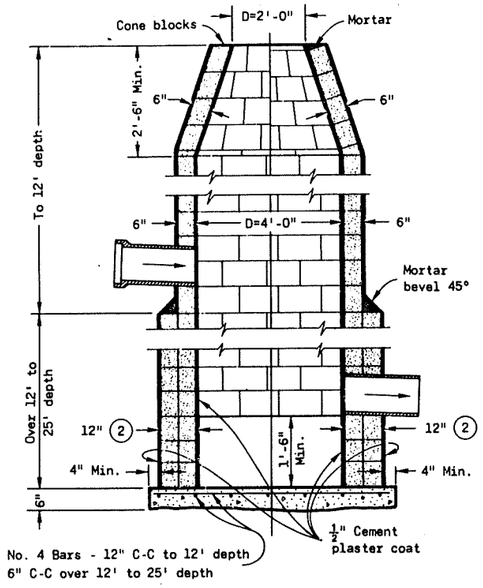
INLET COVERS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

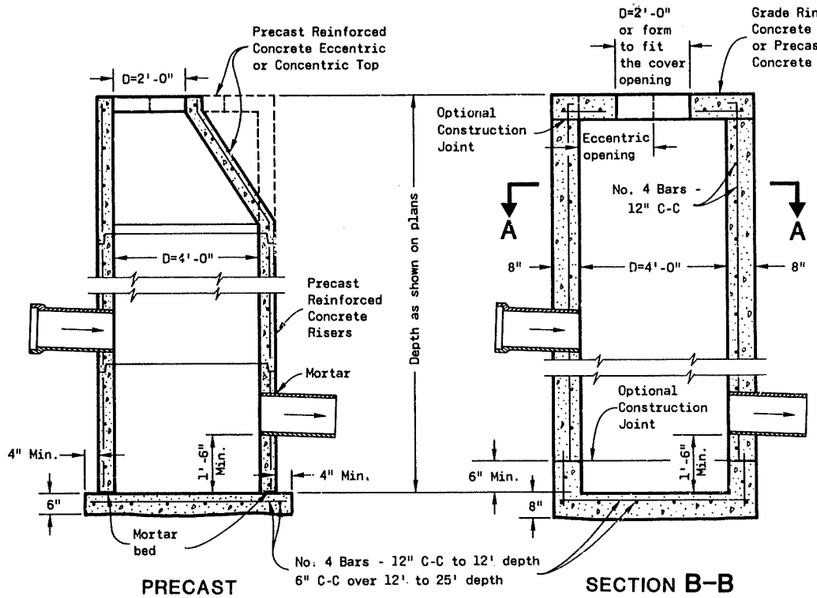
APPROVED 08/07/85 (DATE)
Roy L. Thompson
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

S.D.D. 8 A 5-11b

S.D.D. 8 A 5-11b

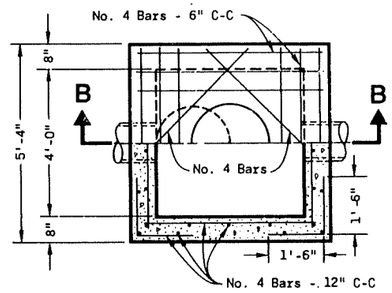


CONCRETE BLOCK

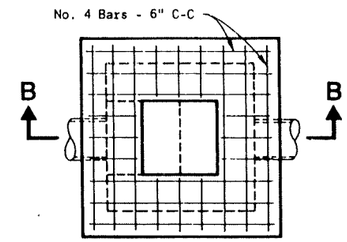


PRECAST REINFORCED CONCRETE

SECTION B–B REINFORCED CONCRETE



HALF SECTION A–A



PLAN VIEW SHOWING ALTERNATE OPENING

CATCH BASINS 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 drainage structures are designated on the plans as "Manholes 1-C", "Catch Basins 1-D", "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 of Granular Backfill. This bedding shall be compacted and provide uniform support for the entire area of the base.

Precast Reinforced Concrete Cone Tops (Eccentric or Concentric) or Precast Reinforced Concrete Flat Slab Tops may be used on concrete block structures. The Cone Tops shall be installed on a bed of mortar.

Eccentric Cone Tops may be used on all structures, and Concentric Cone Tops shall be used only on structures 5 feet or less in depth, unless otherwise directed by the Engineer.

Steps meeting the following requirements shall be installed in all structures over 5 feet in depth: 16 inch C-C maximum spacing; project a minimum clear distance of 4 inches from the wall at the point of embedment; minimum length of 10 inches, minimum wall embedment of 3 inches; and be capable of supporting a concentrated load of 300 lbs. Ferrous metal steps not painted or treated to resist corrosion shall have a minimum cross sectional dimension of 1 inch.

Solid Aluminum steps shall have a minimum cross sectional dimension of 0.75 inch. Aluminum surfaces to be embedded in concrete shall be given one coat of suitable quality paint, such as zinc chromate primer conforming to federal specification TT-P-645 or equivalent. Steps of approved Polypropylene plastic coated reinforcement bar are acceptable.

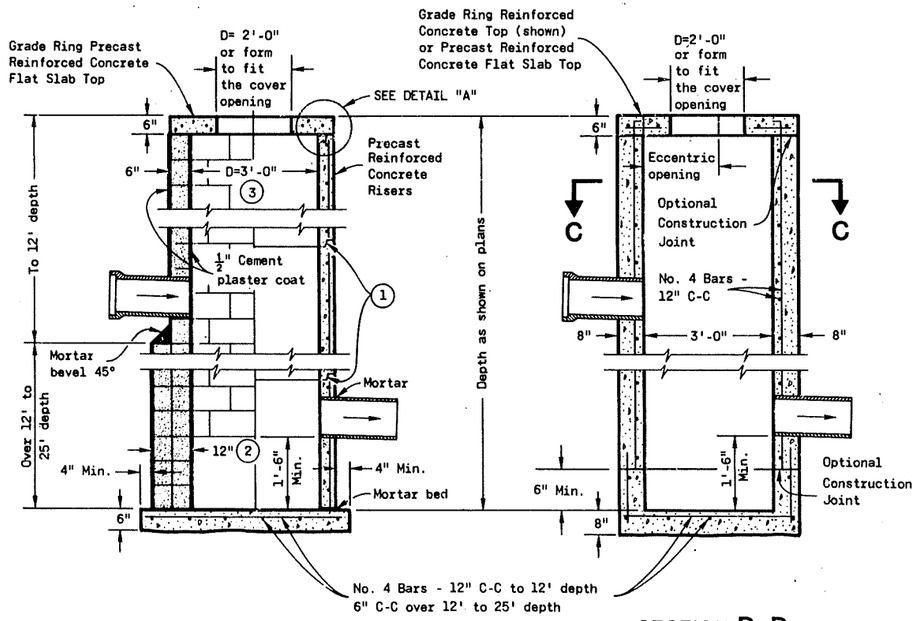
All bar steel reinforcement shall be embedded 2 inches clear unless otherwise shown or noted.

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

(1) Precast Reinforced Concrete Risers shall be placed with the tongue down when grade rings are used for the slab top.

(2) 2 courses 6" block.

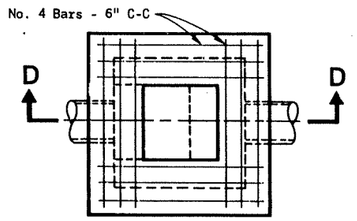
(3) When the connecting pipes are 24" or larger the Precast Catch Basin may be increased to 42" dia.

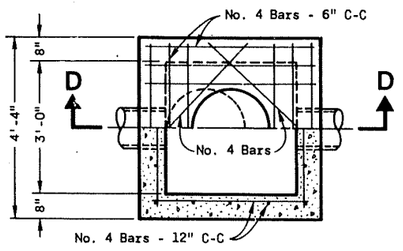


CONCRETE BLOCK

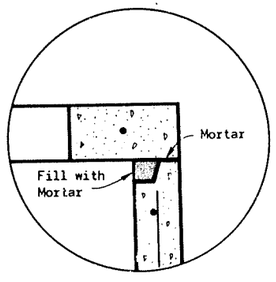
PRECAST REINFORCED CONCRETE

SECTION D–D REINFORCED CONCRETE





HALF SECTION C–C



DETAIL "A"

CATCH BASINS TYPE 2

CATCH BASINS TYPE 1 & 2

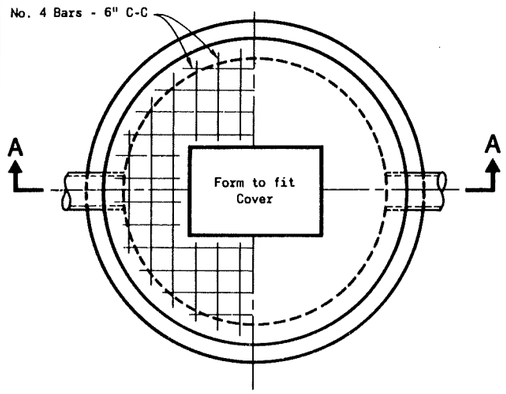
State of Wisconsin
Department of Transportation

APPROVED 4-13-82

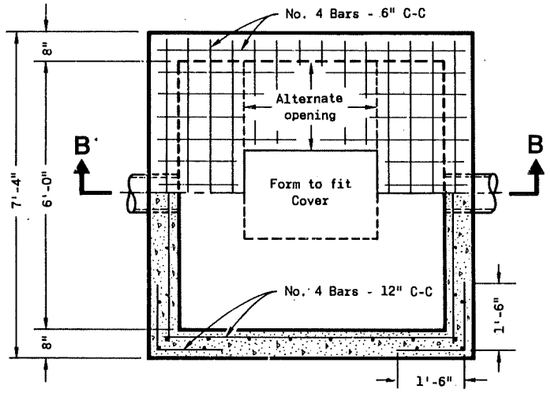
FHWA

S.D.D. 8 A 6-3

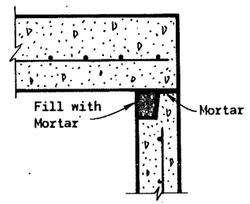
S.D.D. 8 A 6-3



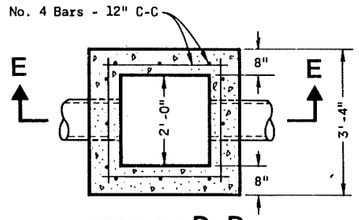
PLAN VIEW



HALF SECTION C-C



DETAIL "A"



SECTION D-D

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

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.

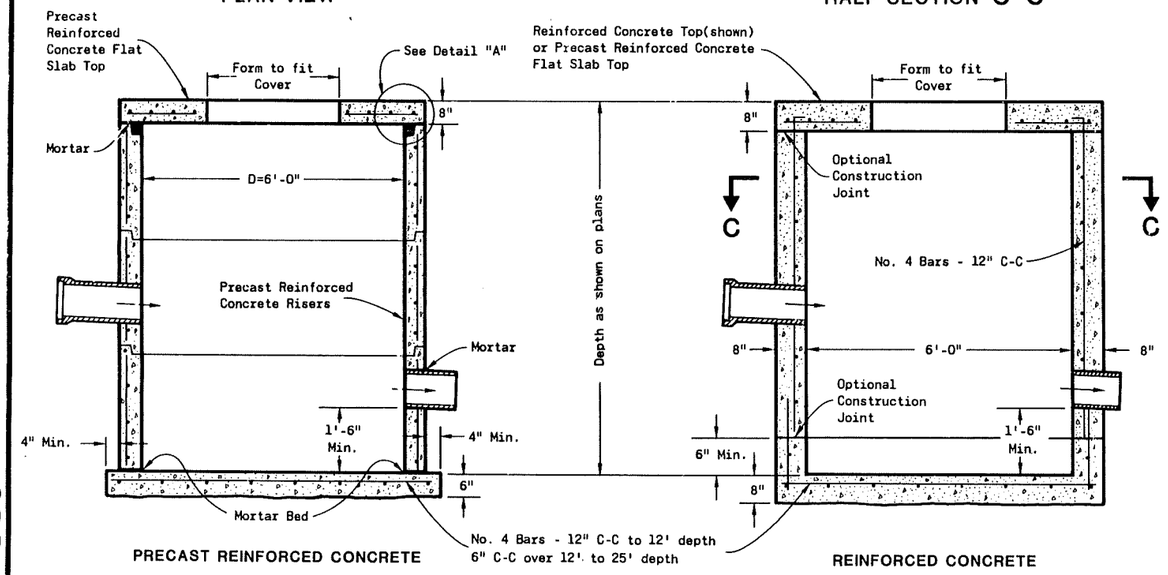
Steps meeting the following requirements shall be installed in all structures over 5 feet in depth: 16 inch C-C maximum spacing; project a minimum clear distance of 4 inches from the wall at the point of embedment; minimum length of 10 inches; minimum wall embedment of 3 inches; and be capable of supporting a concentrated load of 300 lbs. Ferrous metal steps not painted or treated to resist corrosion shall have a minimum cross sectional dimension of 1 inch.

Solid Aluminum steps shall have a minimum cross sectional dimension of 0.75 inch. Aluminum surfaces to be embedded in concrete shall be given one coat of suitable quality paint, such as zinc chromate primer conforming to federal spacification TT-P-645 or equivalent. Steps of approved Polypropylene plastic coated reinforcement bar will be acceptable.

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.

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



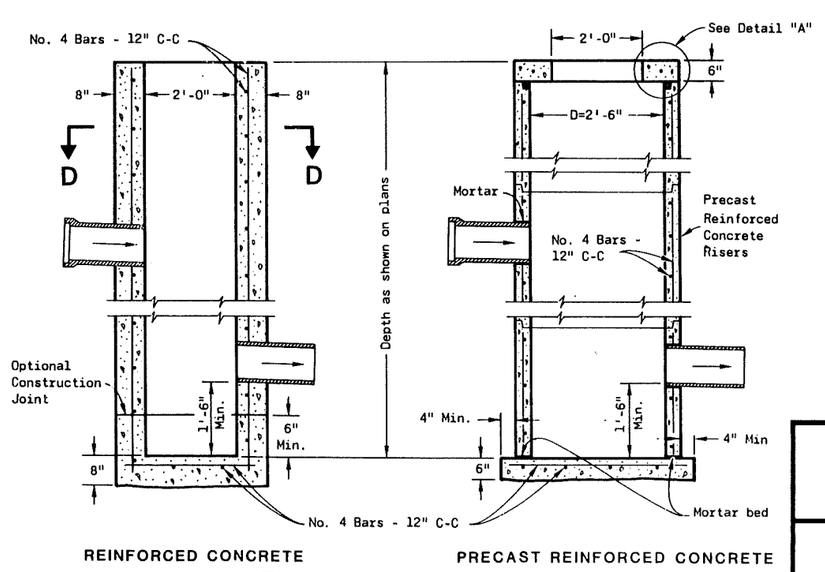
PRECAST REINFORCED CONCRETE

SECTION A-A

REINFORCED CONCRETE

SECTION B-B

CATCH BASINS TYPE 5



REINFORCED CONCRETE

SECTION E-E

PRECAST REINFORCED CONCRETE

CATCH BASINS TYPE 3

CATCH BASINS TYPE 3 & 5

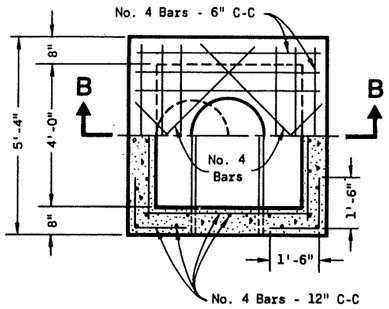
State of Wisconsin
Department of Transportation

APPROVED
4-13-82

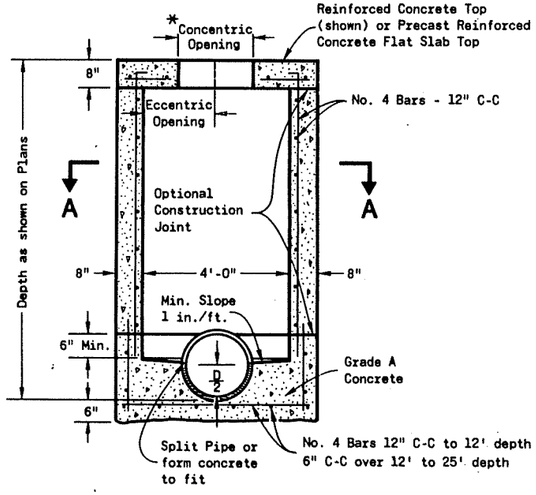
FHWA

S.D.D. 8 A 7-3

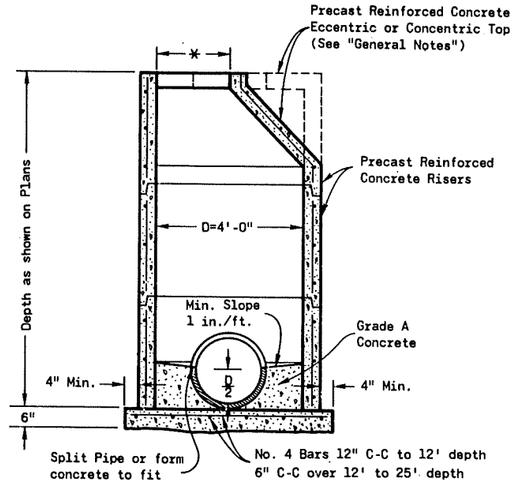
S.D.D. 8 A 7-3



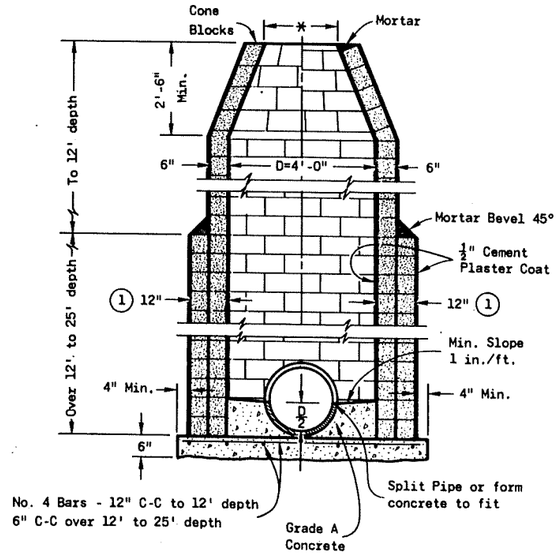
HALF SECTION **A-A**



SECTION **B-B**
REINFORCED CONCRETE



PRECAST REINFORCED CONCRETE



CONCRETE BLOCK

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 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 Cone Tops (Eccentric or Concentric) may be used on concrete block structures. The Cone Tops shall be installed on a bed of mortar.

Eccentric Cone Tops may be used on all structures, and Concentric Cone Tops shall be used only on structures 5 feet or less in depth, unless otherwise directed by the Engineer.

Steps meeting the following requirements shall be installed in all structures over 5 feet in depth: 16 inch C-C maximum spacing; project a minimum clear distance of 4 inches from the wall at the point of embedment; minimum length of 10 inches; minimum wall embedment of 3 inches; and be capable of supporting a concentrated load of 300 lbs. Ferrous metal steps not painted or treated to resist corrosion shall have a minimum cross sectional dimension of 1 inch.

Solid Aluminum steps shall have a minimum cross sectional dimension of 0.75 inch. Aluminum surfaces to be embedded in concrete shall be given one coat of suitable quality paint, such as zinc chromate primer conforming to Federal Specification TT-P-645 or equivalent. Steps of approved Polypropelene plastic coated reinforcement bar will be acceptable.

All bar steel reinforcement shall be embedded 2 inches clear unless otherwise shown or noted.

Precast Reinforced Concrete Risers may be placed with tongue up or down.

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

* Use 2'-0" diameter opening with Type "C", "L" and "J" covers, or 3'-0" diameter with Type "K" and "M" covers.

(1) 2 courses 6" block.

MANHOLES TYPE 1

State of Wisconsin
Department of Transportation

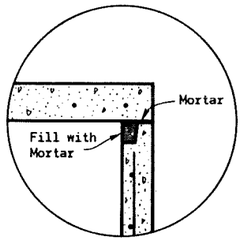
APPROVED
4-13-82
DATE

FHWA

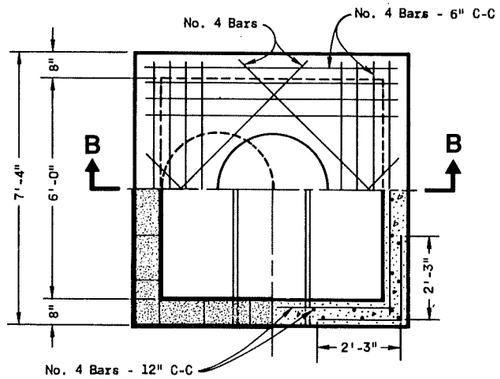
S.D.D. 8 B 6-3

MANHOLES TYPE 1

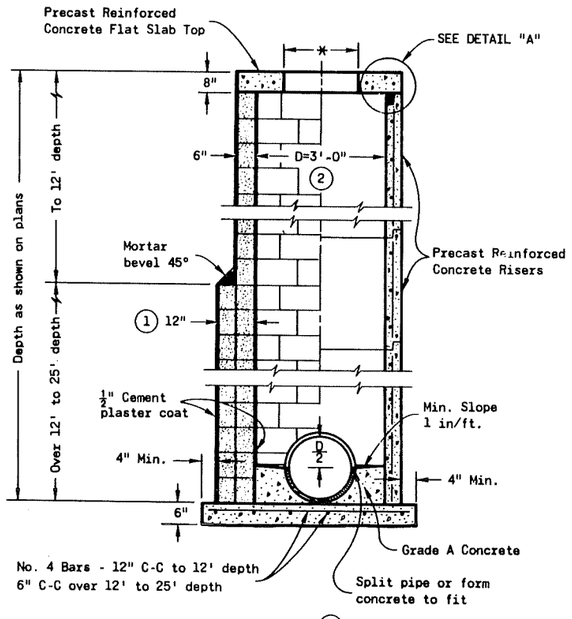
S.D.D. 8 B 6-3



DETAIL "A"

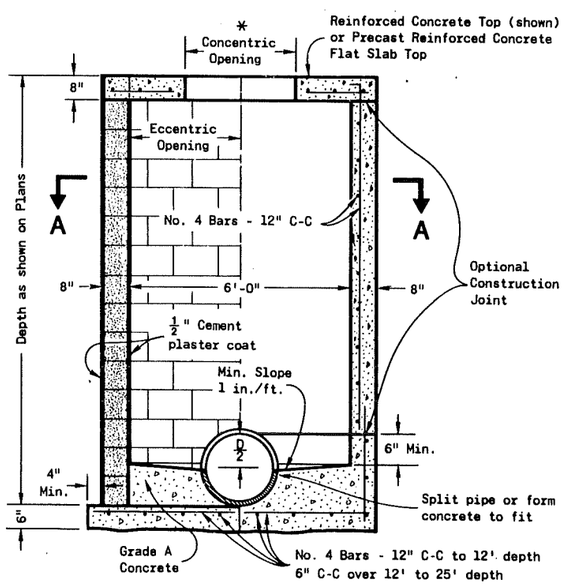


HALF SECTION A-A



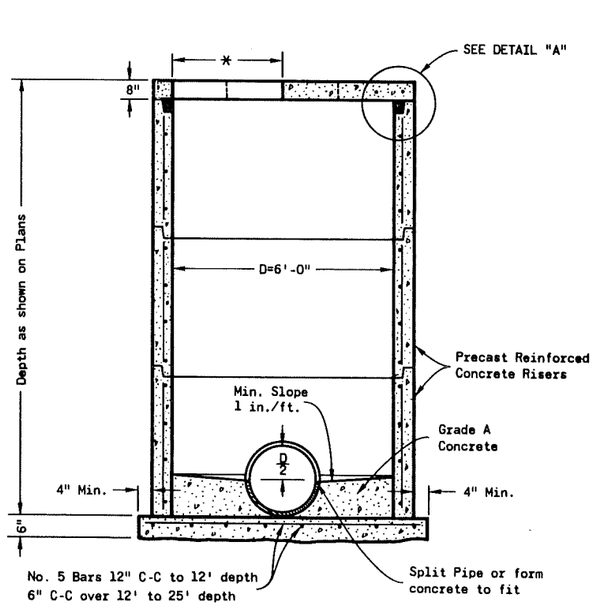
CONCRETE BLOCK ② PRECAST REINFORCED CONCRETE

MANHOLES TYPE 2



SECTION B-B

CONCRETE BLOCK REINFORCED CONCRETE



PRECAST REINFORCED CONCRETE

MANHOLES TYPE 3

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 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" 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.

Steps meeting the following requirements shall be installed in all structures over 5 feet in depth: 16 inch C-C maximum spacing; project a minimum clear distance of 4 inches from the wall at the point of embedment; minimum length of 10 inches; minimum wall embedment of 3 inches; and capable of supporting a concentrated load of 300 lbs. Ferrous metal steps not painted or treated to resist corrosion shall have a minimum cross sectional dimension of 1 inch.

Solid Aluminum steps shall have a minimum cross sectional dimension of 0.75 inch. Aluminum surfaces to be embedded in concrete shall be given one coat of suitable quality paint, such as zinc chromate primer conforming to federal specification TT-P-645 or equivalent. Steps of approved Polypropylene plastic coated reinforcement bar are acceptable.

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.

All precast inlet units shall conform to the pertinent requirements of AASHTO Designation M 199.

* Use 2'-0" diameter opening with type "C", "L", and "J" covers, or 3'-0" diameter with type "K" and "M" covers.

(1) 2 courses 6" block.

(2) When connecting pipes are 24" or larger the Precast Manholes may be increased to 42" diameter.

MANHOLES TYPE 2 & 3

State of Wisconsin
Department of Transportation

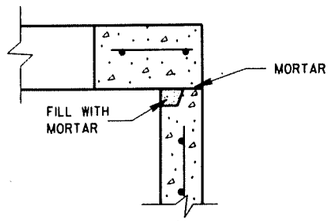
APPROVED 4-13-82 DATE
FHWA

CHIEF DESIGN ENGINEER

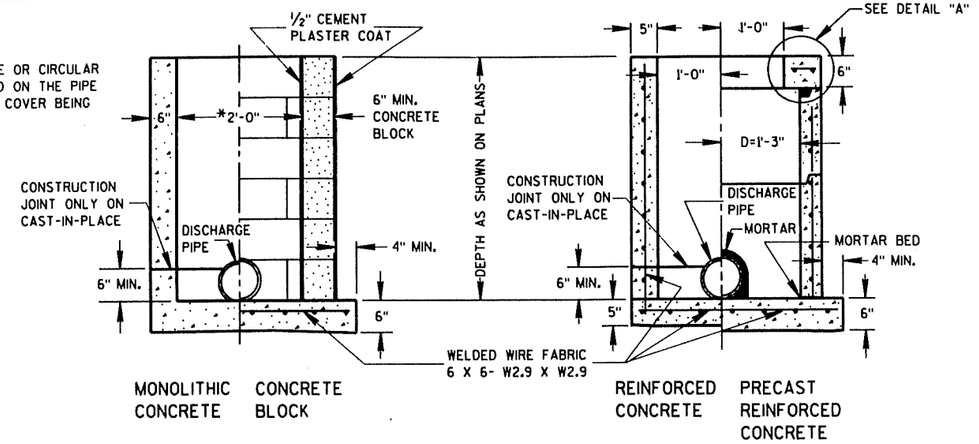
S.D.D. 8 B 7-3

S.D.D. 8 B 7-3

*SELECTION OF SQUARE OR CIRCULAR DESIGN WILL BE BASED ON THE PIPE SIZES AND THE INLET COVER BEING UTILIZED



DETAIL "A"



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 OF GRANULAR BACKFILL. THIS BEDDING SHALL BE COMPACTED AND PROVIDE UNIFORM SUPPORT FOR THE ENTIRE AREA OF THE BASE.

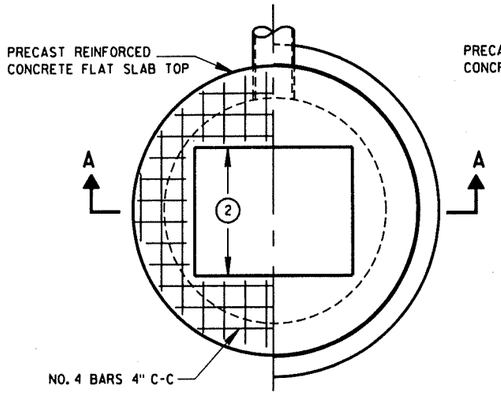
PRECAST REINFORCED CONCRETE FLAT SLAB TOPS MAY BE USED ON THE STRUCTURES. THE TOPS SHALL BE INSTALLED ON A BED OF MORTAR.

ALL BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

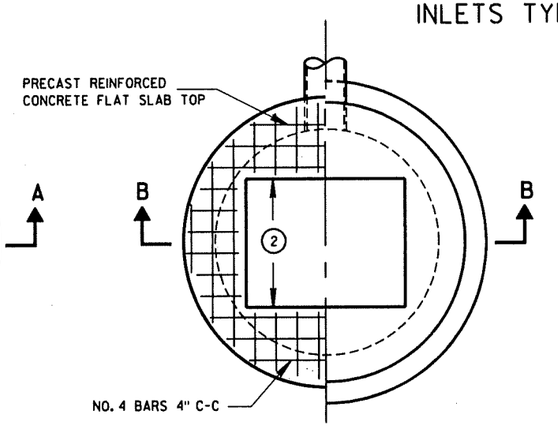
PRECAST REINFORCED CONCRETE RISERS SHALL BE PLACED WITH TONGUE DOWN.

(1) USE 2'-6" OPENING FOR TYPE 2 INLETS, 3'-0" OPENING FOR TYPE 3 INLETS, AND 2'-11" FOR TYPE 4 INLETS.

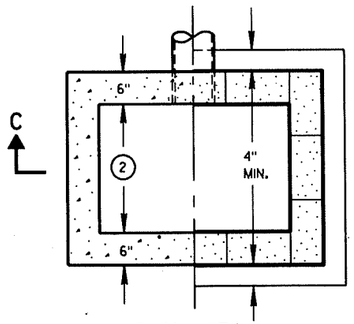
(2) USE 2'-0" OPENING FOR TYPE 1, 2 & 3 INLETS, 2'-6½" OPENING FOR TYPE 4 INLETS.



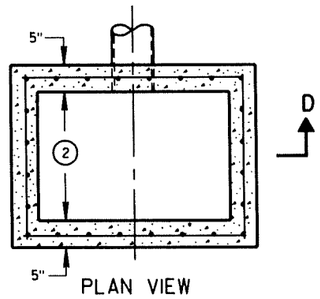
PLAN VIEW



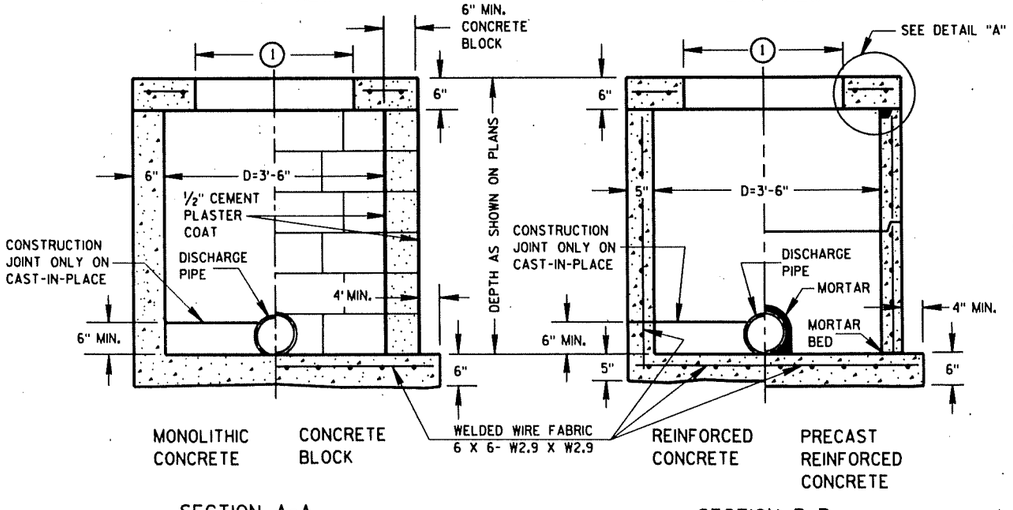
PLAN VIEW



PLAN VIEW

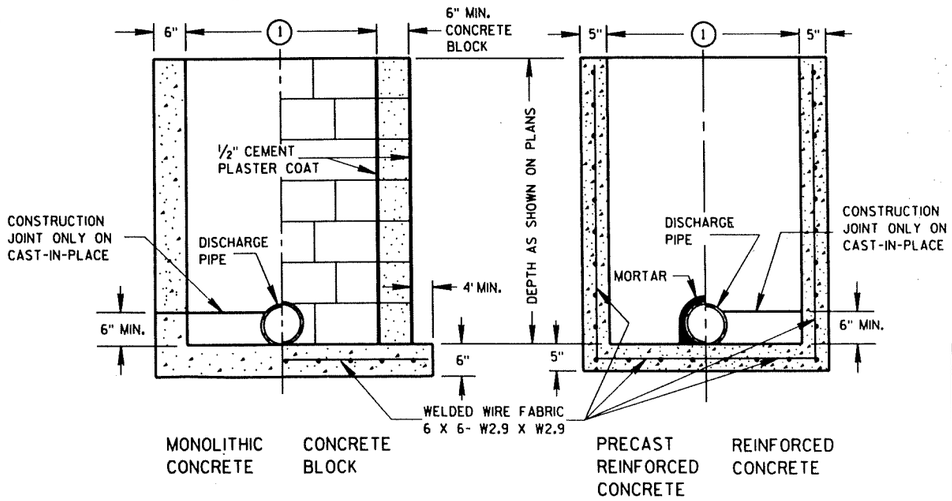


PLAN VIEW



SECTION A-A

SECTION B-B



SECTION C-C

SECTION D-D

INLETS TYPE 2, 3 & 4

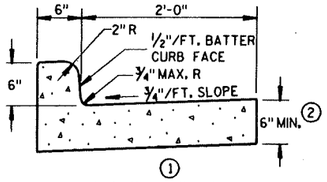
INLETS TYPE 1, 2, 3 & 4

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

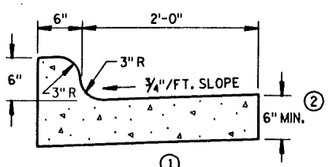
APPROVED 8/26/94 DATE
Roy L. Thiesen
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

S.D.D. 8 C 1-5

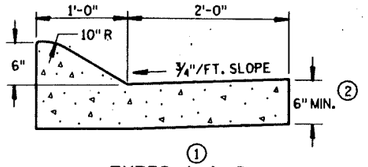
S.D.D. 8 C 1-5



TYPES A & D

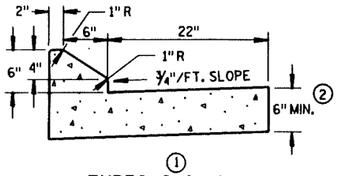


TYPES K & L

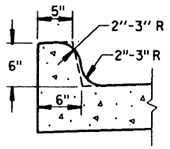


TYPES A & D

CONCRETE CURB & GUTTER 36"

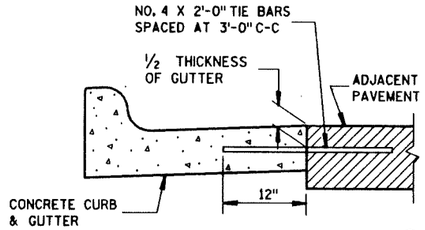


TYPES G & J



OPTIONAL CURB SHAPE FOR TYPES K & L

CONCRETE CURB & GUTTER 30"



TYPICAL TIE BAR LOCATION

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.

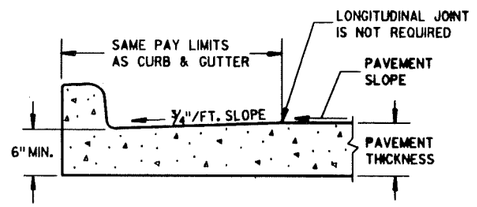
JOINTS IN INTEGRAL CURB & GUTTER SHALL BE SEALED TO THE FACE OF CURB WITH THE SAME SEALANT SPECIFIED FOR THE PAVEMENT JOINT. THE COST OF FURNISHING AND INSTALLING THIS SEALANT SHALL BE INCIDENTAL TO THE ITEM CONCRETE CURB & GUTTER.

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

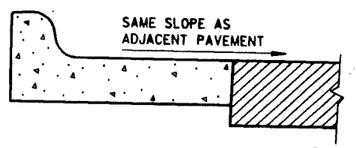
(1) TIE BARS ARE REQUIRED FOR CURB AND GUTTER TYPES A, G AND K.

(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.

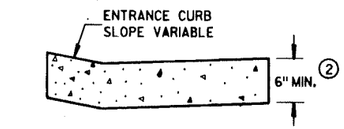


PARTIAL SECTION OF PAVEMENT WITH INTEGRAL CURB & GUTTER



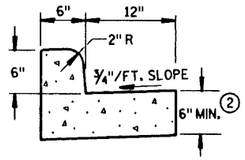
REVERSE SLOPE GUTTER (3)

(TYPICAL FOR ALL CURB & GUTTER TYPES)



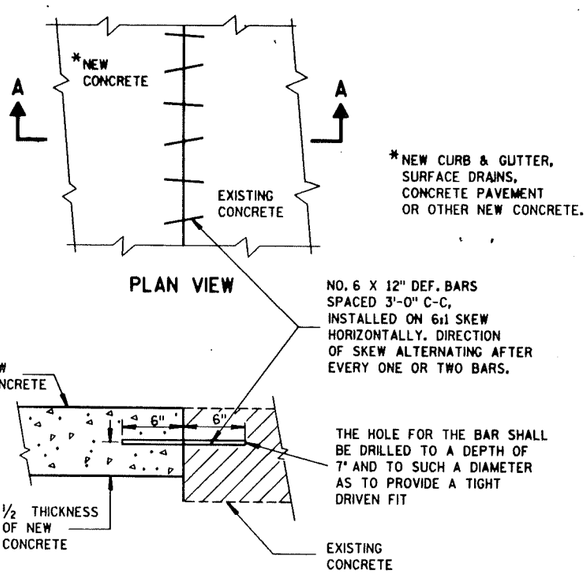
DRIVEWAY ENTRANCE CURB

(WHEN DIRECTED BY THE ENGINEER)



TYPES A & D

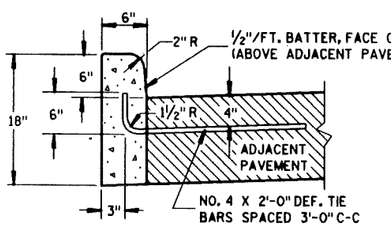
CONCRETE CURB & GUTTER 18"



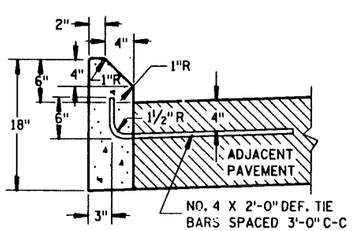
PLAN VIEW

SECTION A-A

PAVEMENT TIES



TYPES A & D



TYPES G & J

CONCRETE CURB

CONCRETE CURB, CONCRETE CURB & GUTTER AND PAVEMENT TIES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

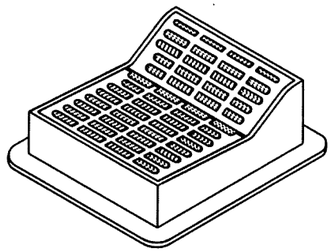
APPROVED
10-23-86
DATE

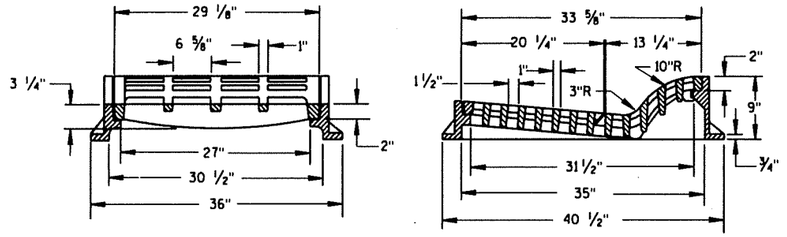
STATE DESIGN ENGINEER FOR HWYS

FHWA

S.D.D. 8 D 1-11

S.D.D. 8 D 1-11



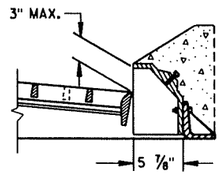


TYPE "F"

(APPROXIMATE WEIGHT 645 LBS.)

FRAME.....300 LBS.
GRATE.....165 LBS.
GRATE.....180 LBS.

USE WITH CONCRETE CURB & GUTTER, 36 INCH.



ALTERNATIVE CURB BOX FOR TYPE "HM" COVER

(APPROXIMATE WEIGHT 60 LBS.)
CURB BOX.....60 LBS.

USE WITH TYPES G & J CONCRETE CURB & GUTTER, 30 INCH

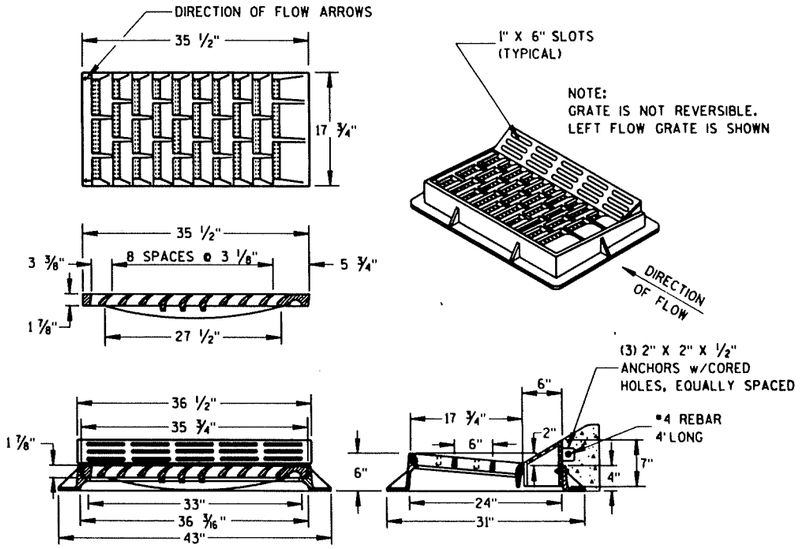
NOTED AS TYPE HM-GJ ON DRAINAGE TABLE

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 INLET COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

THE ACTUAL WEIGHT OF COVERS MAY VARY WITHIN 5 PERCENT, PLUS OR MINUS, OF THE APPROXIMATE WEIGHT.

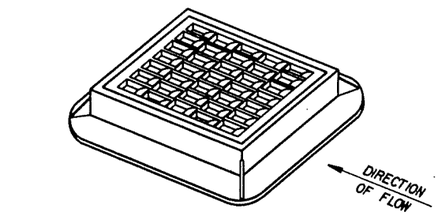


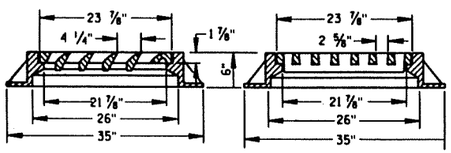
TYPE "HM"

(APPROXIMATE WEIGHT 395 LBS.)
FRAME.....170 LBS.
GRATE.....135 LBS.
CURB BOX.....90 LBS.

USE WITH CONCRETE CURB & GUTTER, 36 INCH.

NOTE:
SPECIAL GRATE FOR THE TYPE "H" COVER MAY ALSO BE USED FOR THE TYPE "HM" COVER
NOTED AS TYPE HM-S ON DRAINAGE TABLE

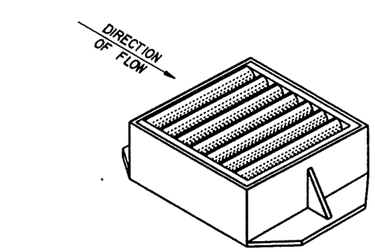


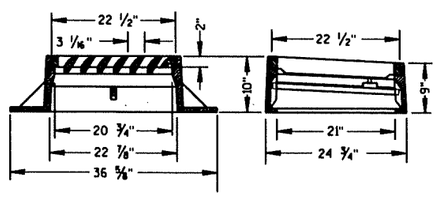


TYPE "S"

(APPROXIMATE WEIGHT 400 LBS.)

FRAME.....245 LBS.
GRATE.....155 LBS.





TYPE "V"

(APPROXIMATE WEIGHT 405 LBS.)

FRAME.....270 LBS.
GRATE.....130 LBS.
SAFETY BAR.....5 LBS.

INLET COVERS

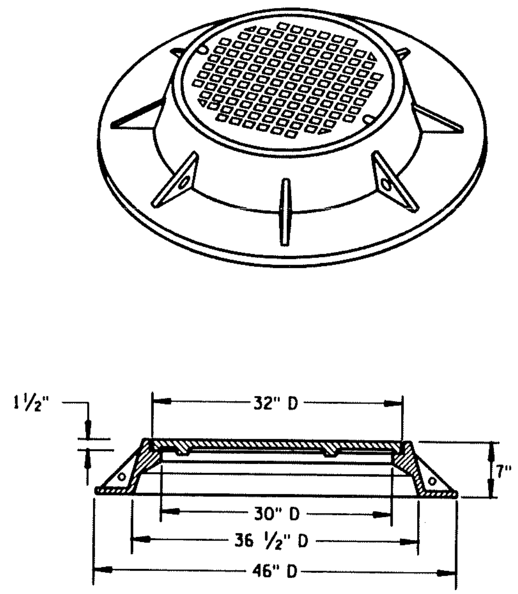
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED 08/07/85 (DATE) Roy L. Thinesen CHIEF ROADWAY DESIGN ENGINEER

FHWA

S.D.D. 8 A 5-11c

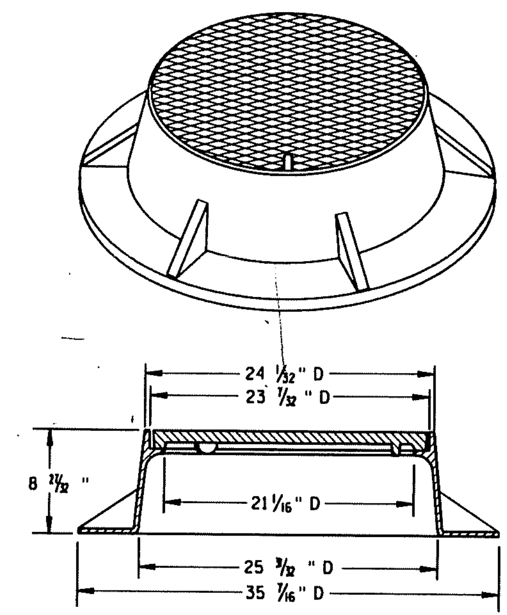
S.D.D. 8 A 5-11c



TYPE "K"

(APPROXIMATE WEIGHT 535 LBS.)

FRAME.......... 330 LBS.
LID............ 205 LBS.



TYPE "J"

(APPROXIMATE WEIGHT 255 LBS.)

FRAME.............. 140 LBS.
LID................ 115 LBS.

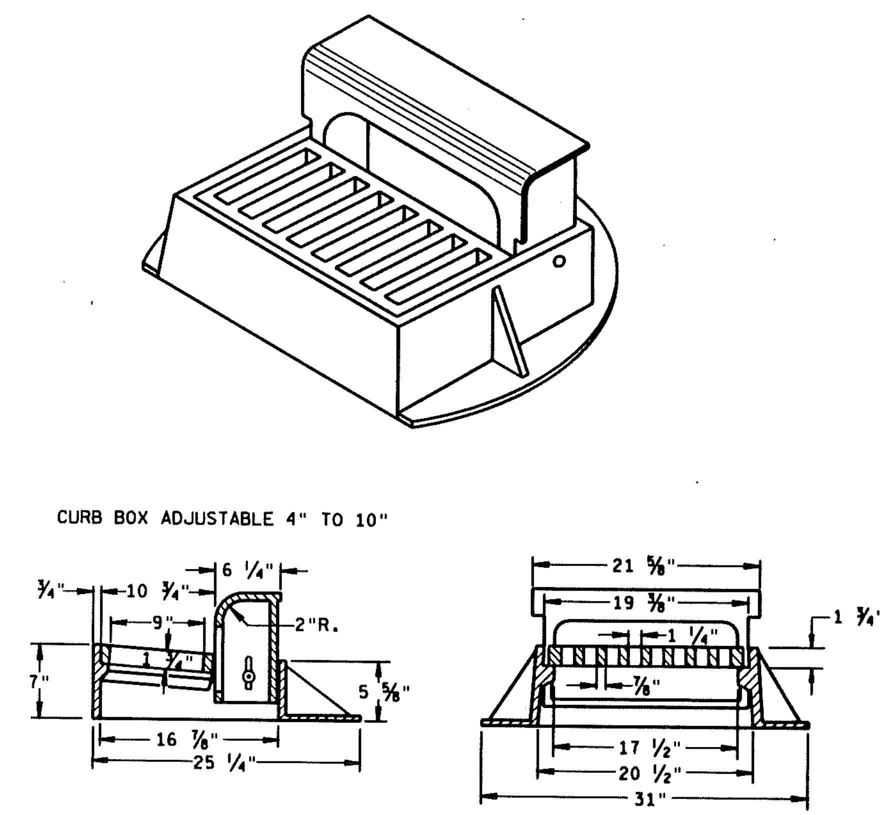
GENERAL NOTES

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 MANHOLE COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ROUND FRAMES AND COVERS SHALL HAVE CONTINUOUSLY MACHINED BEARING SURFACES TO PREVENT ROCKING AND RATTLING.

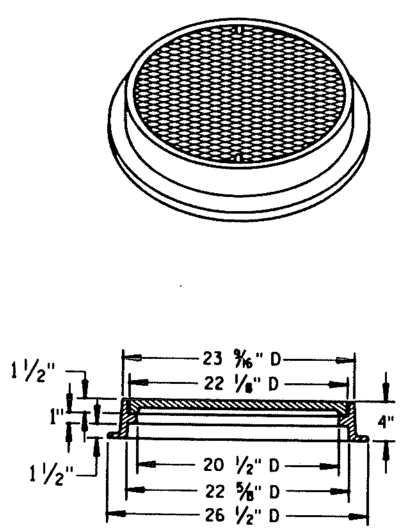
THE ACTUAL WEIGHT OF COVERS MAY VARY WITHIN 5 PERCENT, PLUS OR MINUS, OF THE APPROXIMATE WEIGHT.



INLET COVER TYPE "Z"

(APPROXIMATE WEIGHT 280 LBS.)

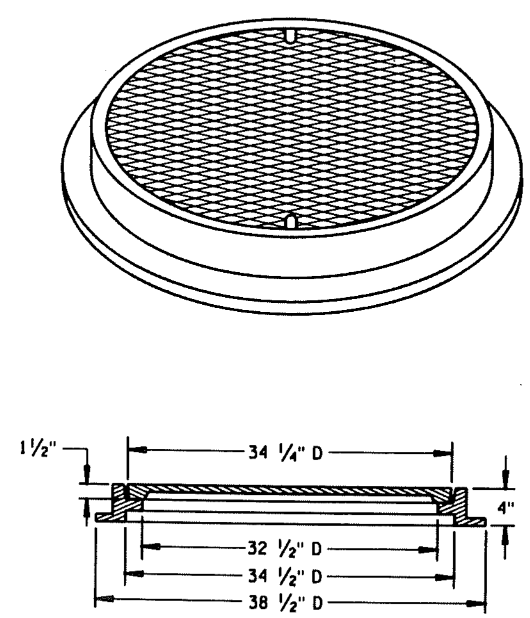
FRAME.......................... 145 LBS.
GRATE.......................... 50 LBS.
CURB BOX...................... 85 LBS.



TYPE "L"

(APPROXIMATE WEIGHT 145 LBS.)

FRAME.......... 75*
LID............ 70*



TYPE "M"

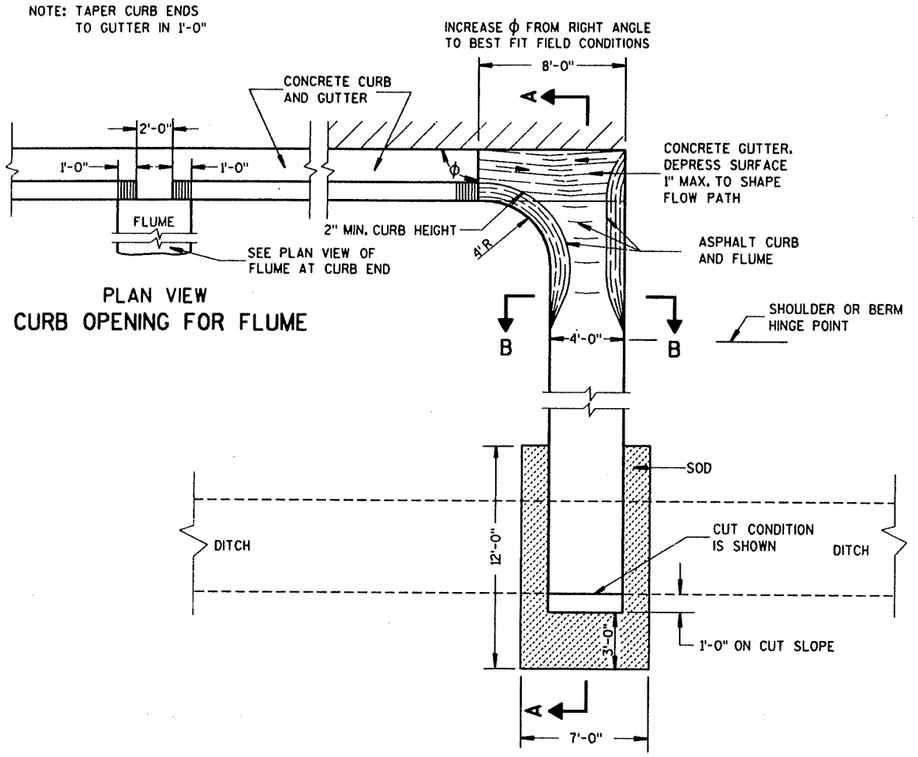
(APPROXIMATE WEIGHT 385 LBS.)

FRAME................ 125*
LID..................... 260*

INLET AND MANHOLE COVERS
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION
APPROVED 08/07/95 DATE — CHIEF ROADWAY DESIGN ENGINEER
FHWA

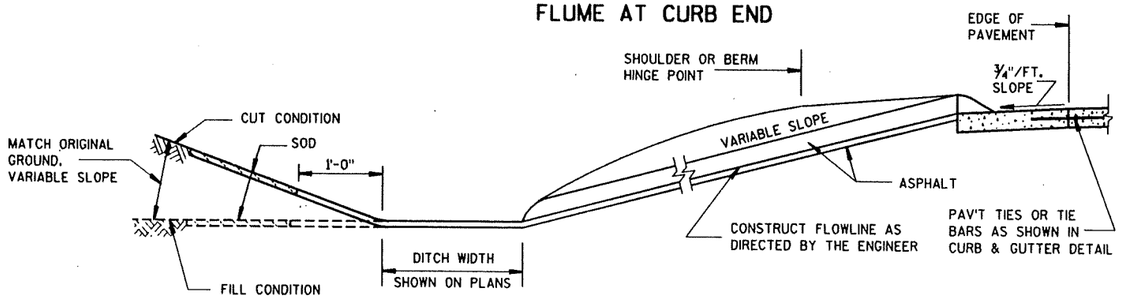
S.D.D. 8 A 5-11d

ASPHALTIC FLUME

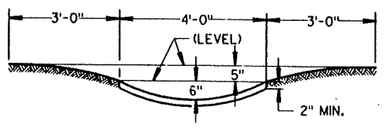


PLAN VIEW
CURB OPENING FOR FLUME

PLAN VIEW
FLUME AT CURB END



SECTION A-A



SECTION B-B

GENERAL NOTES

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

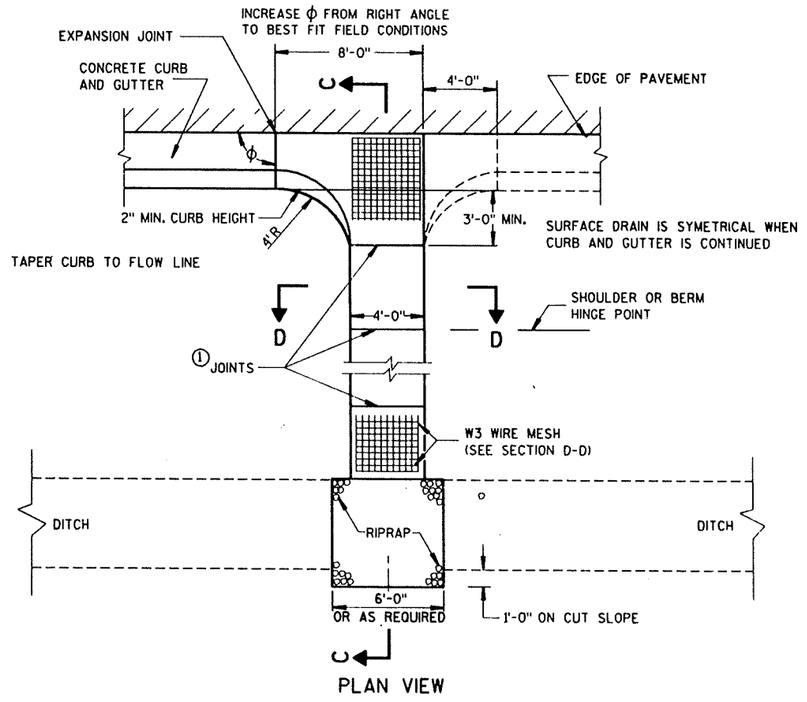
WELDED STEEL WIRE FABRIC SHALL BE IN ACCORDANCE WITH AASHTO SPECIFICATION M55.

① JOINTS SHALL BE ⅛ TO ¼ INCH WIDE BY 1½ INCHES DEEP AND SPACED AT UNIFORM INTERVALS OF APPROXIMATELY 4 FEET.

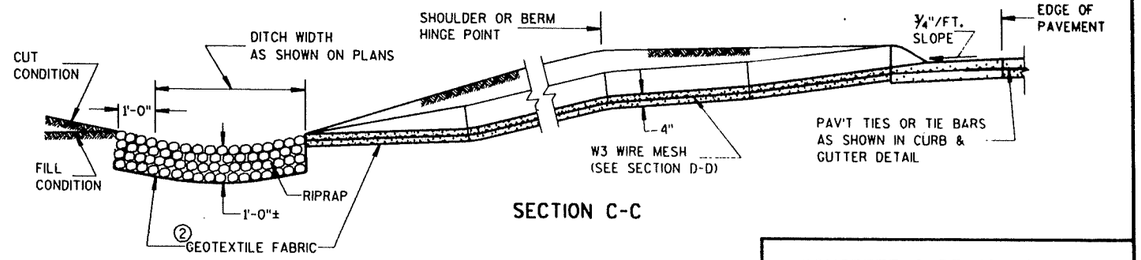
② GEOTEXTILE FABRIC TYPE "R" SHALL UNDERLAY THE FULL LENGTH AND WIDTH OF THE CONCRETE SURFACE DRAIN AND RIPRAP.

③ CONCRETE SURFACE DRAIN WITHOUT CURB AND GUTTER MAY BE USED ON BACKSLOPES WHEN SPECIFIED

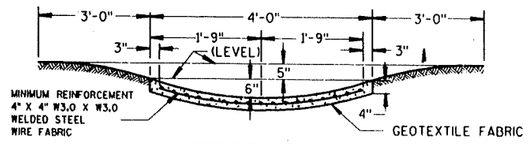
③ CONCRETE SURFACE DRAIN



PLAN VIEW



SECTION C-C



SECTION D-D

CONCRETE SURFACE DRAIN & ASPHALTIC FLUME

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

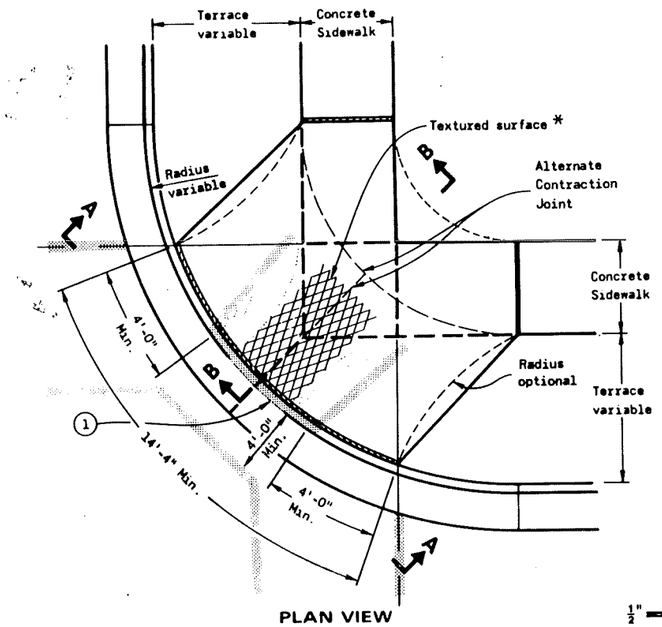
APPROVED 10/23/09 DATE

STATE DESIGN ENGINEER FOR HWYS

FHWA

S.D.D. 8 D 4-3

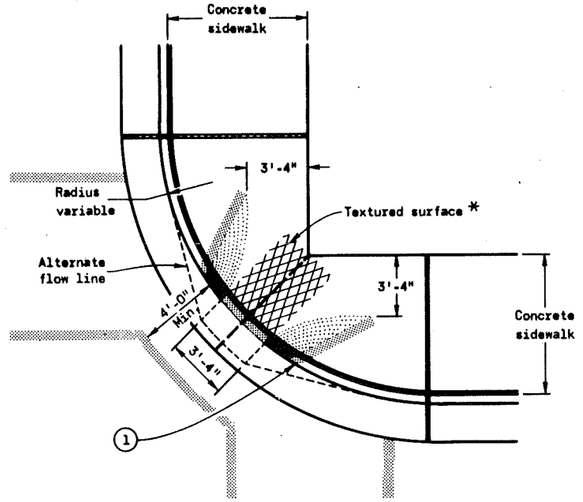
S.D.D. 8 D 4-3



PLAN VIEW

TYPE 1 RAMP

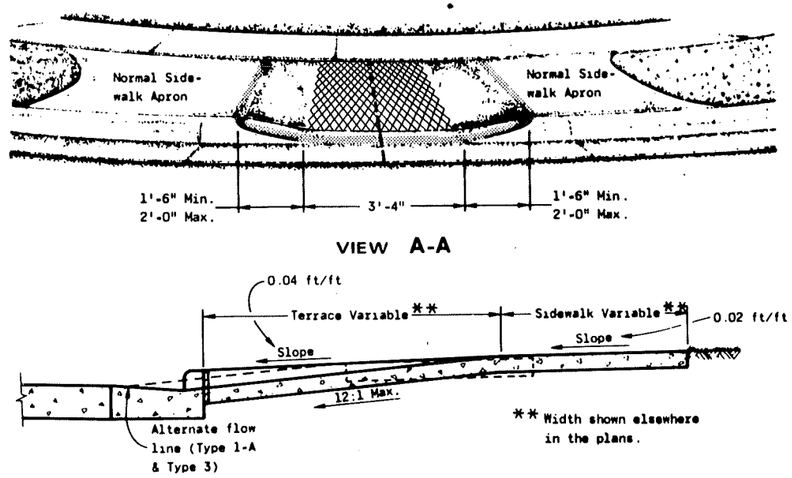
(CENTER OF CORNER RADIUS)



PLAN VIEW

TYPE 1-A RAMP

(NO TERRACE)



VIEW **A-A**

SECTION **B-B**

$\frac{1}{2}$" EXPANSION JOINTS - SIDEWALK

CONTRACTION JOINTS

Location of joints may be varied from those shown to better fit site conditions and/or local government preference.

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.

Ramps shall be built at 12:1 or flatter. When necessary, the sidewalk elevation may be lowered to meet the high point on the ramp.

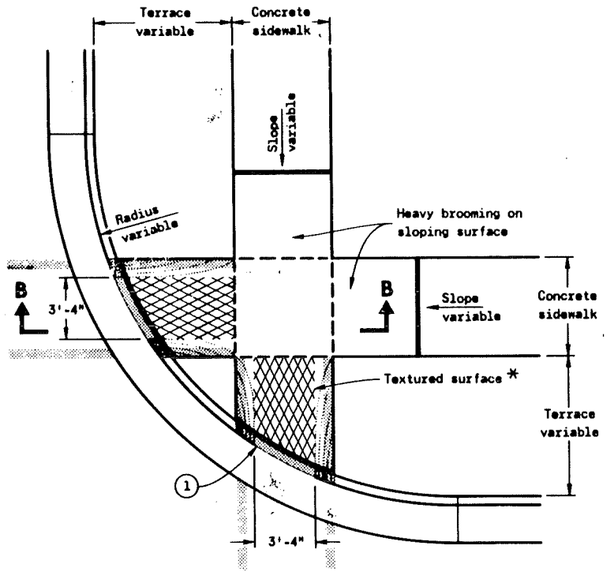
Type 1 or Type 1-A Ramps shall have a normal sidewalk apron and curb on both sides of ramp

Curb ramps shall be measured and paid for as Concrete Sidewalk and Concrete Curb and Gutter.

Surface texturing shall consist of linear impressions approximately $\frac{1}{4}$ inch to $\frac{3}{8}$ inch in depth and width, oriented to provide a uniform pattern of diamond shapes measuring approximately $1\frac{1}{2}$ inches in width by $2\frac{1}{2}$ inches in length, with the length being parallel to the direction of pedestrian movement. This surface texture may be achieved by impressing and removing a piece of expanded metal regular industrial mesh into the surface of the ramp while the concrete is in a plastic state

(1) The ramp shall be bordered on both sides and on the curb line with a 4 inch wide yellow stripe or with brick of a contrasting color. Normally the paint stripe alternate will be used. The municapality or the department will apply this striping unless otherwise specified in the contract.

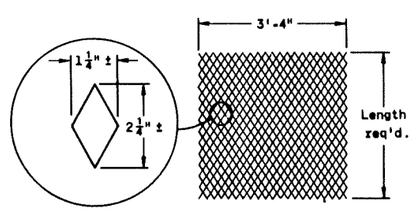
If a municapality requires the brick alternate, special details and provisions are shown elsewhere in the plans.



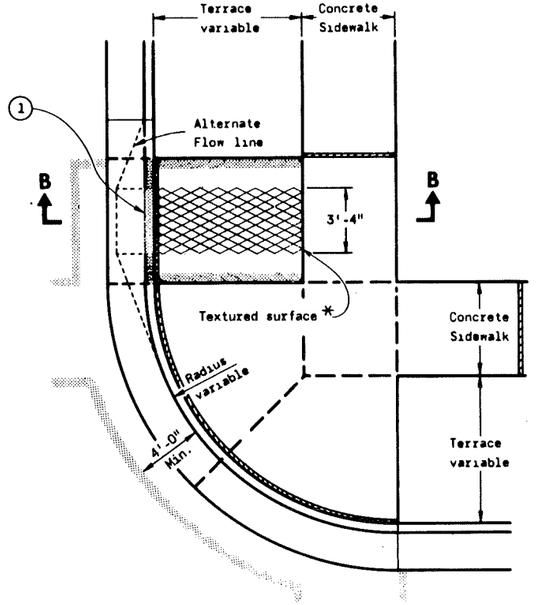
PLAN VIEW

TYPE 2 RAMP

(ON LINE WITH SIDEWALK)



DETAIL OF DIAMOND PATTERN * .



PLAN VIEW

TYPE 3 RAMP

(OUTSIDE OF CROSSWALK AREA)

CURB RAMPS

State of Wisconsin
Department of Transportation

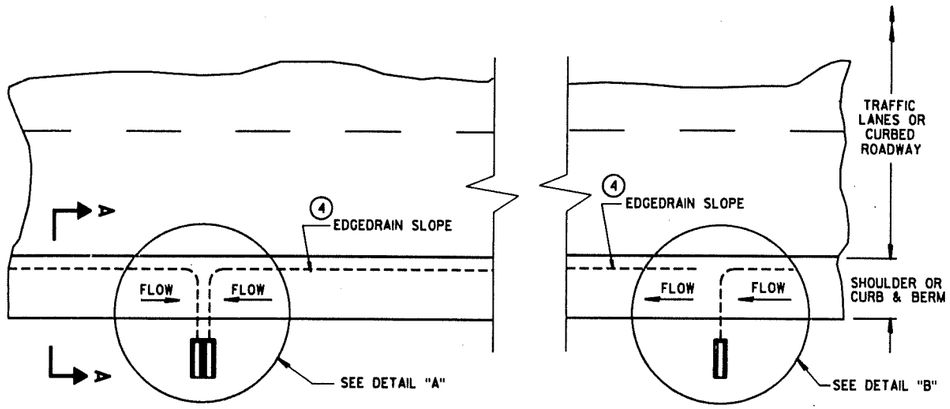
APPROVED 10-23-84 DATE

CHIEF DESIGN ENGINEER

FHWA

S.D.D. 8 D 5-8

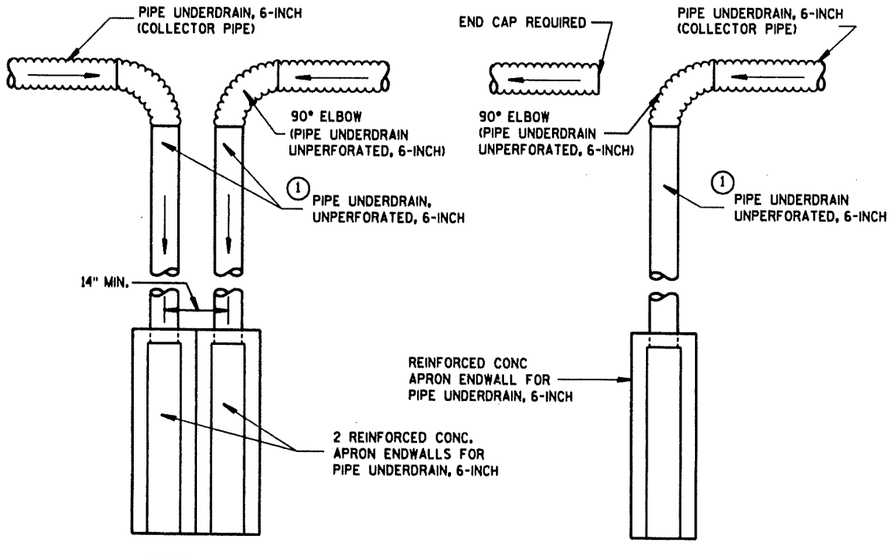
S.D.D. 8 D 5-8



PLAN VIEW

ROADWAY WITH SHOULDERS OR CURBS

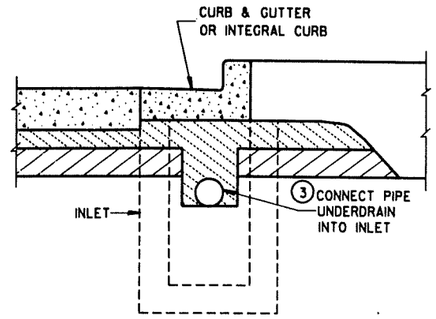
(EDGEDRAIN OUTLETS TO ROADSIDE) ②



DETAIL "A"
TO BE USED AT LOW POINT LOCATIONS

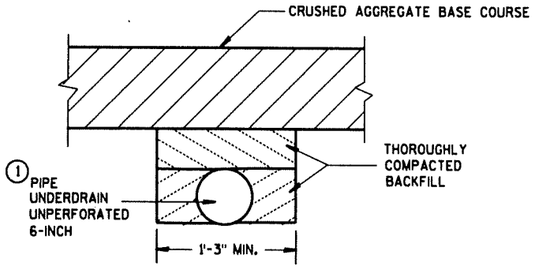
DETAIL B
TO BE USED AT INTERMEDIATE LOCATIONS

TYPICAL DRAIN OUT DETAILS



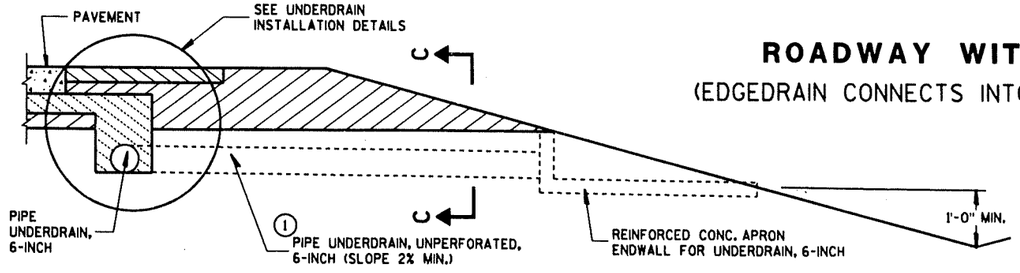
SECTION B-B

URBAN CROSS SECTION



SECTION C-C

(TRENCH FOR OUTFALL PIPE)



SECTION A-A

RURAL CROSS SECTION

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.

(1) UNPERFORATED PIPE UNDERDRAIN AND FITTINGS FURNISHED FOR OUTFALL PIPE SHALL MEET THE REQUIREMENTS OF ONE OF THE FOLLOWING SPECIFICATIONS:

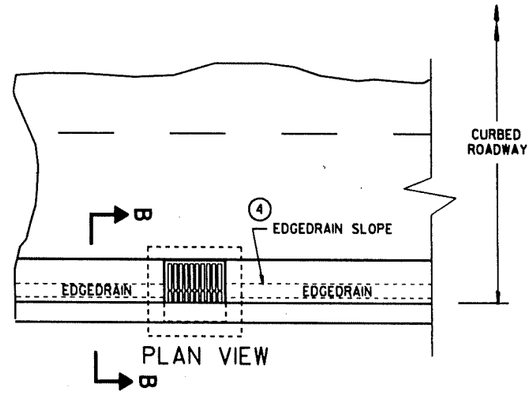
POLYVINYL CHLORIDE (PVC) PLASTIC DRAIN, WASTE, AND VENT PIPE AND FITTINGS, ASTM D 2665, SCHEDULE 40 PVC.

TYPE PSM POLYVINYL CHLORIDE (PVC) SEWER PIPE AND FITTINGS, ASTM D 3034, SDR 23.5 PVC SEWER PIPE.

(2) MAXIMUM SPACING OF EDGEDRAIN OUTLETS SHALL BE 250 FEET UNLESS OTHERWISE SPECIFIED IN THE CONTRACT OR DIRECTED BY THE ENGINEER.

(3) EDGEDRAIN SHALL BE CONNECTED TO INLETS REGARDLESS OF FLOW DIRECTION FOR DRAINAGE AND MAINTENANCE ACCESS.

(4) EDGEDRAIN SHALL BE LAID PARALLEL TO THE GRADE OF ROADWAY.



ROADWAY WITH CURBS

(EDGEDRAIN CONNECTS INTO INLET STRUCTURE)

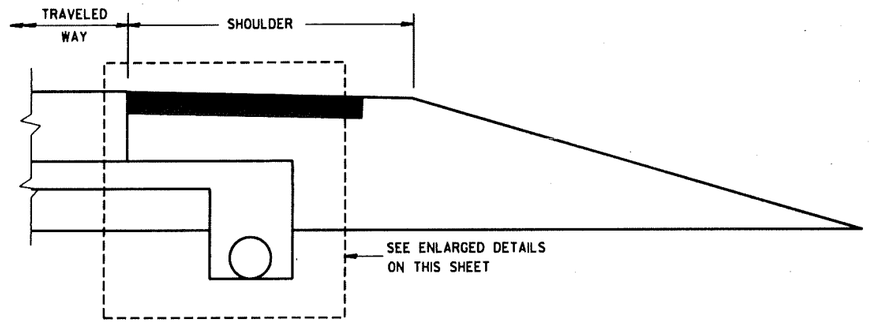
NOTE:
SDD 8F6-X AND SDD 8D15-1b or SDD 8D15-1c ARE REQUIRED WITH THIS DRAWING IN CONTRACT PLANS.

EDGEDRAIN OUTLET DETAILS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

S.D.D. 8 D 15-1a

S.D.D. 8 D 15-1a



RURAL CROSS SECTION

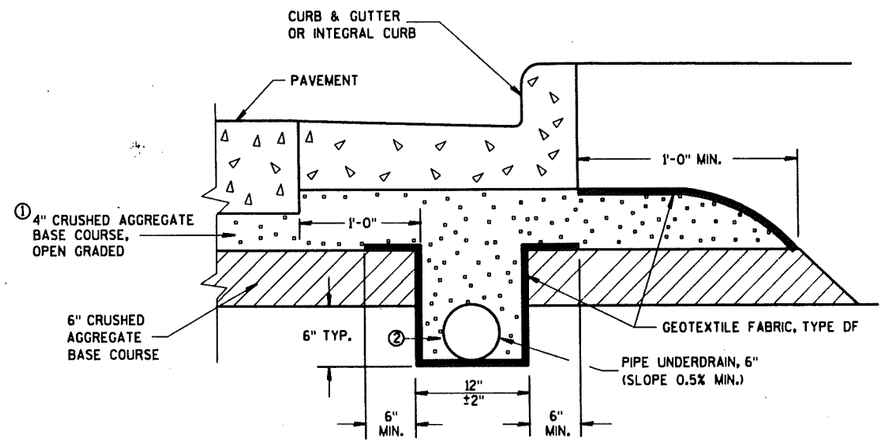
NOTES

THE DIMENSIONS SHOWN ON THE TYPICAL CROSS SECTIONS WILL GOVERN IN THE EVENT THERE IS A CONFLICT WITH THE DETAILS SHOWN ON THIS DRAWING.

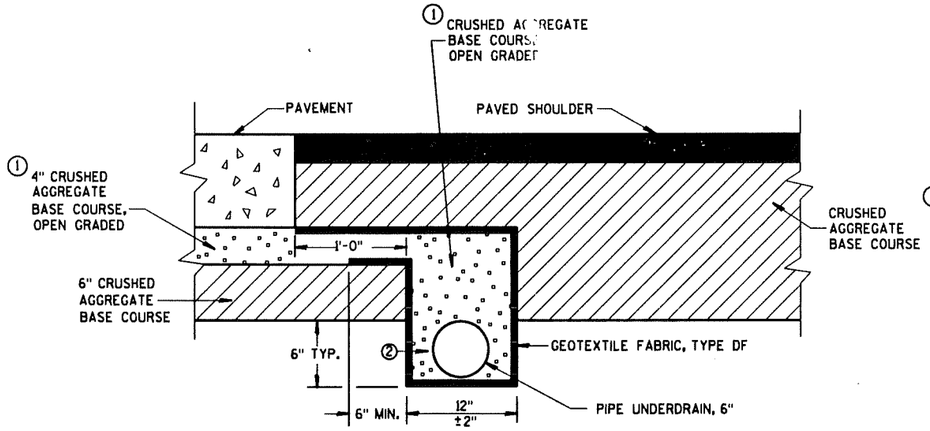
PIPE UNDERDRAIN SHALL BE LAID PARALLEL TO THE GRADE OF THE ROADWAY.

① THE GRADATION OF THE OPEN GRADED BASE COURSE SHALL BE EITHER NO. 1 OR NO. 2 AS SPECIFIED ELSEWHERE IN THE CONTRACT.

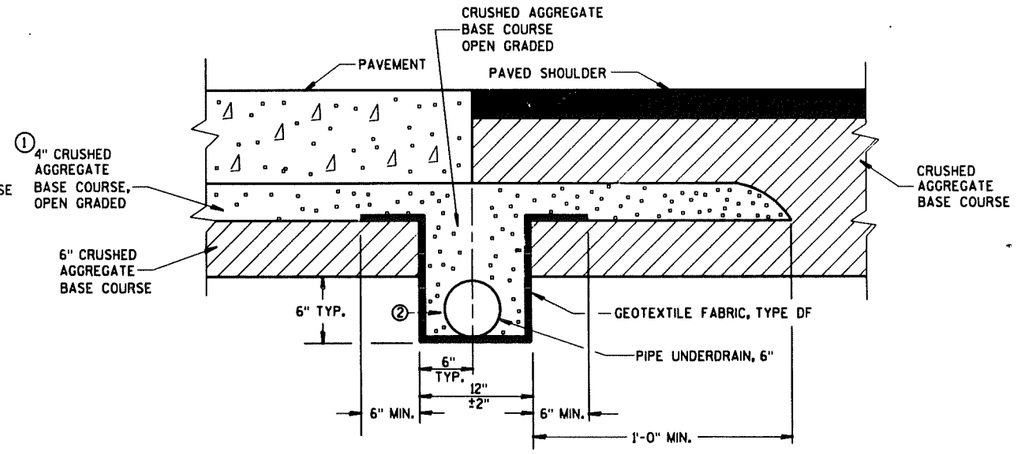
② TRENCH BACKFILL WILL BE PAID FOR AS CRUSHED AGGREGATE BASE COURSE, OPEN GRADED NO. 1 OR NO. 2 AS SPECIFIED.



EDGEDRAIN IN URBAN ROADWAY



POST PAVING INSTALLATION
(QUANTITIES ARE BASED ON THIS DETAIL)



PRE-PAVING INSTALLATION ALTERNATIVE

EDGEDRAIN IN RURAL ROADWAY

NOTE:
SDD 8D15-1a IS REQUIRED WITH THIS DRAWING IN CONTRACT PLANS.

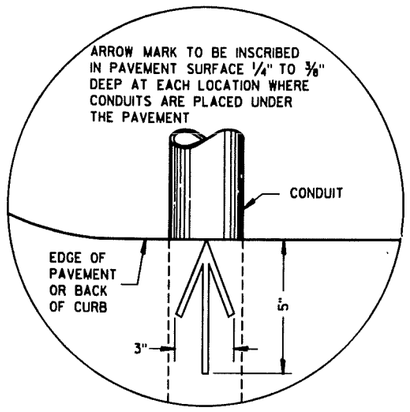
EDGEDRAIN AND CRUSHED AGGREGATE BASE COURSE, OPEN GRADED NO.1 OR NO. 2

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
12/7/93 DATE
Troy L. Thompson
CHIEF METHODS DEVELOPMENT ENGINEER
FHWA

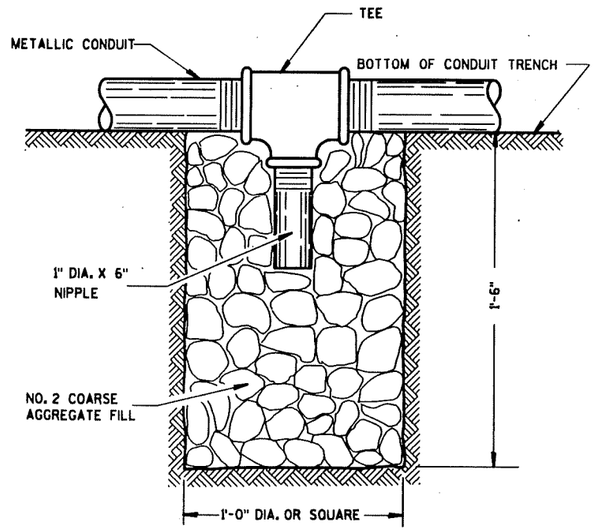
S.D.D. 8 D 15-1b

S.D.D. 8 D 15-1b



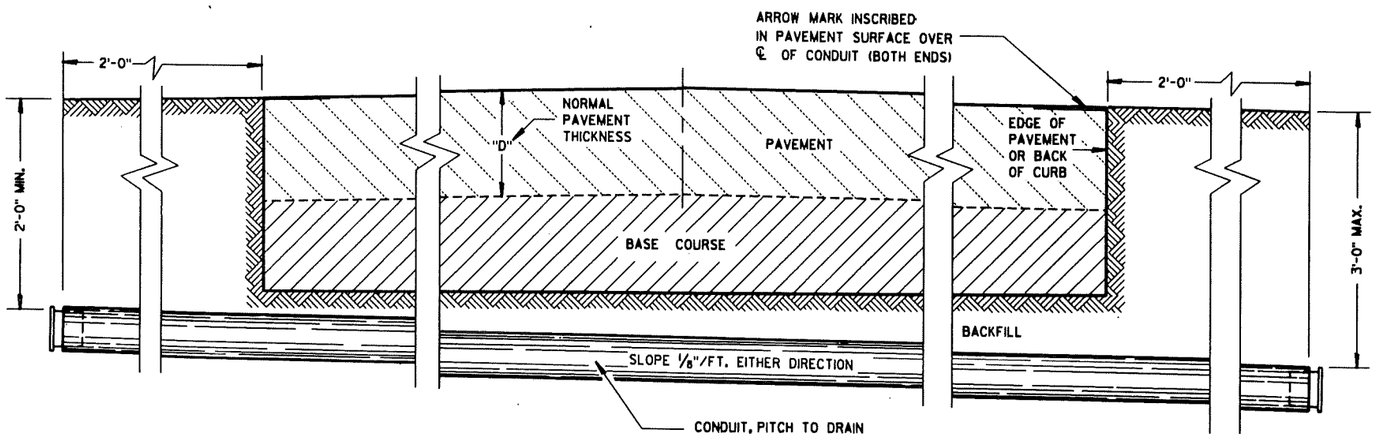
PLAN VIEW

ARROW MARK



NOTE: INSTALL AT LOCATIONS WHERE METALLIC CONDUITS CANNOT BE PITCHED TO DRAIN INTO A PULL BOX.

DRAIN SUMP FOR CONDUIT



SIDE ELEVATION

DETAIL FOR CONDUIT UNDER PAVED HIGHWAYS

GENERAL NOTES

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

METALLIC (STANDARD SPECIFICATION 613.2.2) OR NONMETALLIC (STANDARD SPECIFICATION 613.2.3) CONDUIT SHALL BE FURNISHED AND PLACED AS SHOWN.

DEPTH OF CONDUIT INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES MINIMUM AND 36 INCHES MAXIMUM.

DEPTH OF CONDUIT INSTALLED THAT IS NOT BELOW THE TRAVELED WAY SHALL BE 18 INCHES MINIMUM AND 36 INCHES MAXIMUM.

ANY EXCEPTION TO THE MAXIMUM DEPTH SHALL BE ONLY WITH THE WRITTEN APPROVAL OF THE ENGINEER.

THE TRENCH SHALL NOT BE BACKFILLED PRIOR TO INSPECTION OF THE CONDUIT.

ALL METALLIC CONDUIT RACEWAY ENDS SHALL BE REAMED AND THREADED.

ALL METALLIC CONDUIT IN WHICH WIRE OR CABLE IS TO BE INSTALLED SHALL BE BUSHED WITH APPROVED THREADED BUSHINGS BEFORE INSTALLATION OF THE WIRE OR CABLE.

ALL METALLIC CONDUITS IN WHICH WIRE OR CABLE IS NOT TO BE INSTALLED SHALL BE CAPPED WITH THREADED PROTECTIVE CAPS, AS APPROVED BY THE ENGINEER.

ALL NONMETALLIC CONDUIT SHALL BE CAPPED OR PLUGGED IMMEDIATELY AFTER INSTALLATION.

NONMETALLIC CONDUITS IN WHICH WIRE OR CABLE IS NOT BEING INSTALLED SHALL REMAIN CAPPED OR PLUGGED.

WHEN REQUIRED TO CONNECT NONMETALLIC CONDUIT TO METALLIC CONDUIT, ONLY U.L. LISTED ADAPTER FITTINGS SHALL BE USED.

PRIOR TO CONDUIT ACCEPTANCE, CONDUIT CAPS OR PLUGS SHALL BE REMOVED, AND THE CAPS, PLUGS AND CONDUIT ENDS SHALL BE THOROUGHLY CLEANED AND THEN THE CAPS OR PLUGS REINSTALLED TO ENSURE THAT THE CAPS OR PLUGS CAN BE EASILY REMOVED IN THE FUTURE.

ALL CONDUIT BEING FURNISHED AND INSTALLED SHALL HAVE THE U.L. LABEL FIRMLY ATTACHED.

CONDUIT RUNS SHALL BE THE SAME SIZE PIPE FROM ONE END TO THE OTHER (FROM PULL BOX TO PULL BOX-OR-JUNCTION BOX TO JUNCTION BOX).

A #12 GAUGE, GALVANIZED PULL WIRE SHALL BE INSTALLED IN EACH RUN OF CONDUIT THAT DOES NOT RECEIVE CABLE OR WIRE UNDER THIS CONTRACT. THE PULL WIRE SHALL BE DOUBLED BACK 2 FEET AT EACH END CAP OF THE CONDUIT RUN.

BENDING OF PVC SHALL BE ACCOMPLISHED BY USING A BLANKET OR EMERSION TYPE TANK DESIGNED FOR THE PURPOSE OF BENDING PVC ELECTRICAL CONDUIT.

ALL CONDUIT RUNS SHALL BE STRAIGHT (WITHOUT BENDS) FROM PULL BOX TO PULL BOX, PULL BOX TO BASE AND BASE TO BASE AS SHOWN ON THE PLANS UNLESS OTHERWISE APPROVED BY THE PROJECT ENGINEER.

ALL CUT ENDS SHALL BE TRIMMED INSIDE AND OUTSIDE TO REMOVE ALL ROUGH EDGES ON NONMETALLIC CONDUIT. (SEE NEC 347.5)

CONDUIT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
1/4/92 DATE — STATE ELECTRICAL ENGR FOR HWYS
9/15/92 DATE — STATE TRAFFIC ENGINEER FOR HWYS
FHWA

S.D.D. 9 B 2-5

S.D.D. 9 B 2-5

TABLE OF NOMINAL DIMENSIONS AND WEIGHTS

DIMENSION IN INCHES		TYPE OF PIPE						
		CORRUGATED STEEL						POLYETHYLENE SDR 32.5
PIPE DIAMETER (INSIDE)	A	12	12	18	18	24	24	12
PIPE LENGTH **	B	24	36	24	36	24	36	24
WALL THICKNESS	C	0.064	0.064	0.064	0.064	0.064	0.064	0.4
COVER	D	10 1/4	10 1/4	16 1/4	16 1/4	22 1/4	22 1/4	10 1/4
FRAME	E	14 1/2	14 1/2	20 1/2	20 1/2	26 1/2	26 1/2	14 1/2
FRAME	F	8 1/2	8 1/2	14 1/2	14 1/2	20 1/2	20 1/2	8 1/2
FRAME	G	11 1/2	11 1/2	17 1/2	17 1/2	23 1/2	23 1/2	11 1/2
WEIGHT IN POUNDS *								
FRAME AND COVER		60	60	110	110	155	155	60

* THE ACTUAL WEIGHT OF THE MANHOLE FRAME AND COVER MAY VARY WITHIN 5 PERCENT PLUS OR MINUS OF THE WEIGHTS SHOWN.

** NORMALLY USED LENGTHS. THE PROJECT ENGINEER SHALL DETERMINE IF PIPE LENGTHS, OTHER THAN THOSE SPECIFIED, SHALL BE USED, TO A MAXIMUM OF 48" (CONTINUOUS LENGTH, NON-SPLICED)

GENERAL NOTES

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

ALL FRAMES AND COVERS SHALL BE HEAVY DUTY TYPE, SUITABLE FOR VEHICULAR TRAFFIC LOADS.

POLYETHYLENE PULL BOXES SHALL NOT BE INSTALLED IN CONCRETE OR ASPHALTIC PAVEMENT. PULL BOXES LOCATED IN THE ROADWAY SHALL HAVE LOCKING COVERS.

ENTRANCE HOLES INTO PULL BOXES SHALL BE CUT WITH A CIRCULAR HOLE SAW OR HYDRAULIC CONDUIT PUNCH. HOLE SIZE SHALL BE THE OUTSIDE DIAMETER OF THE CONDUIT THAT IS TO FIT IN THE OPENING PLUS NO MORE THAN 1/4".

THE CONTRACTOR SHALL NOT INSTALL WIRE IN ANY PULL BOX UNTIL ITS INSTALLATION HAS BEEN INSPECTED AND ACCEPTED BY THE ENGINEER.

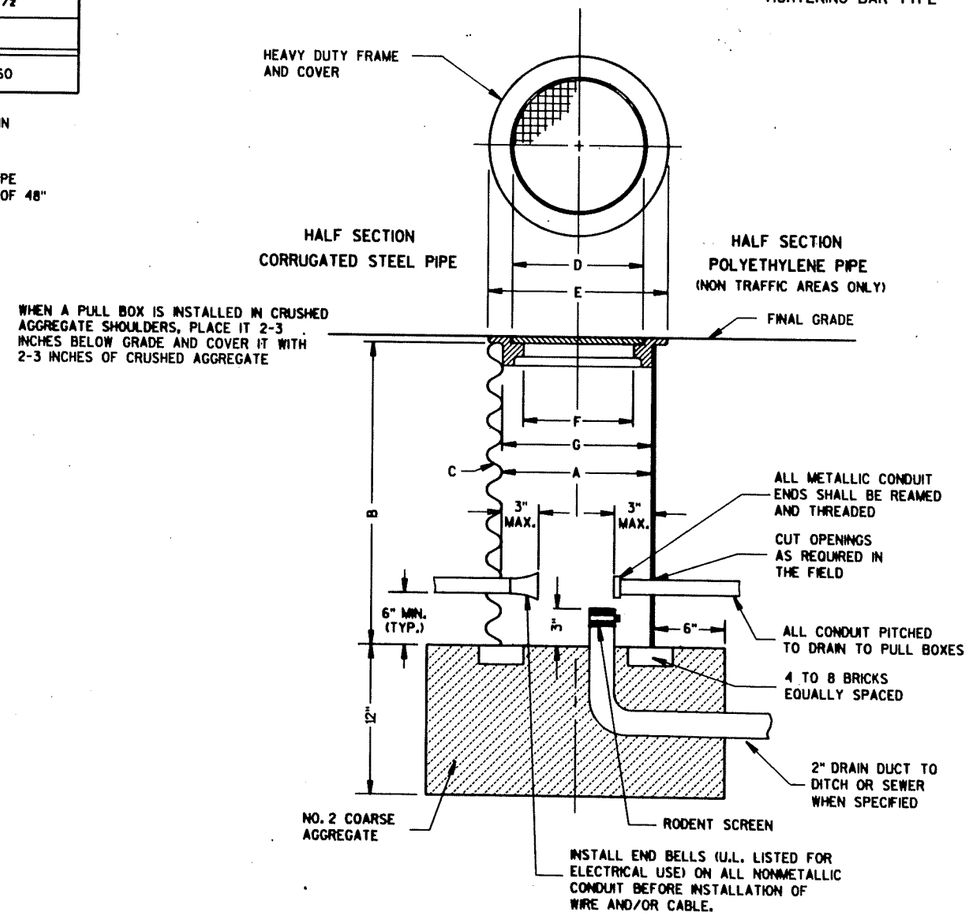
GROUNDING LUGS (MECHANICAL CONNECTORS) SHALL BE U.L. LISTED AND APPROVED FOR USE WITH COPPER WIRE. THE MECHANICAL CONNECTION (INSIDE AND OUTSIDE) TO THE PULL BOX, SHALL BE TOTALLY AND PERMANENTLY SEALED WITH A SILICONE OR RUBBERIZED CAULKING COMPOUND AS APPROVED BY THE ENGINEER.

GROUNDING LUGS ARE NOT REQUIRED IN PULL BOXES WHEN VOLTAGES OF LESS THAN 50 VOLTS AC ARE THE ONLY VOLTAGES ENCOUNTERED IN THE BOXES.

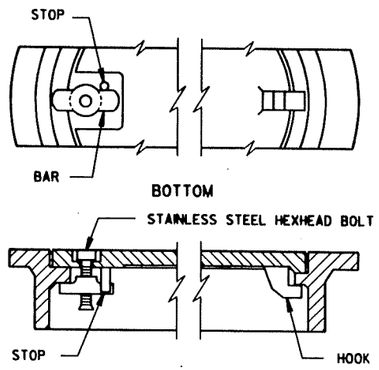
DRAIN DUCT SHALL BE MEASURED AND PAID FOR SEPARATELY.

RODENT SCREEN SHALL BE 1/8" GALVANIZED STEEL MESH AND BE INSTALLED WITH A STAINLESS STEEL HOSE CLAMP OF SUFFICIENT SIZE.

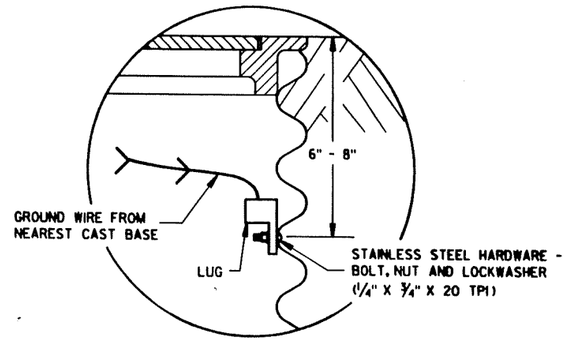
ALL METALLIC CONDUIT IN WHICH WIRE AND/OR CABLE IS TO BE INSTALLED, SHALL BE BUSHED BEFORE INSTALLATION OF THE WIRE AND/OR CABLE.



PULL BOX



ALTERNATE COVER (LOCKING)
TIGHTENING BAR TYPE



GROUNDING LUG AND LOCATION IN STEEL PULL BOXES

PULL BOX

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4/21/93 DATE — STATE ELECTRICAL ENGR FOR HWYS
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FHWA

S.D.D. 9 B 4-1

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GENERAL NOTES

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

FOUR (4) BOLTS TO BE FURNISHED WITH EACH TRANSFORMER BASE. BOLTS SHALL BE 1" DIAMETER, 4" IN LENGTH, WITH WASHERS, LOCK WASHERS AND NUTS. BOLTS, NUTS AND WASHERS SHALL BE MANUFACTURED IN ACCORDANCE WITH ASTM A-449, AND BE GALVANIZED IN ACCORDANCE WITH ASTM A-153, CLASS C.

4" BOLTS SHALL BE IN ACCORDANCE WITH SECTION 640.2.9 OF THE STANDARD SPECIFICATIONS, ASTM A-449 OR ASTM A-687 (GRADE 105).

LEVELING SHIMS, IF NEEDED, SHALL BE DESIGNED FOR THE PURPOSE AND USED UNDER CAST BASES WHEN PLUMBING POLES OR STANDARDS DURING INSTALLATION. THE USE OF WASHERS IN LIEU OF PROPER LEVELING SHIMS IS NOT ACCEPTABLE.

SHIM LENGTH SHALL BE LONG ENOUGH TO COMPLETELY COVER THE AREA UNDER THE LENGTH AND WIDTH OF THE BASE MOUNTING FLANGE.

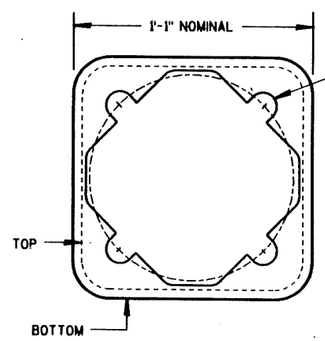
DOUBLE NUTTING IS NOT ACCEPTABLE FOR LEVELING OR MOUNTING PURPOSES.

A NEMA APPROVED AND U.L. LISTED MECHANICAL CONNECTOR (LUG) AL/CU RATED AND SIZED TO ACCEPT #10 AWG STRANDED WIRE, SHALL BE FURNISHED AND INSTALLED IN THE PEDESTAL AND TRANSFORMER BASES.

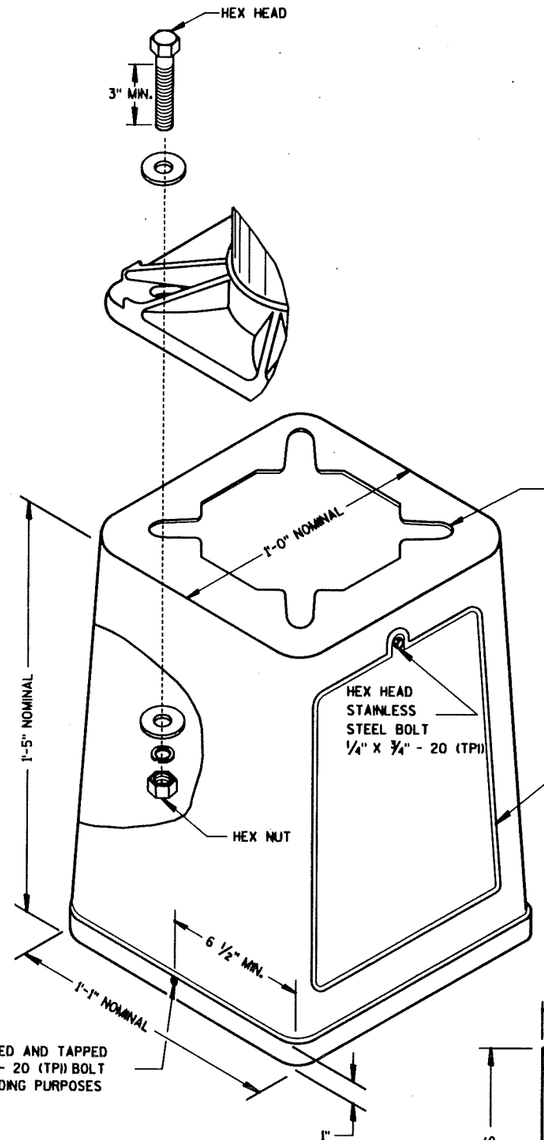
THE MECHANICAL CONNECTOR SHALL BE INSTALLED USING A 1/4" - 20 (TPI) STAINLESS STEEL HEX HEAD BOLT OF SUFFICIENT LENGTH TO FIRMLY ATTACH THE LUG TO THE BASE.

SHOULD THE MANNER OF ATTACHMENT OF THE LUG REQUIRE WASHERS, HEX NUTS, LOCK WASHER - THEY SHALL BE STAINLESS STEEL AS IS THE BOLT. THE MANNER OF ATTACHMENT SHALL NOT BLOCK ACCESSIBILITY TO WIRE PLACEMENT IN THE CONNECTOR.

TEST REPORTS FROM AN FHWA APPROVED INDEPENDENT LABORATORY SHALL BE PROVIDED CERTIFYING THAT THE BASE HAS BEEN TESTED AND MEETS OR EXCEEDS ALL OF THE APPLICABLE 1985 AASHTO BREAKAWAY REQUIREMENTS. A STATEMENT OF CERTIFICATION FROM FHWA ATTESTING THAT SUCH TESTS HAVE BEEN ACCEPTED AND APPROVED SHALL BE SUPPLIED ALONG WITH THE BID.



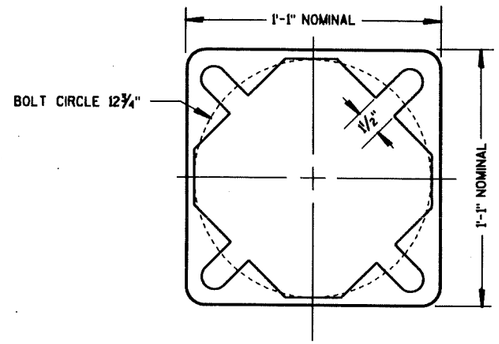
BOTTOM VIEW
(TRANSFORMER BASE)



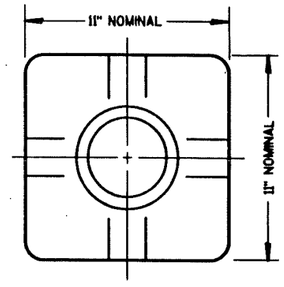
ISOMETRIC VIEW

TRANSFORMER BASE

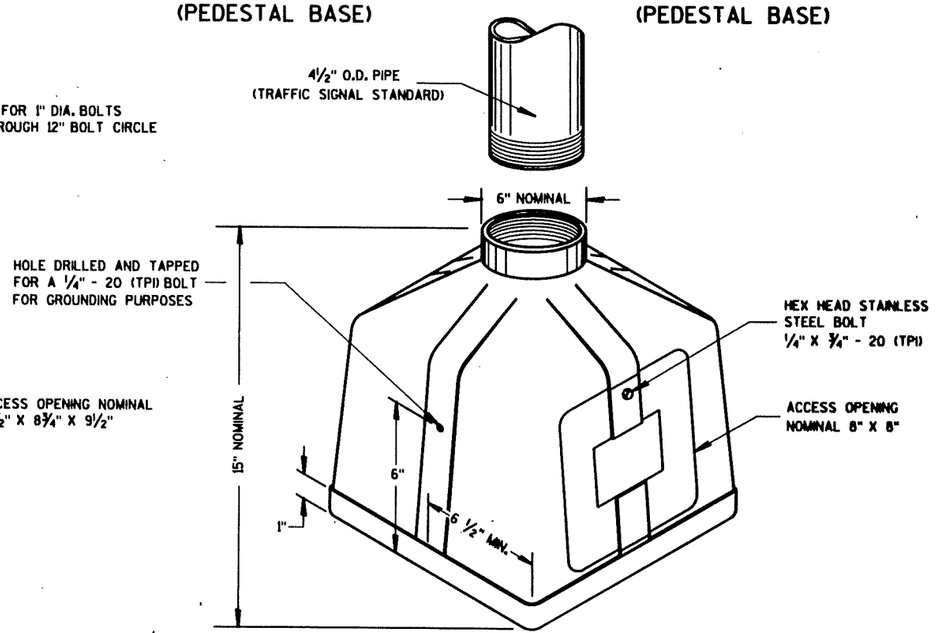
INTENDED FOR USE WITH TYPE 2, 3, 4 & 5 POLES



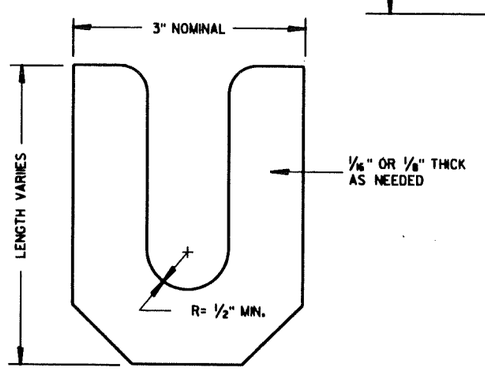
BOTTOM VIEW
(PEDESTAL BASE)



TOP VIEW
(PEDESTAL BASE)



ISOMETRIC VIEW
PEDESTAL BASE



LEVELING SHIM

CAST BASES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4/21/93 DATE — STATE ELECTRICAL ENGR FOR HWYS
4/21/93 DATE — STATE TRAFFIC ENGINEER FOR HWYS
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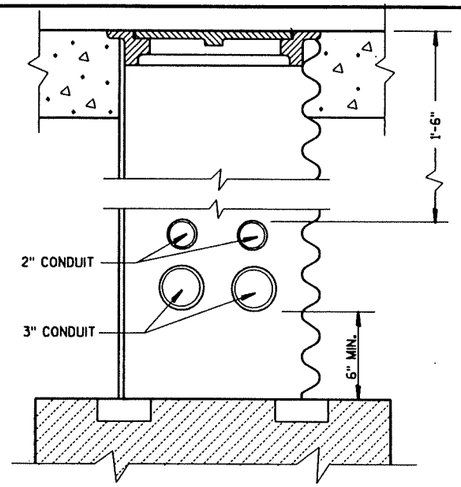
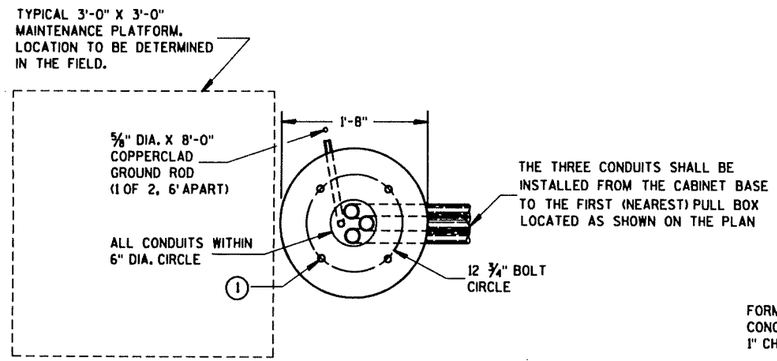
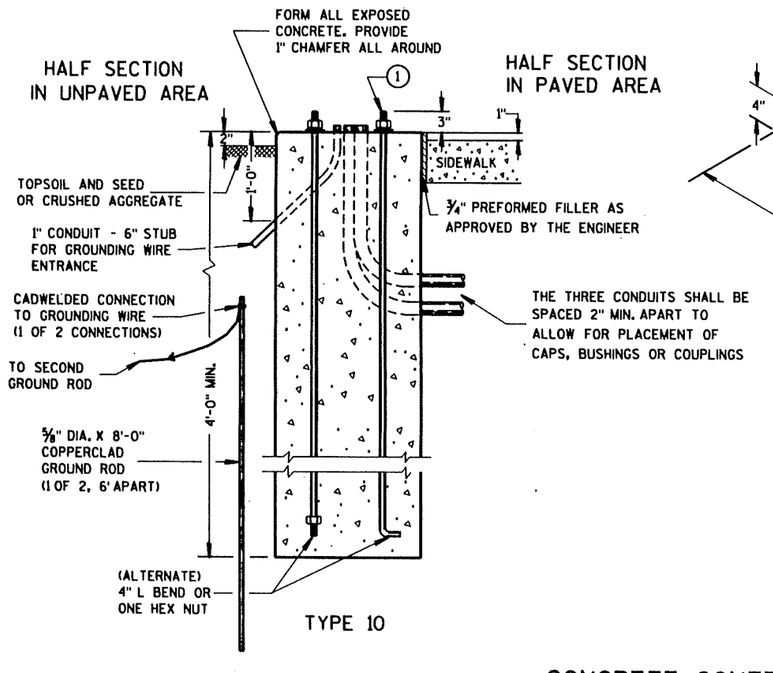
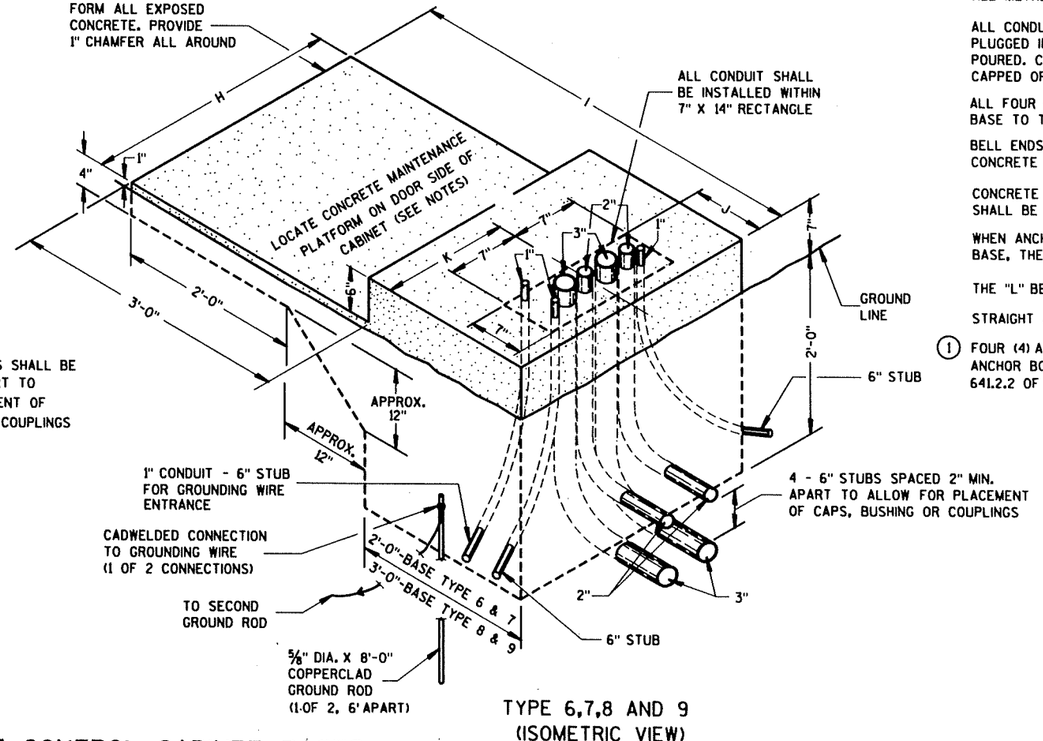
CONTROL CABINET BASE TYPE	DIMENSIONS				C.Y. CONCRETE (APPROX.)
	H	I	J	K	
TYPE 6 - 30" CABINET	34"	60"	10"	17"	.64
TYPE 7 - 38" CABINET	42"	60"	10"	21"	.93
TYPE 8 - 38" CABINET	42"	72"	12"	21"	1.29
TYPE 9 - VARIABLE	54"	72"	14"	27"	1.56
TYPE 10 - POST MOUNT	AS SHOWN				.32



CONDUIT LOCATIONS IN 24" X 36" PULL BOX
(LEADING TO CONTROLLER CABINET BASE TYPE 6, 7, 8 AND 9)







CONCRETE CONTROL CABINET BASES

GENERAL NOTES

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

INSTALL FOUR ½ INCH MINIMUM DIAMETER X 4 INCH MINIMUM LENGTH APPROVED CONCRETE MASONRY ANCHORS TO ANCHOR THE CABINET TO TYPE 6, 7, 8, AND 9 BASES. THE ANCHOR BOLTS SHALL BE LOCATED AS DIRECTED BY THE ENGINEER TO PROPERLY ANCHOR THE CONTROL CABINET TO THE BASE.

WHEN REQUIRED TO CONNECT NONMETALLIC CONDUIT TO METALLIC CONDUIT, ONLY ADAPTER FITTINGS, U.L. LISTED FOR ELECTRICAL USE, SHALL BE USED.

CONDUIT HEIGHT ABOVE THE CONCRETE BASE SHALL BE 1 INCH.

DEPTH OF CONDUIT INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES MINIMUM AND 36 INCHES MAXIMUM.

DEPTH OF CONDUIT INSTALLED THAT IS NOT BELOW THE TRAVELED WAY SHALL BE 18 INCHES MINIMUM AND 36 INCHES MAXIMUM.

ANY EXCEPTION TO THE MAXIMUM DEPTH SHALL BE ONLY WITH THE WRITTEN APPROVAL OF THE ENGINEER.

CONTROL CABINET BASE TOP SURFACES SHALL BE TROWEL FINISHED AND LEVEL.

WHEN A TYPE 10 CONTROL CABINET BASE IS USED TO POST MOUNT A CONTROL CABINET, A 36" SQUARE 4" THICK CONCRETE MAINTENANCE PLATFORM SHALL BE REQUIRED ON THE DOOR SIDE OF THE CABINET. THE TOP 1 INCH SHALL BE ABOVE FINISHED GRADE AND BE BROOM FINISHED AND LEVEL.

MAINTENANCE PLATFORMS ARE NOT REQUIRED WHEN THE SURROUNDING AREA IS PAVED.

MINIMUM BENDING RADIUS OF CONDUIT = 6 X THE DIAMETER.

ALL METALLIC CONDUIT ENDS SHALL BE REAMED AND THREADED.

ALL CONDUIT ENDS AT THE TOP OF CONCRETE BASES SHALL BE CAPPED IF METALLIC OR PLUGGED IF NONMETALLIC IMMEDIATELY AFTER PLACEMENT AND BEFORE CONCRETE IS POURED. CONDUITS IN WHICH WIRE OR CABLE IS NOT BEING INSTALLED SHALL REMAIN CAPPED OR PLUGGED.

ALL FOUR (TWO INCH AND THREE INCH) CONDUIT SHALL BE INSTALLED FROM THE CABINET BASE TO THE FIRST (NEAREST PULL BOX LOCATED AS SHOWN ON THE PLANS.

BELL ENDS SHALL BE INSTALLED ON ALL PVC CONDUIT EXPOSED AT THE TOP OF THE CONCRETE BASE BEFORE INSTALLATION OF CABLE OR WIRE.

CONCRETE FORM DEPTH BELOW FINISHED GRADE SHALL BE 6" MAXIMUM. CONCRETE FORMS SHALL BE REMOVED AFTER CONCRETE HAS SET.

WHEN ANCHOR BOLTS USING THE ALTERNATE L BEND ARE FURNISHED FOR THE TYPE 10 BASE, THE 4" L BEND SHALL BE IN ADDITION TO THE SPECIFIED ANCHOR BOLT BAR LENGTH.

THE "L" BEND SHALL NOT BE THREADED.

STRAIGHT ANCHOR BOLTS SHALL BE THREADED 8" IN LENGTH ON EACH END OF THE BOLT.

(1) FOUR (4) ANCHOR BOLTS, 1" DIA. X 3'-6"
ANCHOR BOLTS SHALL BE MANUFACTURED IN ACCORDANCE WITH SECTION 640.2.9 AND 641.2.2 OF THE STANDARD SPECIFICATIONS AND IN ACCORDANCE WITH A-449.

CONCRETE CONTROL CABINET BASES

STATE OF WISCONSIN
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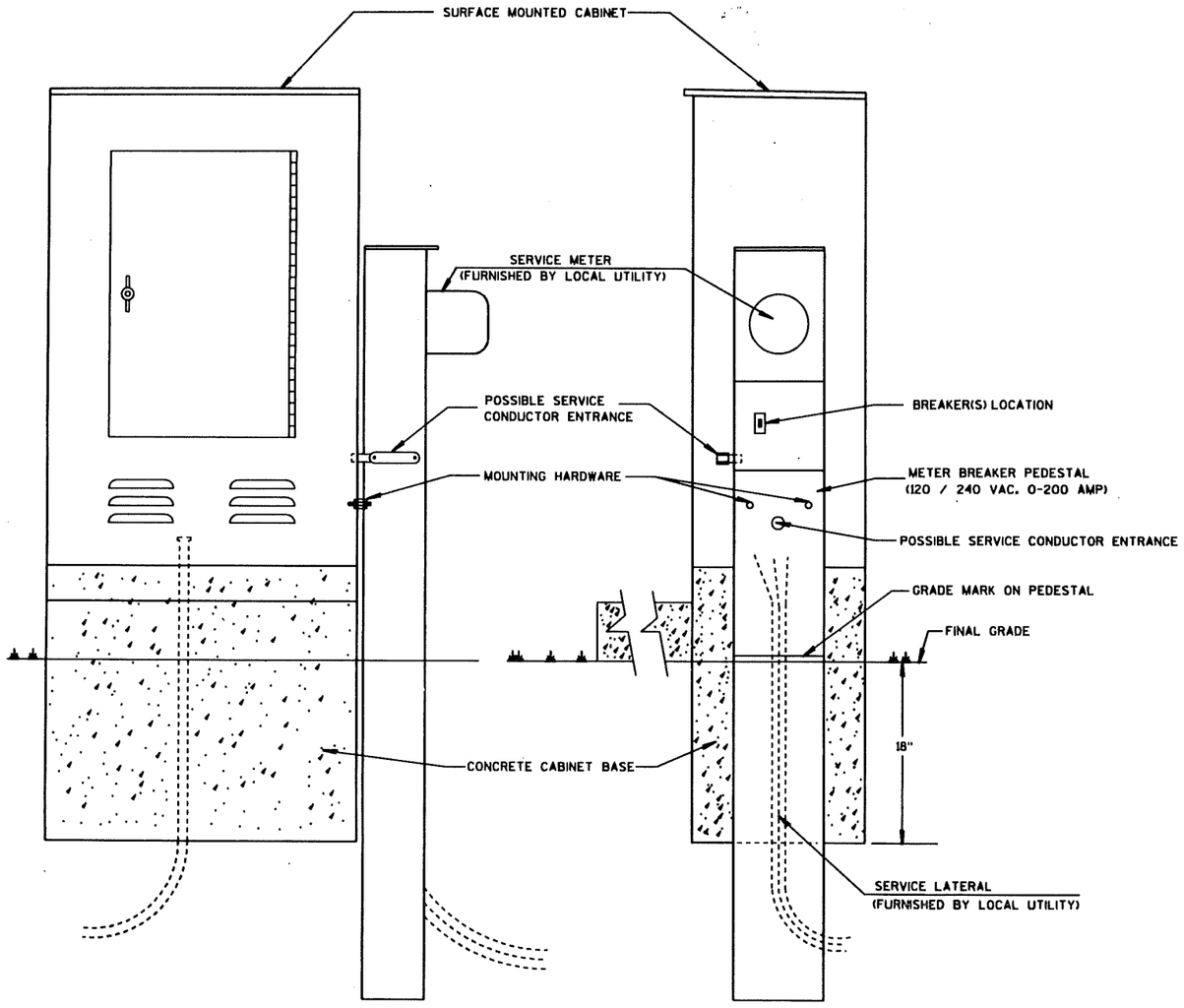

TYPICAL CABINET SERVICE INSTALLATION

GENERAL NOTES

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

THE EXACT LOCATION OF THE METER BREAKER PEDESTAL SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.

THE TYPE OF CONCRETE CABINET BASE TO BE INSTALLED SHALL BE AS CALLED FOR IN THE PLANS.

SERVICE CONDUCTOR ENTRANCES SHALL BE RIGID CONDUIT, NIPPLES AND/OR CONDULETS AS REQUIRED.

SERVICE CONDUCTOR ENTRANCES SHALL BE SIZED AS REQUIRED AND IN ACCORDANCE WITH APPROPRIATE ARTICLES OF THE LATEST ACCEPTED NATIONAL ELECTRICAL CODE.

CABINET SERVICE INSTALLATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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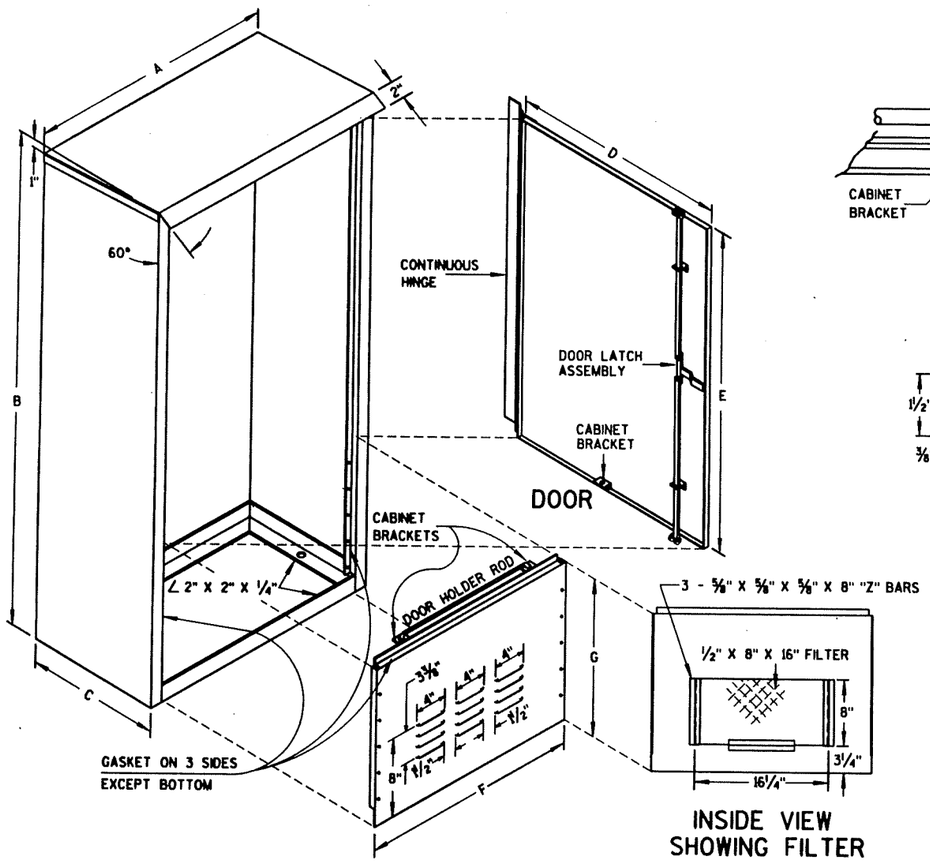
4/21/93 DATE — STATE TRAFFIC ENGINEER FOR HWYS
FHWA

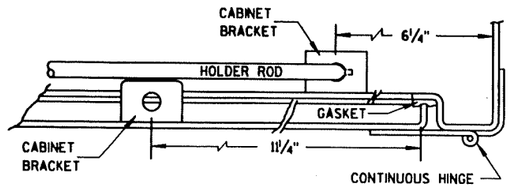
S.D.D. 9 D 1-1

S.D.D. 9 D 1-1

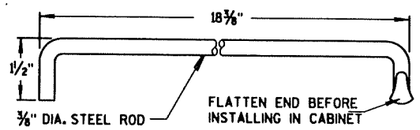


REMOVABLE COVER

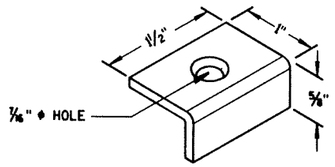
INSIDE VIEW SHOWING FILTER



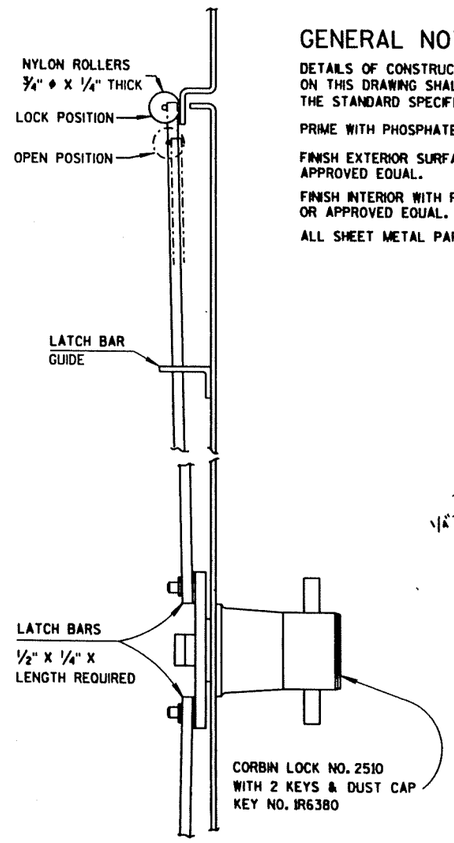
HINGE & DOOR HOLDER



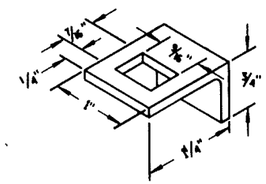
HOLDER ROD



CABINET BRACKET



LATCH ASSEMBLY



LATCH BAR GUIDE

GENERAL NOTES

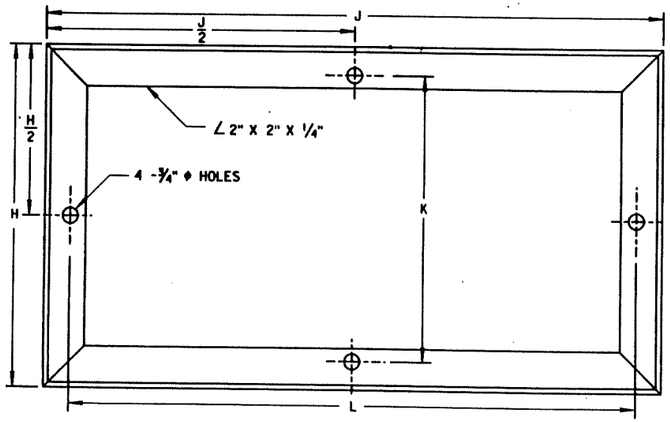
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

PRIME WITH PHOSPHATE TREATMENT AND PRIMER.

FINISH EXTERIOR SURFACES WITH RUSTOLEUM #906 SILVER GRAY OR APPROVED EQUAL.

FINISH INTERIOR WITH RUSTOLEUM #2766 HIGH GLOSS WHITE ENAMEL OR APPROVED EQUAL.

ALL SHEET METAL PARTS SHALL BE 12 GA. HRP&O.



MOUNTING BASE

TABLE OF DIMENSIONS (INCHES)

MARK	CABINET TYPE		
	3060	3860	3866
A	30	38	38
B	60	60	66
C	16 1/2	16 1/2	24
D	26 1/2	34 3/4	33 3/4
E	38 3/4	38 3/4	38 3/4
F	26 1/2	34 3/4	33 3/4
G	19	19	25
H	16 1/2	16 1/2	24
H/2	8 1/4	8 1/4	12
J	30	38	38
J/2	15	19	19
K	13 3/4	13 3/4	21 1/4
L	27 1/2	35 1/2	35 1/2

SIGNAL OR LIGHTING CONTROL CABINET

STATE OF WISCONSIN
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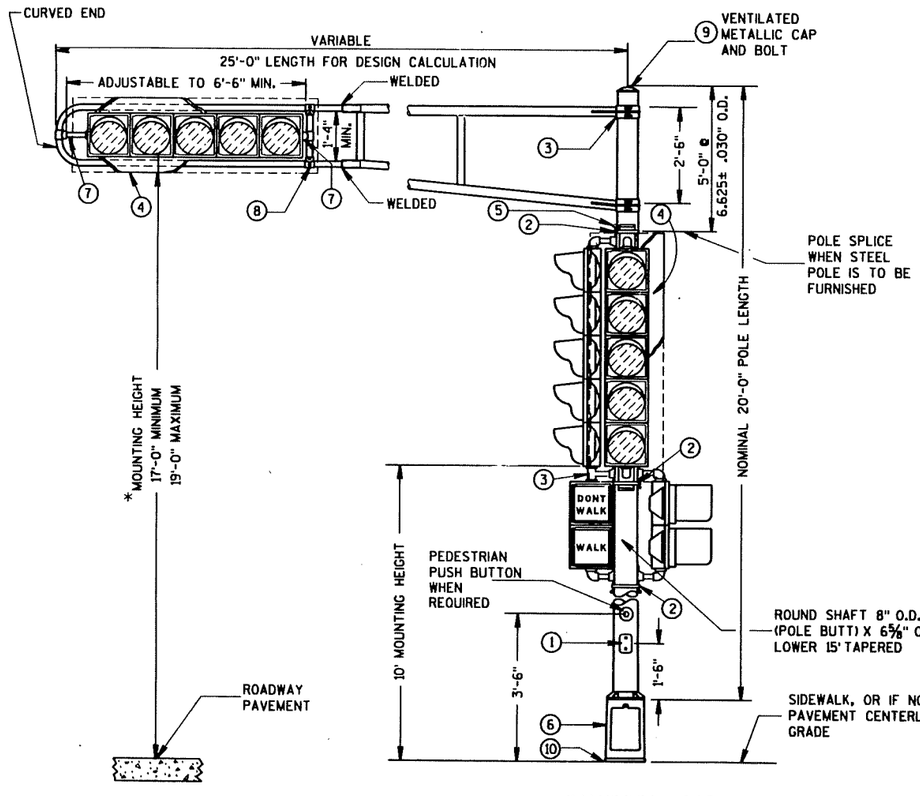
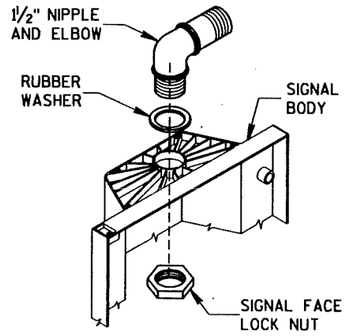
FHWA

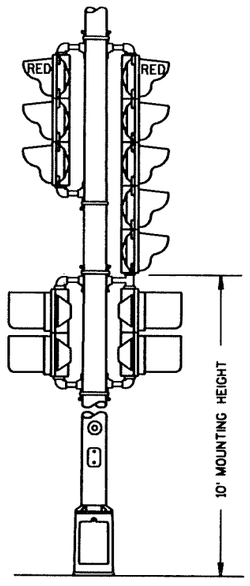
S.D.D. 9 D 2-1



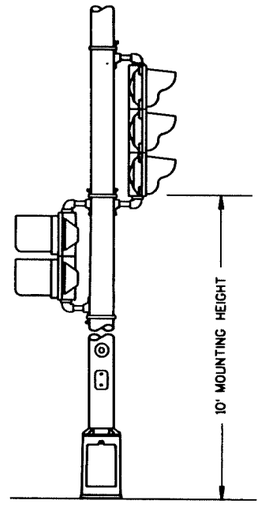
(MAXIMUM LOAD)



SIGNAL FACE MOUNTING DETAIL



TYPICAL MOUNTING OF BACK TO BACK 3 AND 5 SECTION SIGNAL FACES



TYPICAL MOUNTING OF 3 SECTION SIGNAL FACE

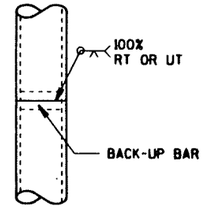
TYPE 2 POLE MOUNTING CONFIGURATION

GENERAL NOTES

1. 4" X 6" REINFORCED HANDHOLE & COVER ASSEMBLY WITH 2 (TWO) ¼" X ¾" - 20 TPI HEX HEAD STAINLESS STEEL BOLTS.
2. SIGNAL FACE MOUNTING BRACKETS, MOUNT WITH CAP SCREWS AND BANDING. (SEE SPECIAL PROVISIONS).
3. GROMMETS, 1" CHASE NIPPLES OR 1" CLOSE CONDUIT NIPPLES WITH BUSHINGS SHALL BE PROVIDED FOR 1⅜" HOLE IN POLE SHAFT FOR WIRING.
4. BACKBOARDS ARE REQUIRED AT ALL TIMES ON TROMBONE MAST ARM MOUNTED SIGNAL FACES. VERTICAL MOUNTED SIGNAL FACES WITH BACKBOARDS REQUIRED ARE LOCATED AS SHOWN ON THE PLANS. BACKBOARDS ARE REQUIRED TO SURROUND SIGNAL FACES. BACKBOARDS SHALL EXTEND 5" BEYOND EXTREMITIES OF THE SIGNAL FACE.
5. POLE MOUNTED SIGNAL FACES SHALL REQUIRE 1 OR MORE MOUNTING SPACERS UNDER THE TOP MOUNTING BRACKET(S) AS REQUIRED, TO PLUMB THE SIGNAL FACES.
6. CAST ALUMINUM TRANSFORMER BASE, WHEN REQUIRED.
7. 1½" PIPE THREAD ON THE MOUNTING BRACKET NIPPLES FOR THE SIGNAL FACE. NIPPLE SHALL BE 1½" X 2".
8. VERTICAL STRUT (ADJUSTABLE). ONE (1) SET SCREW (¼" X ¾" LONG- 20 TPI, STAINLESS STEEL, HEX HEAD) INTO EACH ARM MEMBER IF STRUT IS THE SLIDING TYPE.
9. FURNISH AND INSTALL VENTILATED, CAST, METALLIC (ALUMINUM ALLOY) CAPS. FASTEN CAPS WITH ONE (1) ¼" X ¾" - 20 TPI STAINLESS STEEL, HEX HEAD BOLT.
10. SHIMMING, IF NEEDED, SHALL BE LOCATED BETWEEN THE CONCRETE FOUNDATION AND THE TRANSFORMER BASE.

*MOUNTING HEIGHT LIMITATION DIMENSIONS OF THE TROMBONE MAST ARM WILL BE DEPENDENT UPON THE USE/NON-USE OF A TRANSFORMER BASE.

WELD TO BE 100% R.T. OR U.T. TESTED AS PER THE REQUIREMENTS OF AWS D 1.5-88. RECORDS OF CERTIFICATION OF COMPLIANCE OF SUCH TESTING SHALL BE FURNISHED TO THE PROJECT ENGINEER FOR APPROVAL PRIOR TO SHIPMENT OF THE POLES. VERIFICATION AND APPROVAL OF THE TESTING CERTIFICATION FROM THE MANUFACTURER SHALL BE COMPLETED BY THE CENTRAL OFFICE BRIDGE SECTION.



NOTE:
SHEET SDD 9 E 1-1a IS REQUIRED WHEN THIS DRAWING IS CALLED FOR IN THE PLANS.

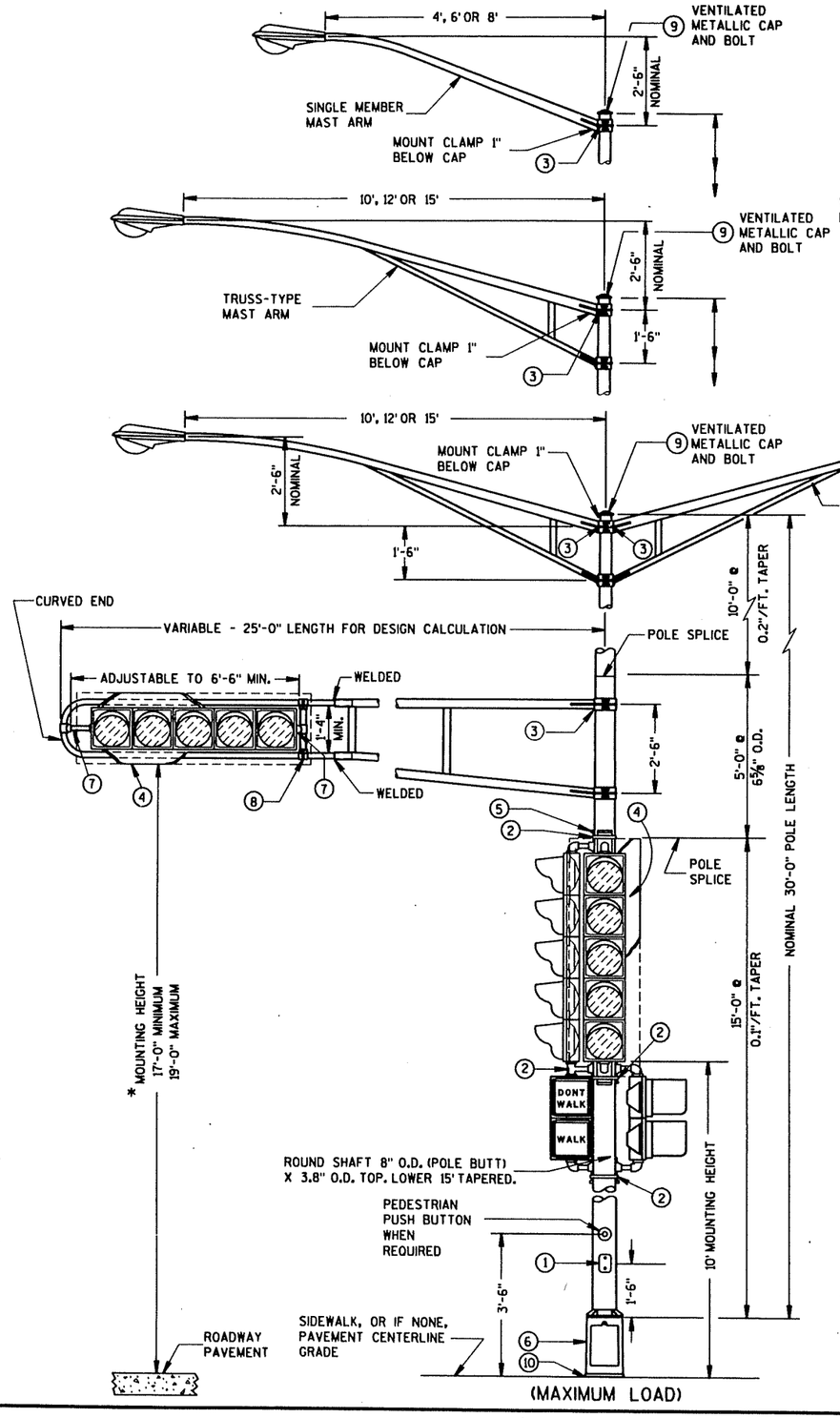
DESIGN NOTE: (WILL NOT APPEAR ON CONTRACT PLANS)
THIS DETAIL IS APPLICABLE WHEN SIGNALS ARE MOUNTED ON A TROMBONE ARM. DO NOT USE FOR LIGHTING.

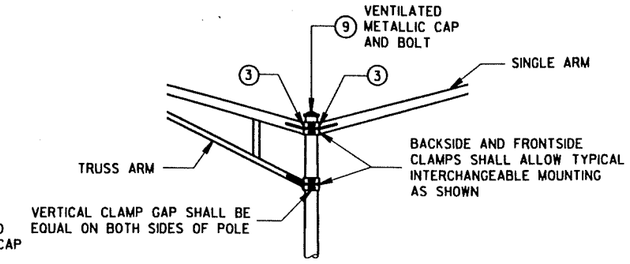
POLE MOUNTINGS FOR TRAFFIC SIGNALS TYPE 2

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

S.D.D. 9 E 1-1a

S.D.D. 9 E 1-1a

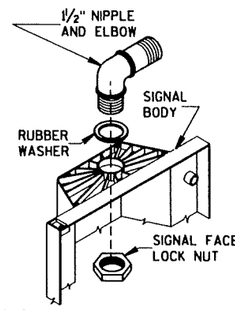




INTERCHANGEABLE MOUNTING DETAIL

LUMINAIRE

WT. - 50 LBS.
EFFECTIVE PROJECTED AREA FOR WIND LOADING = 1.5 SQ. FT.



SIGNAL FACE MOUNTING DETAIL

GENERAL NOTES

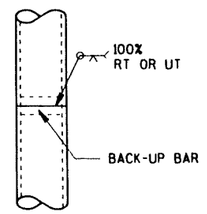
ALL LUMINAIRE POLE MOUNTINGS SHALL BE DESIGNED FOR TWIN 15' ARMS WITH LUMINAIRES.

THE SLIPFITTER END OF THE LUMINAIRE MAST ARM SHALL BE A NOMINAL 2⅜ INCHES IN OUTSIDE DIAMETER. THE STRAIGHT PORTION OF THE SLIPFITTER END OF THE LUMINAIRE MAST ARM SHALL BE A NOMINAL 12 INCHES IN LENGTH.

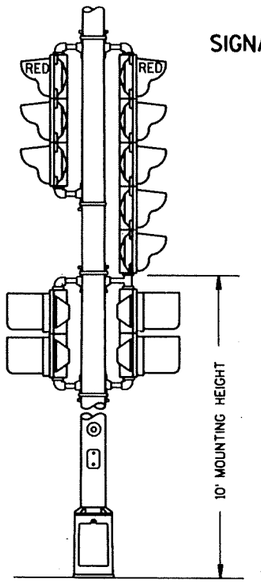
1. 4" X 6" REINFORCED HANDHOLE & COVER ASSEMBLY WITH 2 (TWO) 1/4" X ¾" - 20 TPI HEX HEAD STAINLESS STEEL BOLTS.
2. SIGNAL FACE MOUNTING BRACKETS, MOUNT WITH CAP SCREWS AND BANDING. (SEE SPECIAL PROVISIONS).
3. GROMMETS, 1" CHASE NIPPLES OR 1" CLOSE CONDUIT NIPPLES WITH BUSHINGS SHALL BE PROVIDED FOR 1⅜" HOLE IN POLE SHAFT FOR WIRING.
4. BACKBOARDS ARE REQUIRED AT ALL TIMES ON TROMBONE MAST ARM MOUNTED SIGNAL FACES. VERTICAL MOUNTED SIGNAL FACES WITH BACKBOARDS REQUIRED ARE LOCATED AS SHOWN ON THE PLANS. BACKBOARDS ARE REQUIRED TO SURROUND SIGNAL FACES. BACKBOARDS SHALL EXTEND 5" BEYOND EXTREMITIES OF THE SIGNAL FACE.
5. POLE MOUNTED SIGNAL FACES SHALL REQUIRE 1 OR MORE MOUNTING SPACERS UNDER THE TOP MOUNTING BRACKET(S) AS REQUIRED, TO PLUMB THE SIGNAL FACE.
6. CAST ALUMINUM TRANSFORMER BASE, WHEN REQUIRED.
7. 1½" PIPE THREAD ON THE MOUNTING BRACKET NIPPLES FOR THE SIGNAL FACE. NIPPLE SHALL BE 1½" X 2".
8. VERTICAL STRUT (ADJUSTABLE). ONE (1) SET SCREW (1/4 " X ¾" -20 TPI, STAINLESS STEEL, HEX HEAD) INTO EACH ARM MEMBER IF STRUT IS THE SLIDING TYPE.
9. FURNISH AND INSTALL VENTILATED, CAST, METALLIC (ALUMINUM ALLOY CAPS. FASTEN CAPS WITH ONE (1) 1/4" X ¾" - 20 TPI STAINLESS STEEL, HEX HEAD BOLT.
10. SHIMMING, IF NEEDED, SHALL BE LOCATED BETWEEN THE CONCRETE FOUNDATION AND THE TRANSFORMER BASE.

* MOUNTING HEIGHT LIMITATION DIMENSIONS OF THE TROMBONE MAST ARM WILL BE DEPENDENT UPON THE USE/NON-USE OF A TRANSFORMER BASE.

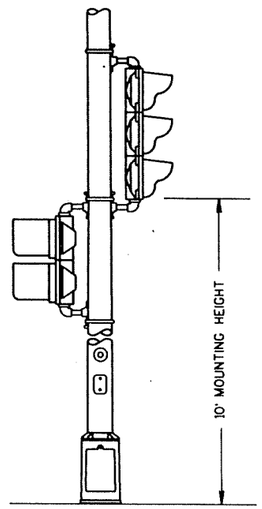
WELD TO BE 100% R.T. OR U.T. TESTED AS PER THE REQUIREMENTS OF AWS D 1.5-88. RECORDS OF COMPLIANCE OF SUCH TESTING SHALL BE FURNISHED TO THE PROJECT ENGINEER FOR APPROVAL PRIOR TO SHIPMENT OF THE POLES. VERIFICATION AND APPROVAL OF THE TESTING CERTIFICATION FROM THE MANUFACTURER SHALL BE COMPLETED BY THE CENTRAL OFFICE BRIDGE SECTION.



POLE SPLICE DETAIL



TYPICAL MOUNTING OF BACK TO BACK 3 AND 5 SECTION SIGNAL FACES



TYPICAL MOUNTING OF 3 SECTION SIGNAL FACE

TYPE 3 POLE MOUNTING CONFIGURATION

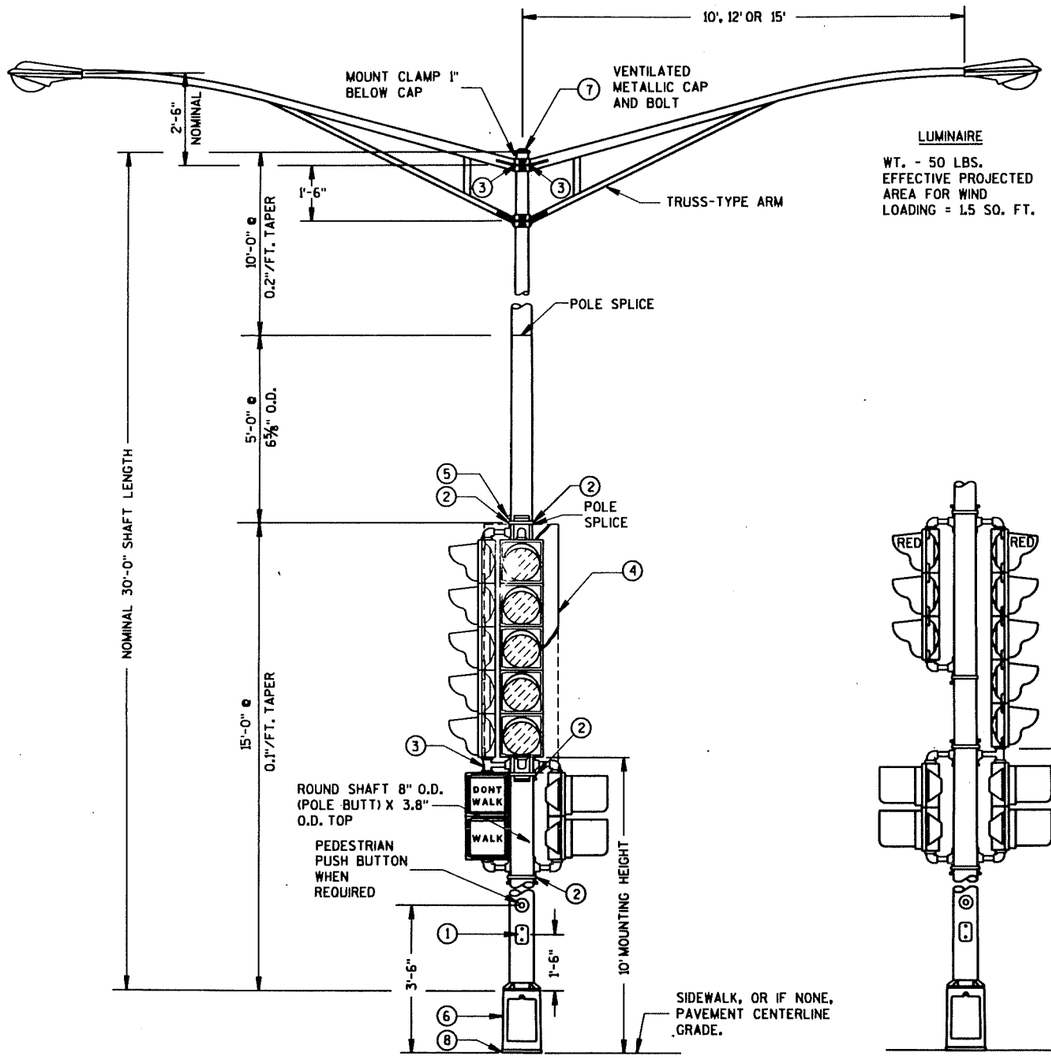
NOTE:
SHEET SDD 9 E 1-1a IS REQUIRED WHEN THIS DRAWING IS CALLED FOR IN THE PLANS.

POLE MOUNTINGS FOR TRAFFIC SIGNALS AND LIGHTING UNITS, TYPE 3

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

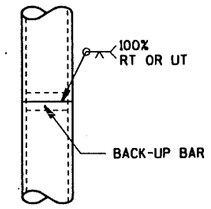
S.D.D. 9 E 1-1b

S.D.D. 9 E 1-1b

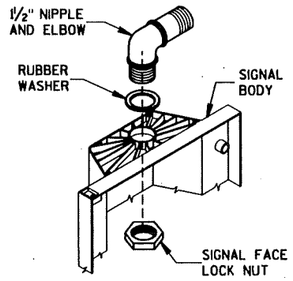


(MAXIMUM LOAD)

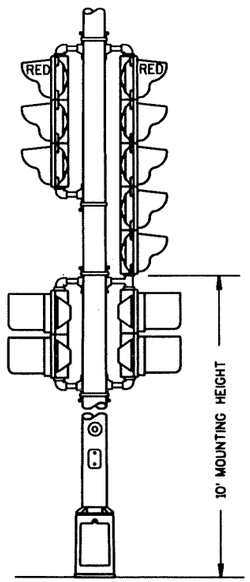
WELD TO BE 100% R.T. OR U.T. TESTED AS PER THE REQUIREMENTS OF AWS D 1.5-88. RECORDS OF CERTIFICATION OF COMPLIANCE OF SUCH TESTING SHALL BE FURNISHED TO THE PROJECT ENGINEER FOR APPROVAL PRIOR TO THE SHIPMENT OF THE POLES. VERIFICATION AND APPROVAL OF THE TESTING CERTIFICATION FROM THE MANUFACTURER SHALL BE COMPLETED BY THE CENTRAL OFFICE BRIDGE SECTION.



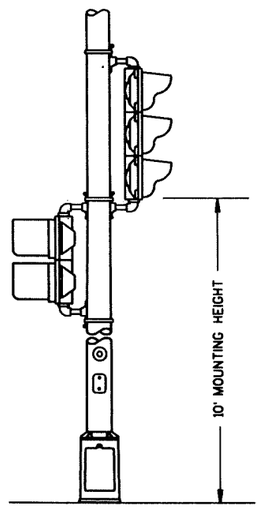
POLE SPLICE DETAIL



SIGNAL FACE MOUNTING DETAIL



TYPICAL MOUNTING OF BACK TO BACK 3 AND 5 SECTION SIGNAL FACES



TYPICAL MOUNTING OF 3 SECTION SIGNAL FACE

GENERAL NOTES

THE POLE USED IN THE TYPE 4 MOUNTING CONFIGURATION SHALL BE INTERCHANGEABLE WITH, AND MEET THE LOADING REQUIREMENTS OF A TYPE 3 POLE.

ALL LUMINAIRE POLE MOUNTINGS SHALL BE DESIGNED FOR TWIN 15' ARMS WITH LUMINAIRES.

THE SLIPFITTER END OF THE LUMINAIRE MAST ARM SHALL BE A NOMINAL 2⅜ INCHES IN OUTSIDE DIAMETER. THE STRAIGHT PORTION OF THE SLIPFITTER END OF THE LUMINAIRE MAST ARM SHALL BE A NOMINAL 12 INCHES IN LENGTH.

(L.) 4" X 6" REINFORCED HANDHOLE & COVER ASSEMBLY WITH 2 (TWO) ¼" X ¾" - 20 TPI HEX HEAD STAINLESS STEEL BOLTS.

(2.) SIGNAL FACE MOUNTING BRACKETS, MOUNT WITH CAP SCREWS AND BANDING. (SEE SPECIAL PROVISIONS).

(3.) GROMMETS, 1" CHASE NIPPLES OR 1" CLOSE CONDUIT NIPPLES WITH BUSHINGS SHALL BE PROVIDED FOR 1⅜" HOLE IN POLE SHAFT FOR WIRING.

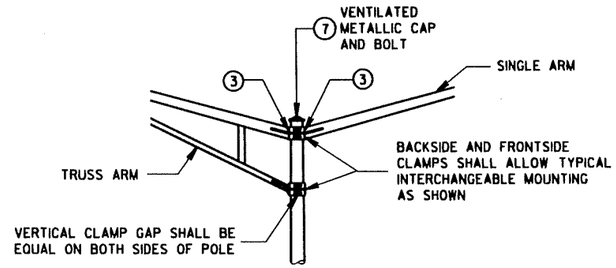
(4.) VERTICAL MOUNTED SIGNAL FACES WITH BACKBOARDS REQUIRED ARE LOCATED AS SHOWN ON THE PLANS. BACKBOARDS ARE REQUIRED TO SURROUND SIGNAL FACES. BACKBOARDS SHALL EXTEND 5" BEYOND EXTREMITIES OF SIGNAL FACE.

(5.) POLE MOUNTED SIGNAL FACES SHALL REQUIRE 1 OR MORE MOUNTING SPACERS UNDER THE TOP MOUNTING BRACKET(S) AS REQUIRED, TO PLUMB THE SIGNAL FACE.

(6.) CAST ALUMINUM TRANSFORMER BASE, WHEN REQUIRED.

(7.) FURNISH AND INSTALL VENTILATED, CAST, METALLIC (ALUMINUM ALLOY CAPS. FASTEN CAPS WITH ONE (1) ¼" X ¾" - 20 TPI STAINLESS STEEL, HEX HEAD BOLT.

(8.) SHIMMING, IF NEEDED, SHALL BE LOCATED BETWEEN THE CONCRETE FOUNDATION AND THE TRANSFORMER BASE.



INTERCHANGEABLE MOUNTING DETAIL

NOTE:
SHEET SDD 9 E1-1c IS REQUIRED WHEN THIS DRAWING IS CALLED FOR IN THE PLANS.

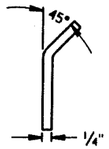
TYPE 4 POLE MOUNTING CONFIGURATION

POLE MOUNTINGS FOR TRAFFIC SIGNALS AND LIGHTING UNITS, TYPE 4

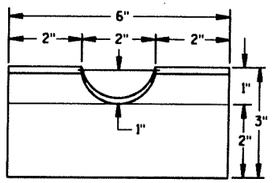
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

S.D.D. 9 E 1-1c

S.D.D. 9 E 1-1c



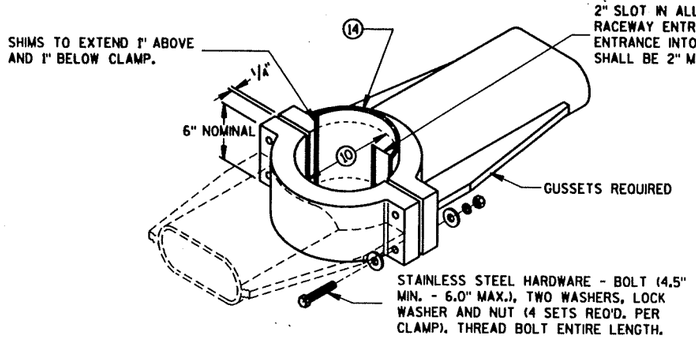
END VIEW



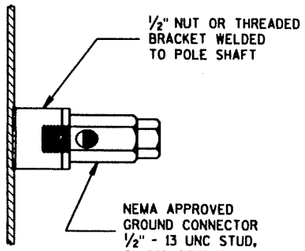
FRONT VIEW

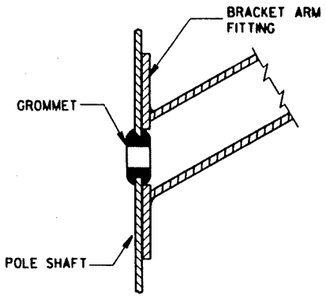
RECTANGULAR CLAMP SHIM

(4 TO A SET)



TYPICAL TROMBONE MAST ARM AND LUMINAIRE MAST ARM MOUNTING CLAMP





TYPICAL APPLICATION OF GROMMET IN POLE SHAFT

GENERAL NOTES

(10.) 4.5" I.D. FOR LUMINAIRE MAST ARM CLAMP.
6.625" I.D. FOR TROMBONE MAST ARM CLAMP.

(11.) INDIVIDUAL BASE PLATE ANCHOR BOLT COVERS. (4 REQUIRED)

(12.) BASE PLATE SLOTTED TO ACCEPT 11" THROUGH 12" BOLT CIRCLE USING 1" DIAMETER ANCHOR BOLTS.

(13.) OUTSIDE SHIM DIAMETER - (4.5" O.D. FOR LUMINAIRE MAST ARM)
(6.625" O.D. FOR TROMBONE MAST ARM)

(14.) VARIABLE SHIM THICKNESS - (0.10", 0.25", 0.35", 0.53" OR 0.70")

SHIM THICKNESS FOR TROMBONE MAST ARMS MAY BE TYPICALLY 0.35", 0.53" OR 0.70".

SHIM THICKNESS FOR LUMINAIRE MAST ARMS MAY BE TYPICALLY 0.10", 0.25" OR 0.35".

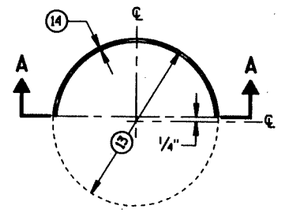
SHIM MATERIAL SHALL BE ALUMINUM ALLOY.

SHIM THICKNESS SHALL BE IMPRESSED INTO EACH SHIM. NUMERALS SHALL BE 1/4" HIGH AND LEGIBLE.

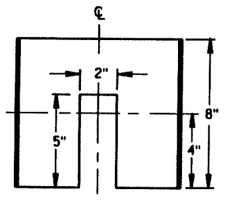
THE CONTRACTOR SHALL SUBMIT TWO COPIES OF ALL SHIM SHOP DRAWINGS TO THE ENGINEER FOR APPROVAL.

(15.) LEVELING SHIMS, DESIGNED FOR THE PURPOSE, SHALL BE USED WHEN PLUMBING POLES. THE USE OF WASHERS IN LIEU OF PROPER LEVELING SHIMS IS NOT ACCEPTABLE. LEVELING SHIMS SHALL BE USED ONLY BETWEEN THE TOP OF THE CONCRETE BASE AND A METALLIC BASE PLATE.

SHIM LENGTH SHALL BE LONG ENOUGH TO COMPLETELY COVER THE AREA UNDER THE LENGTH AND WIDTH OF THE BASE MOUNTING FLANGE.



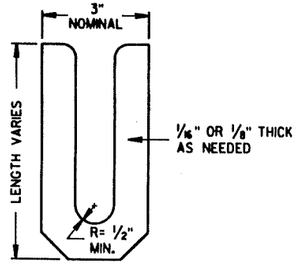
PLAN VIEW



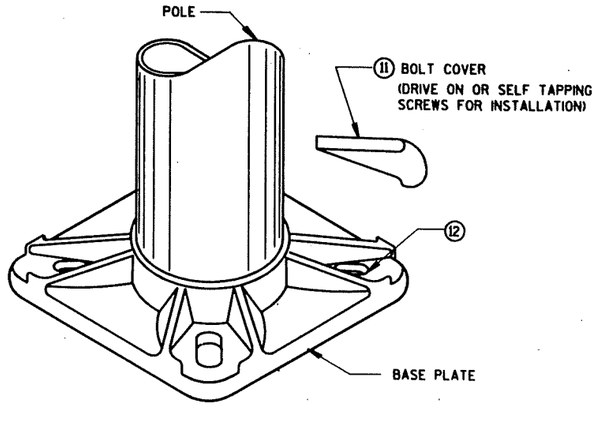
SECTION A-A

CIRCULAR CLAMP SHIM

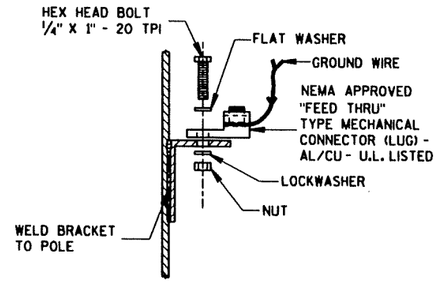
(2 TO A SET)



LEVELING SHIM (15)

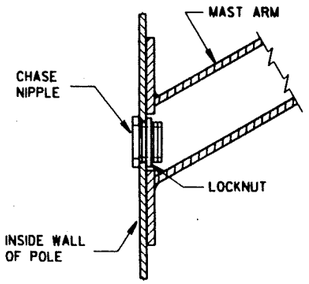


BASE PLATE

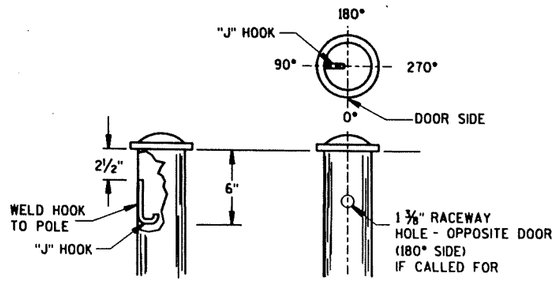


TYPICAL GROUNDING CONNECTIONS

NUT, BOLT AND WASHERS SHALL BE STAINLESS STEEL



TYPICAL APPLICATION OF CHASE NIPPLE IN POLE SHAFT



TYPICAL "J" HOOK LOCATION

NOTE:
THIS DRAWING IS REQUIRED WHEN DRAWINGS SDD 9 E 1-1a,b,c, OR d IS CALLED FOR IN THE PLANS.

HARDWARE DETAILS FOR POLE MOUNTINGS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

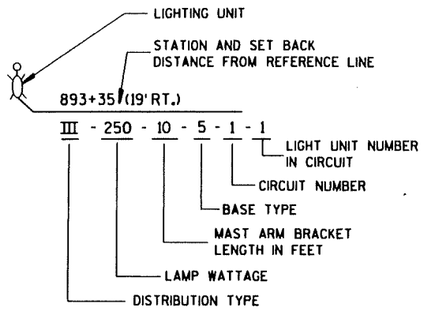
4/21/93 DATE — STATE ELECTRICAL ENGR FOR HWYS

4/21/93 DATE — STATE TRAFFIC ENGINEER FOR HWYS

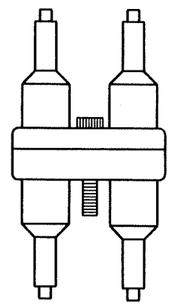
FHWA

S.D.D. 9 E 1-1e

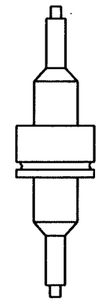
S.D.D. 9 E 1-1e



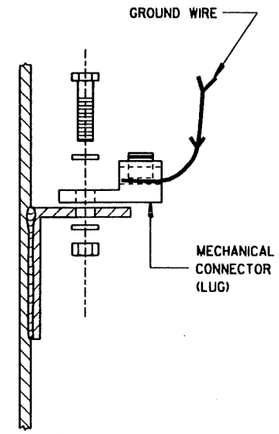
LIGHTING UNIT CODE

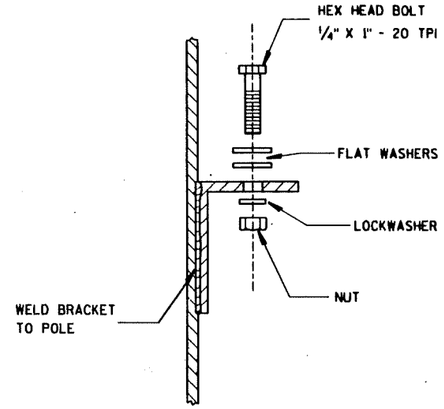


DETAIL "A"
DOUBLE POLE



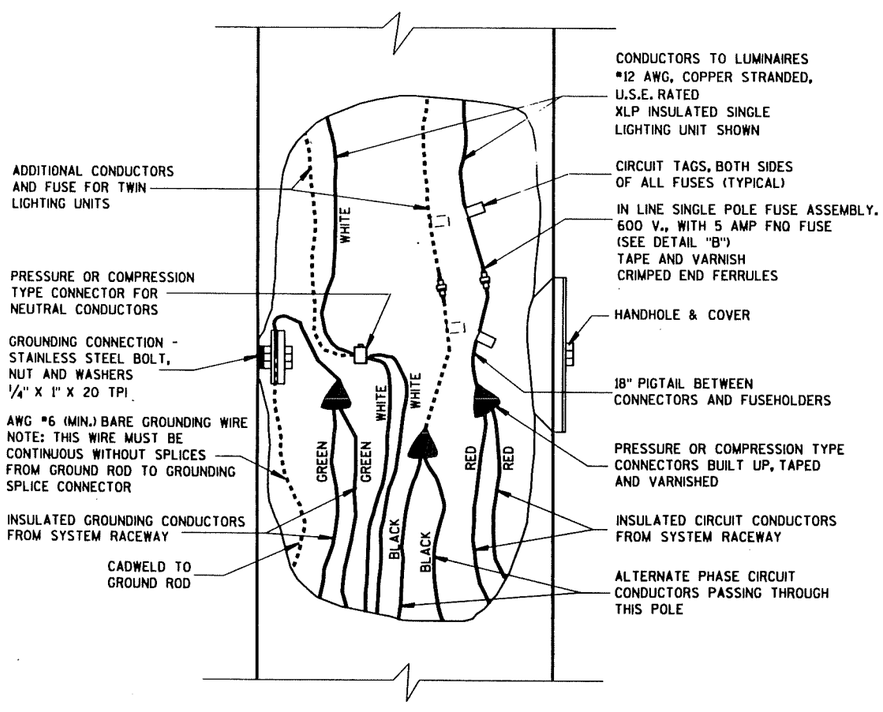
DETAIL "B"
SINGLE POLE



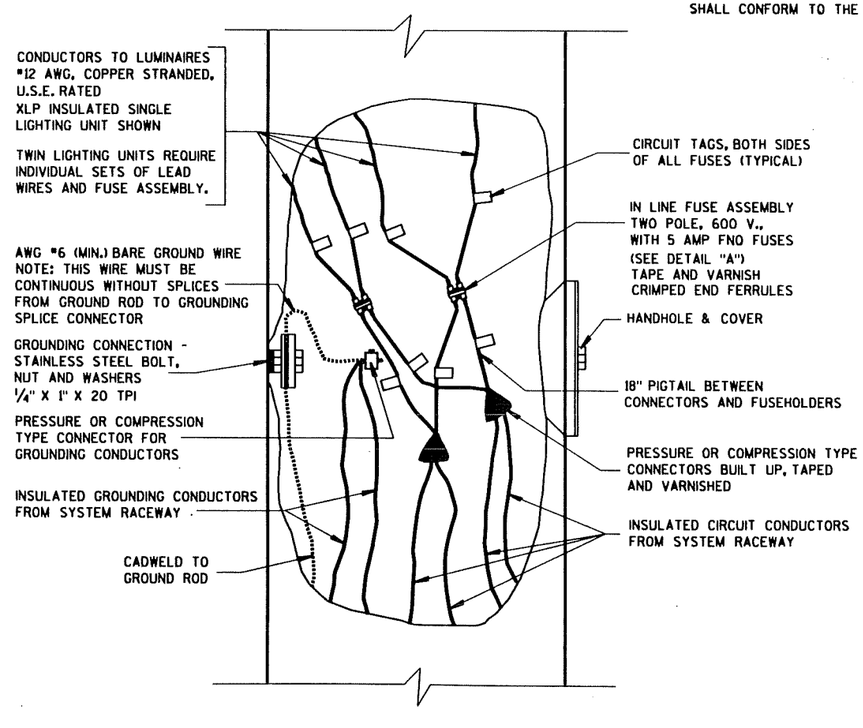


TYPICAL GROUNDING CONNECTIONS
NUT, BOLT AND WASHERS SHALL BE STAINLESS STEEL

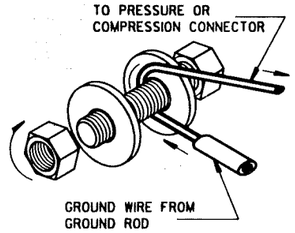
GENERAL NOTES
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.



3 WIRE - 120, 240 OR 480 VOLTS TO GROUND
2 WIRE - 120 VOLTS TO GROUND



2 WIRE - 240 OR 480 VOLTS (UNGROUNDED)



GROUND WIRE INSTALLATION BETWEEN TWO WASHERS

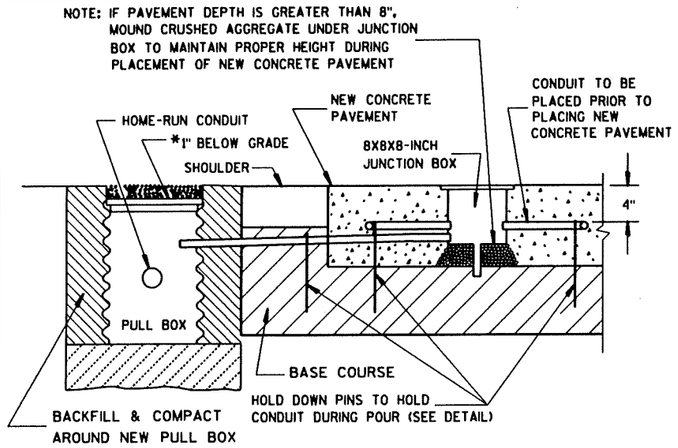
NON-FREEWAY LIGHTING UNIT POLE WIRING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4/21/93 DATE — STATE ELECTRICAL ENGR FOR HWYS
4/21/93 DATE — STATE TRAFFIC ENGINEER FOR HWYS
FHWA

S.D.D. 9 E 3-1

S.D.D. 9 E 3-1



SECTION A-A
NO CURB & GUTTER

LOOP DETECTOR INSTALLATION DETAIL

*RECESS PULL BOX SO THAT THE COVER IS 3" BELOW GRADE IN SHOULDER AREAS OF CRUSHED AGGREGATE, BACKFILL OVER COVER WITH THE CRUSHED AGGREGATE TO BRING THE AREA TO GRADE LEVEL.

GENERAL NOTES

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

LOOP SIZE, LOCATION, NUMBER OF TURNS OF WIRE AND ASSOCIATED SIGNAL PHASE SHALL BE AS SHOWN ON THE PLANS.

PITCH LEAD OUT CONDUIT TO DRAIN TO ROADSIDE PULL BOX.

SPLICES SHALL BE INSTALLED BY USING CAST IN PLACE SPLICE KITS SUCH AS 3M TYPE 82A1 OR APPROVED EQUAL. NON-INSULATED BUTT SPLICES TO FIT #12 AWG STRANDED WIRE SHALL BE USED. SPLICES SHALL BE SOLDERED AND INSULATED FROM EACH OTHER AS PER INSTRUCTIONS INCLUDED IN THE SPLICE KIT.

THE GROUND RESISTANCE READING OF THE LOOP SHALL READ "INFINITY" TO GROUND ON AN OHMMETER USING A MULTIPLIER SCALE OF 1 MEGOHM AND AN INPUT RESISTANCE OF 11 MEGOHMS MINIMUM BEFORE SPLICING THE LOOP TO THE LEAD-IN CABLE.

AFTER SPLICING THE LOOP WIRE TO THE LOOP LEAD-IN CABLE, THE CONTRACTOR SHALL MEASURE INDUCTANCE, GROUND RESISTANCE AND WIRE RESISTANCE AT THE CABINET END OF THE LEAD-IN CABLE AND FURNISH A COPY OF THE READINGS TO THE PROJECT ENGINEER FOR EVALUATION.

ANTI-SIEZE LUBRICATING MATERIAL SHALL BE USED ON ALL THREADS OF THREADED ASSEMBLIES BEFORE INSTALLATION.

LOOP DETECTOR LEADS SHALL BE IDENTIFIED WITH THEIR ASSOCIATED LOOP BY USE OF WATERPROOF TAGS AT BOTH ENDS OF THE CABLE. A LISTING OF THE CABLE IDENTIFICATION PER INDIVIDUAL LOOP LEAD-IN SHALL BE PLACED IN THE CABINET.

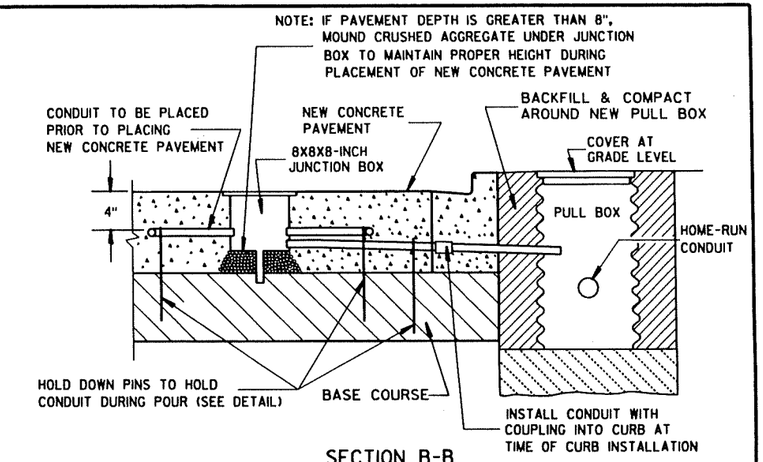
ANY PVC LEADOUT CONDUIT CONTAINING MORE THAN ONE TWISTED PAIR OF LOOP LEAD WIRE SHALL BE 2".

THE #12 AWG LOOP WIRE FROM THE LOOP TO THE ROADSIDE PULL BOX, SHALL BE HAND TWISTED AT LEAST 3 TURNS PER FOOT BEFORE INSTALLATION.

SPLICES OF LOOP WIRE TO LEAD-IN CABLE SHALL BE MADE ONLY IN PULL BOXES AT THE SIDE OF THE ROAD.

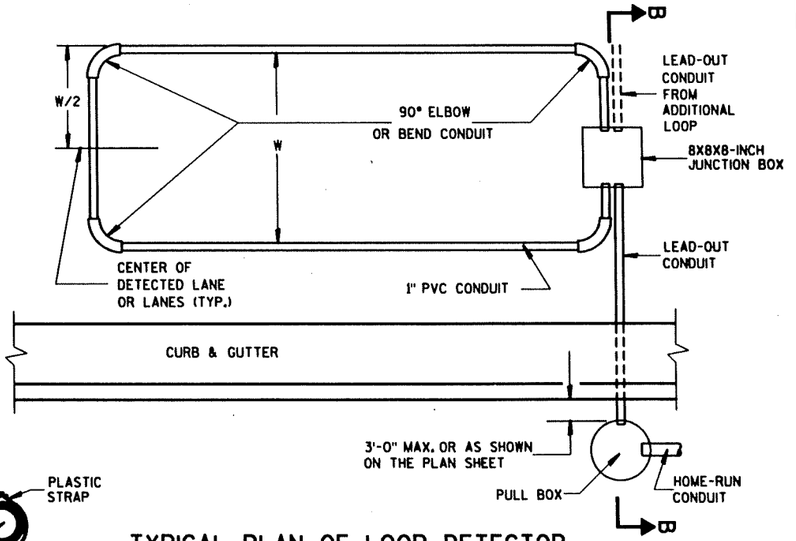
THE #12 AWG LOOP WIRE SHALL BE INSTALLED FROM THE ROAD SIDE PULL BOX, THROUGH THE JUNCTION BOX, THROUGH THE LOOP CONDUIT, BACK TO THE ROADSIDE PULL BOX, AND BE INSTALLED IN ONE, NON-SPLICED CONTINUOUS LENGTH.

PROTECTION OF THE JUNCTION BOX AND RELATED CONDUITS SHALL BE REQUIRED AFTER INSTALLATION AND BEFORE NEW CONCRETE PAVEMENT IS POURED.

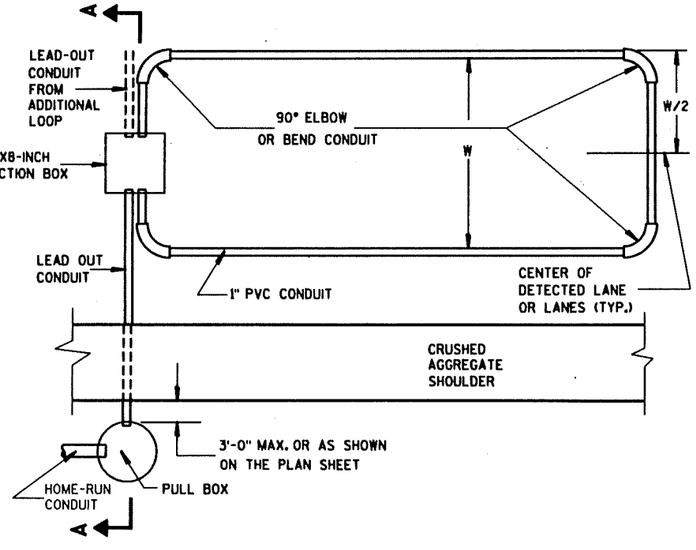


SECTION B-B
CURB & GUTTER

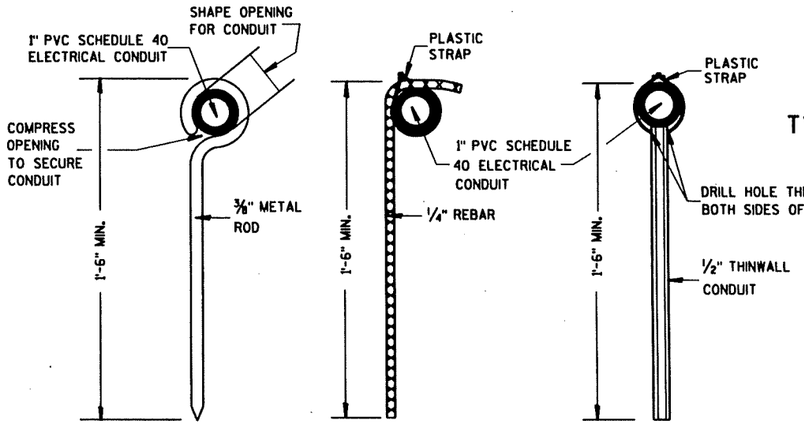
DETECTOR LOOP INSTALLATION DETAIL



TYPICAL PLAN OF LOOP DETECTOR WITH 8X8X8-INCH JUNCTION BOX



TYPICAL PLAN OF LOOP DETECTOR WITH 8X8X8-INCH JUNCTION BOX



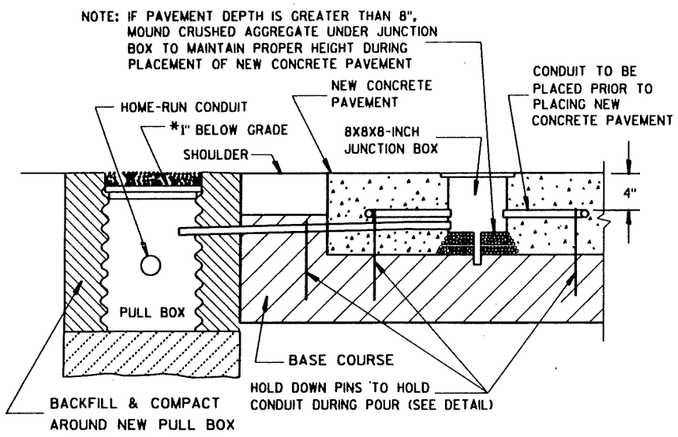
TYPICAL DETAILS FOR HOLD DOWN PINS

LOOP DETECTOR INSTALLED IN NEW CONCRETE PAVEMENT 8X8X8-INCH JUNCTION BOX

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4/21/93 DATE — STATE ELECTRICAL ENGR FOR HWYS
4/21/93 DATE — STATE TRAFFIC ENGINEER FOR HWYS
FHWA

S.D.D. 9 F 2-1



SECTION A-A
NO CURB & GUTTER
LOOP DETECTOR INSTALLATION DETAIL

*RECESS PULL BOX SO THAT THE COVER IS 3" BELOW GRADE IN SHOULDER AREAS OF CRUSHED AGGREGATE. BACKFILL OVER COVER WITH THE CRUSHED AGGREGATE TO BRING THE AREA TO GRADE LEVEL.

GENERAL NOTES

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

LOOP SIZE, LOCATION, NUMBER OF TURNS OF WIRE AND ASSOCIATED SIGNAL PHASE SHALL BE AS SHOWN ON THE PLANS.

PITCH LEAD OUT CONDUIT TO DRAIN TO ROADSIDE PULL BOX.

SPLICES SHALL BE INSTALLED BY USING CAST IN PLACE SPLICE KITS SUCH AS 3M TYPE 82A1 OR APPROVED EQUAL. NON-INSULATED BUTT SPLICES TO FIT #12 AWG STRANDED WIRE SHALL BE USED. SPLICES SHALL BE SOLDERED AND INSULATED FROM EACH OTHER AS PER INSTRUCTIONS INCLUDED IN THE SPLICE KIT.

THE GROUND RESISTANCE READING OF THE LOOP SHALL READ "INFINITY" TO GROUND ON AN OHMMETER USING A MULTIPLIER SCALE OF 1 MEGOHM AND AN INPUT RESISTANCE OF 11 MEGOHMS MINIMUM BEFORE SPLICING THE LOOP TO THE LEAD-IN CABLE.

AFTER SPLICING THE LOOP WIRE TO THE LOOP LEAD-IN CABLE, THE CONTRACTOR SHALL MEASURE INDUCTANCE, GROUND RESISTANCE AND WIRE RESISTANCE AT THE CABINET END OF THE LEAD-IN CABLE AND FURNISH A COPY OF THE READINGS TO THE PROJECT ENGINEER FOR EVALUATION.

ANTI-SIEZE LUBRICATING MATERIAL SHALL BE USED ON ALL THREADS OF THREADED ASSEMBLIES BEFORE INSTALLATION.

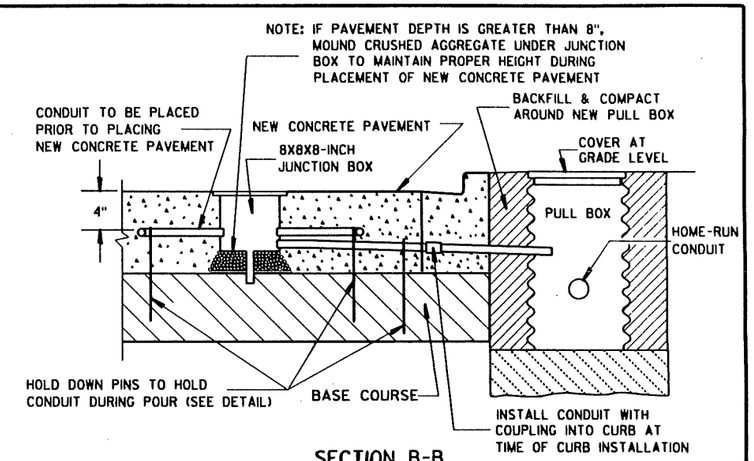
LOOP DETECTOR LEADS SHALL BE IDENTIFIED WITH THEIR ASSOCIATED LOOP BY USE OF WATERPROOF TAGS AT BOTH ENDS OF THE CABLE. A LISTING OF THE CABLE IDENTIFICATION PER INDIVIDUAL LOOP LEAD-IN SHALL BE PLACED IN THE CABINET.

THE #12 AWG LOOP WIRE FROM THE LOOP TO THE ROADSIDE PULL BOX, SHALL BE HAND TWISTED AT LEAST 3 TURNS PER FOOT BEFORE INSTALLATION.

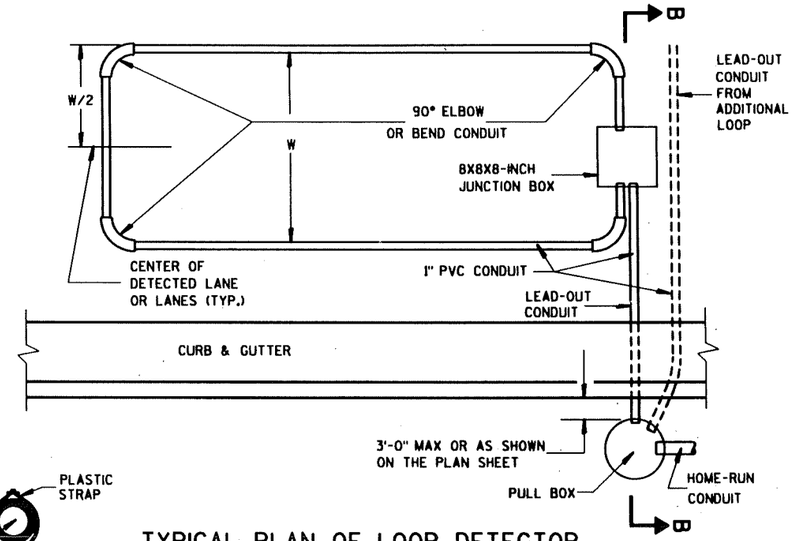
SPLICES OF LOOP WIRE TO LEAD-IN CABLE SHALL BE MADE ONLY IN PULL BOXES AT THE SIDE OF THE ROAD.

THE #12 AWG LOOP WIRE SHALL BE INSTALLED FROM THE ROAD SIDE PULL BOX, THROUGH THE JUNCTION BOX, THROUGH THE LOOP CONDUIT, BACK TO THE ROADSIDE PULL BOX, AND BE INSTALLED IN ONE, NON-SPLICED CONTINUOUS LENGTH.

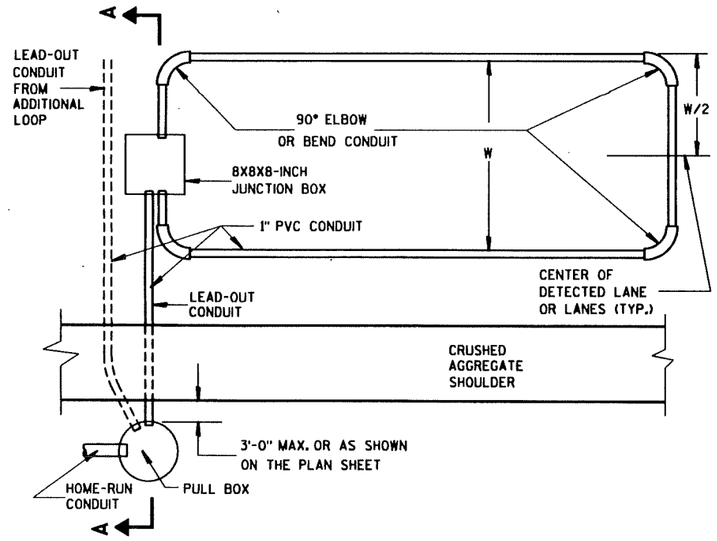
PROTECTION OF THE JUNCTION BOX AND RELATED CONDUITS SHALL BE REQUIRED AFTER INSTALLATION AND BEFORE NEW CONCRETE PAVEMENT IS POURED.



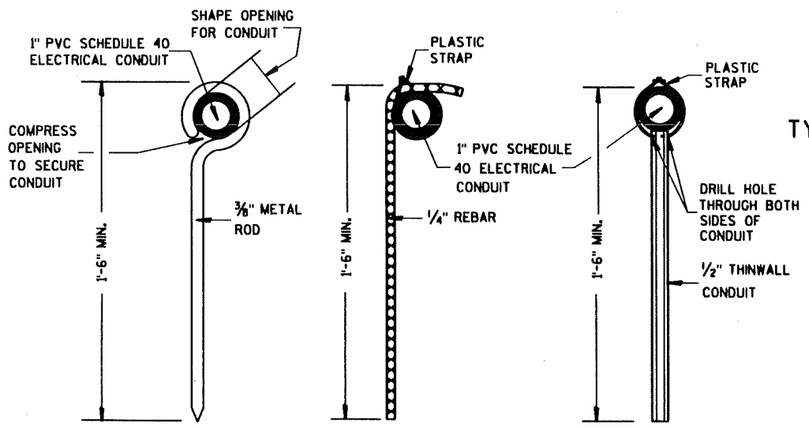
SECTION B-B
CURB & GUTTER
LOOP DETECTOR INSTALLATION DETAIL



TYPICAL PLAN OF LOOP DETECTOR
WITH 8X8X8-INCH JUNCTION BOX



TYPICAL PLAN OF LOOP DETECTOR
WITH 8X8X8-INCH JUNCTION BOX



TYPICAL DETAILS FOR HOLD DOWN PINS

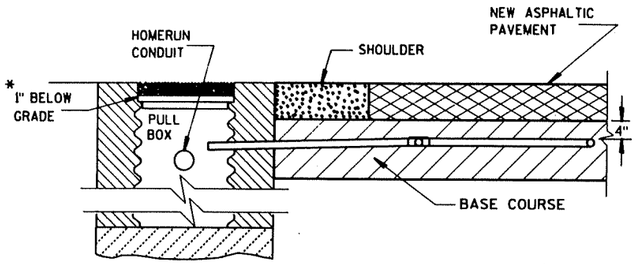
LOOP DETECTOR INSTALLED
IN NEW CONCRETE PAVEMENT
8X8X8-INCH JUNCTION BOX
(MULTIPLE LEAD-OUT)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4/21/93 DATE — STATE ELECTRICAL ENGR FOR HWYS
4/21/93 DATE — STATE TRAFFIC ENGINEER FOR HWYS
FHWA

S.D.D. 9 F 3-1

S.D.D. 9 F 3-1

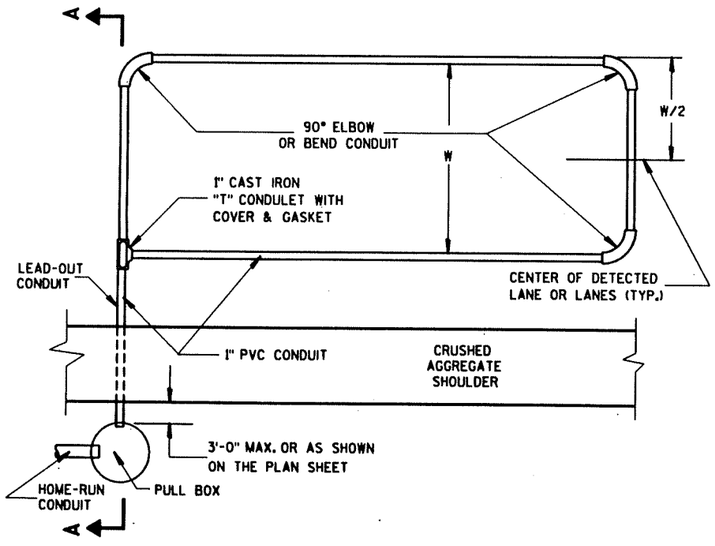


SECTION A-A

NO CURB & GUTTER

DETECTOR LOOP INSTALLATION DETAIL

*RECESS PULL BOX SO THAT THE COVER IS 3" BELOW GRADE IN SHOULDER AREAS OF CRUSHED AGGREGATE. BACKFILL OVER COVER WITH THE CRUSHED AGGREGATE TO BRING THE AREA TO GRADE LEVEL.



TYPICAL PLAN OF LOOP DETECTOR

GENERAL NOTES

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

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PITCH LEAD-OUT CONDUIT TO DRAIN TO ROADSIDE PULL BOX.

SPLICES SHALL BE INSTALLED BY USING CAST IN PLACE SPLICE KITS SUCH AS 3M TYPE 82A1 OR APPROVED EQUAL. NON-INSULATED BUTT SPLICES TO FIT #12 AWG STRANDED WIRE SHALL BE USED. SPLICES SHALL BE SOLDERED AND INSULATED FROM EACH OTHER AS PER INSTRUCTIONS INCLUDED IN THE SPLICE KIT.

THE GROUND RESISTANCE READING OF THE LOOP SHALL READ "INFINITY" TO GROUND ON AN OHMMETER USING A MULTIPLIER SCALE OF 1 MEGOHM AND AN INPUT RESISTANCE OF 11 MEGOHMS MINIMUM BEFORE SPLICING THE LOOP TO THE LEAD-IN CABLE.

AFTER SPLICING THE LOOP WIRE TO THE LOOP LEAD-IN CABLE, THE CONTRACTOR SHALL MEASURE INDUCTANCE, GROUND RESISTANCE AND WIRE RESISTANCE AT THE CABINET END OF THE LEAD-IN CABLE AND FURNISH A COPY OF THE READINGS TO THE PROJECT ENGINEER FOR EVALUATION.

ANTI-SIEZE LUBRICATING MATERIAL SHALL BE USED ON ALL THREADS OF THREADED ASSEMBLIES BEFORE INSTALLATION.

LOOP DETECTOR LEADS SHALL BE IDENTIFIED WITH THEIR ASSOCIATED LOOP BY USE OF WATERPROOF TAGS AT BOTH ENDS OF THE CABLE. A LISTING OF THE CABLE IDENTIFICATION PER INDIVIDUAL LOOP LEAD-IN SHALL BE PLACED IN THE CABINET.

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SPLICES OF LOOP WIRE TO LEAD-IN CABLE SHALL BE MADE ONLY IN PULL BOXES AT THE SIDE OF THE ROAD.

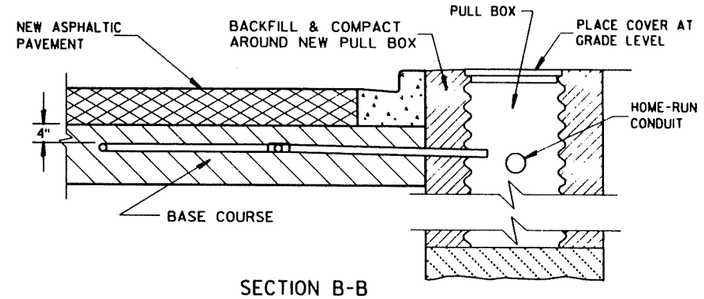
THE #12 AWG LOOP WIRE SHALL BE INSTALLED FROM THE ROADSIDE PULL BOX, THROUGH THE LOOP DUCT, BACK TO THE ROADSIDE PULL BOX, AND BE INSTALLED IN ONE, NON-SPLICED, CONTINUOUS LENGTH.

PROTECTION OF THE CONDUIT AND CONDULET SHALL BE REQUIRED AFTER INSTALLATION AND BEFORE THE ASPHALTIC PAVEMENT IS PLACED.

WHEN MULTIPLE LAYERS OF ASPHALTIC PAVEMENT ARE TO BE PLACED, LOOPS MAY BE INSTALLED BY SAWING A TWO INCH WIDE SLOT IN THE FIRST LAYER, DIG OUT THE ASPHALTIC MATERIAL AND BASE COURSE, PLACE THE LOOP, FILL THE SLOT WITH BASE COURSE MATERIAL AND NEW ASPHALTIC MATERIAL AND TAMP THE ASPHALTIC MATERIAL IN PLACE.

SHOULD TRAFFIC BE ALLOWED TO USE THE AREA OF ROADWAY WITH THE NEWLY INSTALLED LOOP BEFORE THE PLACEMENT OF THE NEXT LAYER OF ASPHALTIC PAVEMENT, THE SLOT SHALL BE SEALED AS STATED IN THE SPECIAL PROVISIONS.

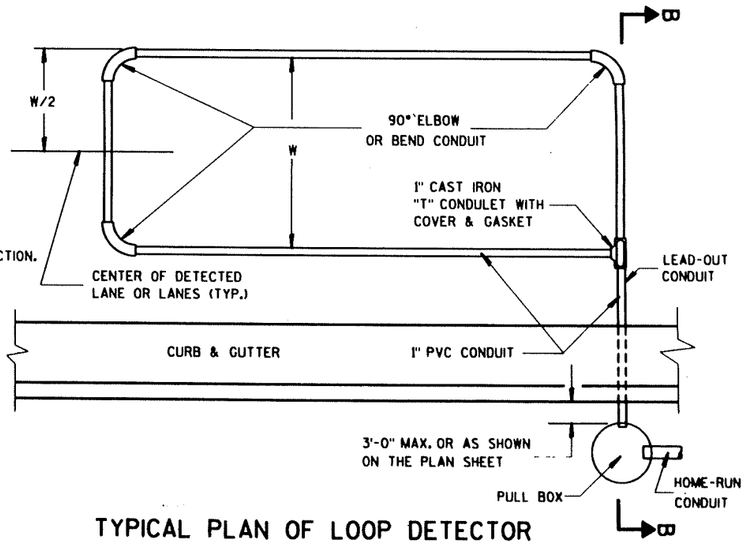
DRIVE A 1½" MAX. PK NAIL INTO THE NEW ASPHALTIC PAVEMENT AND DIRECTLY ABOVE THE CONDULET AFTER THE FINAL LAYER OF NEW ASPHALTIC PAVEMENT IS COMPLETELY INSTALLED, IF REQUIRED BY THE DISTRICT TRAFFIC SECTION.



SECTION B-B

CURB & GUTTER

LOOP DETECTOR INSTALLATION DETAIL



TYPICAL PLAN OF LOOP DETECTOR

LOOP DETECTOR PLACED IN CRUSHED AGGREGATE BASE (NEW ASPHALTIC PAVEMENT)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

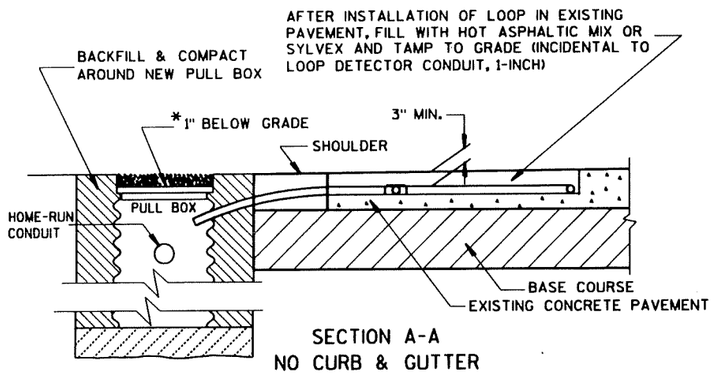
4/21/93 DATE — STATE ELECTRICAL ENGR FOR HWYS

4/21/93 DATE — STATE TRAFFIC ENGINEER FOR HWYS

FHWA

S.D.D. 9 F 8-1

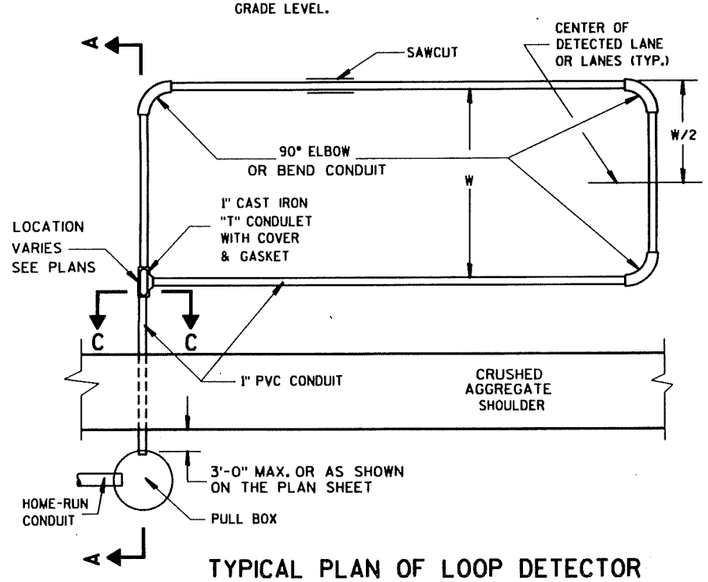
S.D.D. 9 F 8-1



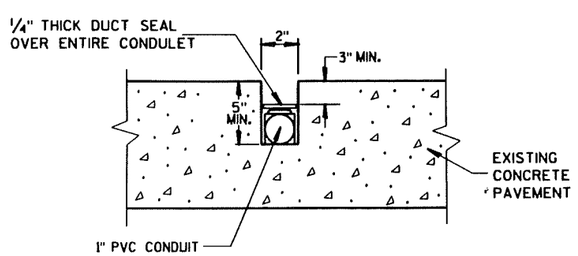
SECTION A-A
NO CURB & GUTTER

LOOP DETECTOR INSTALLATION DETAIL

*RECESS PULL BOX SO THAT THE COVER IS 3" BELOW GRADE IN SHOULDER AREAS OF CRUSHED AGGREGATE. BACKFILL OVER COVER WITH THE CRUSHED AGGREGATE TO BRING THE AREA TO GRADE LEVEL.



TYPICAL PLAN OF LOOP DETECTOR



SIDE VIEW
SECTION C-C

LOOP DETECTOR SLOT DETAIL

GENERAL NOTES

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

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PITCH LEAD OUT CONDUIT TO DRAIN TO ROADSIDE PULL BOX.

SPLICES SHALL BE INSTALLED BY USING CAST IN PLACE SPLICE KITS SUCH AS 3M TYPE 82A1 OR APPROVED EQUAL. NON-INSULATED BUTT SPLICES TO FIT #12 AWG STRANDED WIRE SHALL BE USED. SPLICES SHALL BE SOLDERED AND INSULATED FROM EACH OTHER AS PER INSTRUCTIONS INCLUDED IN THE SPLICE KIT.

THE GROUND RESISTENCE READING OF THE LOOP SHALL READ "INFINITY" TO GROUND ON AN OHMETER USING A MULTIPLIER SCALE OF 1 MEGOHM AND AN INPUT RESISTENCE OF 11 MEGOHMS MINIMUM BEFORE SPLICING THE LOOP TO THE LEAD-IN CABLE.

AFTER SPLICING THE LOOP WIRE TO THE LOOP LEAD-IN CABLE, THE CONTRACTOR SHALL MEASURE INDUCTANCE, GROUND RESISTANCE AND WIRE RESISTANCE AT THE CABINET END OF THE LEAD-IN CABLE AND FURNISH A COPY OF THE READINGS TO THE PROJECT ENGINEER FOR EVALUATION.

IN THE EVENT EPOXY IS USED AS A LOOP SLOT FILLER, THE SLOT SHALL BE TOTALLY CLEAN AND DRY BEFORE ITS INSTALLATION.

BEFORE PLACING THE 1 INCH CONDUIT IN THE CLEANED OUT SLOT, PLACE SOME OF THE TAR OR EPOXY SEALANT IN THE SLOT TO A DEPTH OF APPROXIMATELY 1/2 INCH.

ONCE THE 2" LOOP SLOT HAS BEEN CHIPPED OUT, THE LOOP INSTALLATION SHALL BE COMPLETED PRIOR TO OPENING THE LANE(S) TO TRAFFIC.

ANTI-SIEZE LUBRICATING MATERIAL SHALL BE USED ON ALL THREADS OF THREADED ASSEMBLIES BEFORE INSTALLATION.

LOOP DETECTOR LEADS SHALL BE IDENTIFIED WITH THEIR ASSOCIATED LOOP BY USE OF WATERPROOF TAGS AT BOTH ENDS OF THE CABLE. A LISTING OF THE CABLE IDENTIFICATION PER INDIVIDUAL LOOP LEAD-IN SHALL BE PLACED IN THE CABINET.

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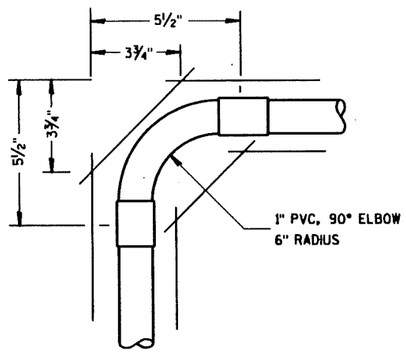
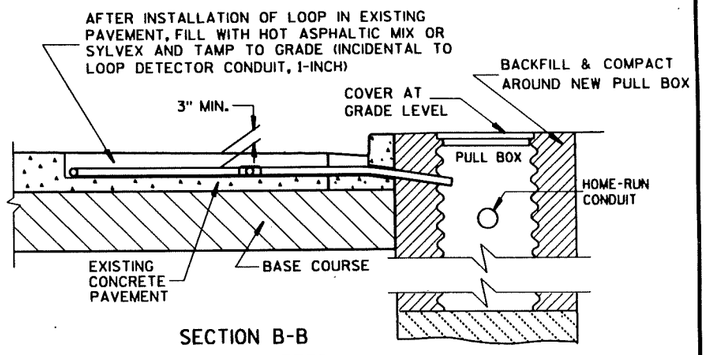


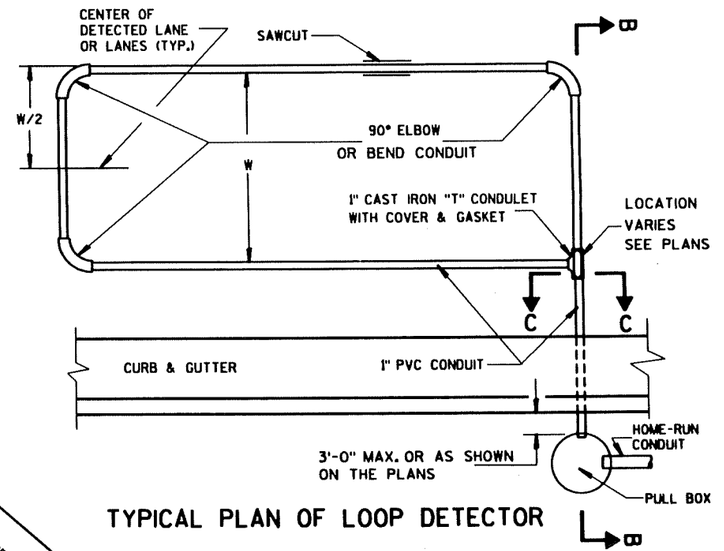
TOP VIEW

CORNER SAW SLOT DETAIL

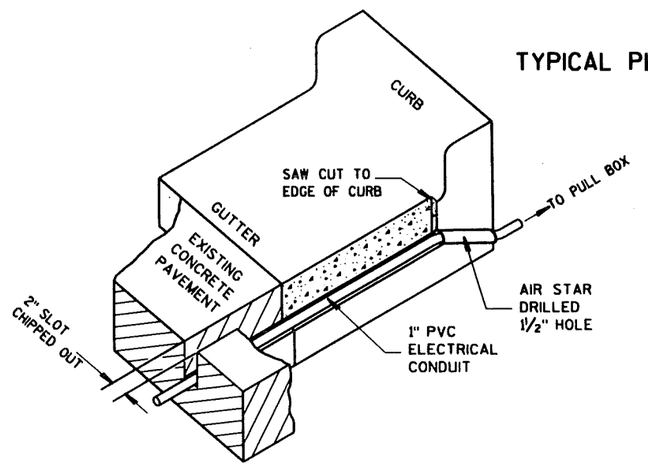


SECTION B-B
CURB & GUTTER

LOOP DETECTOR INSTALLATION DETAIL



TYPICAL PLAN OF LOOP DETECTOR



ISOMETRIC VIEW

TYPICAL SAW CUT DETAIL FOR LEAD-IN CONDUIT

LOOP DETECTOR INSTALLED IN EXISTING CONCRETE PAVEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

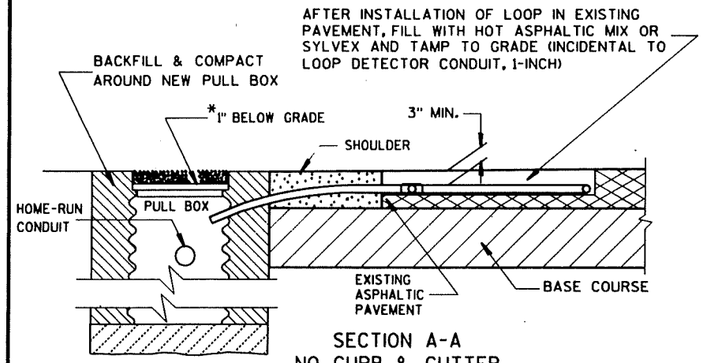
4/21/93 DATE — STATE ELECTRICAL ENGR FOR HWYS

4/21/93 DATE — STATE TRAFFIC ENGINEER FOR HWYS

FHWA

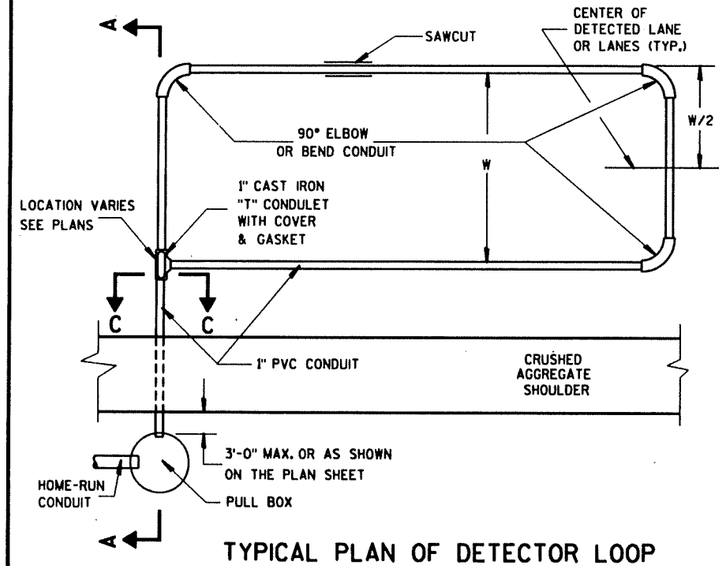
S.D.D. 9 F 12-1

S.D.D. 9 F 12-1

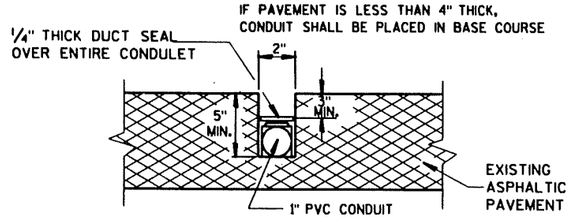


SECTION A-A
NO CURB & GUTTER
LOOP DETECTOR INSTALLATION DETAIL

*RECESS PULL BOX SO THAT THE COVER IS 3" BELOW GRADE IN SHOULDER AREAS OF CRUSHED AGGREGATE. BACKFILL OVER COVER WITH THE CRUSHED AGGREGATE TO BRING THE AREA TO GRADE LEVEL.



TYPICAL PLAN OF DETECTOR LOOP



SIDE VIEW
SECTION C-C
LOOP DETECTOR SLOT DETAIL

GENERAL NOTES

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

LOOP SIZE, LOCATION, NUMBER OF TURNS OF WIRE AND ASSOCIATED SIGNAL PHASE SHALL BE AS SHOWN ON THE PLANS.

PITCH LEAD OUT CONDUIT TO DRAIN TO ROADSIDE PULL BOX.

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IN THE EVENT EPOXY IS USED AS A LOOP SLOT FILLER, THE SLOT SHALL BE TOTALLY CLEAN AND DRY BEFORE ITS INSTALLATION.

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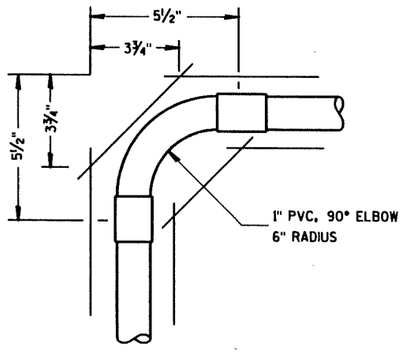
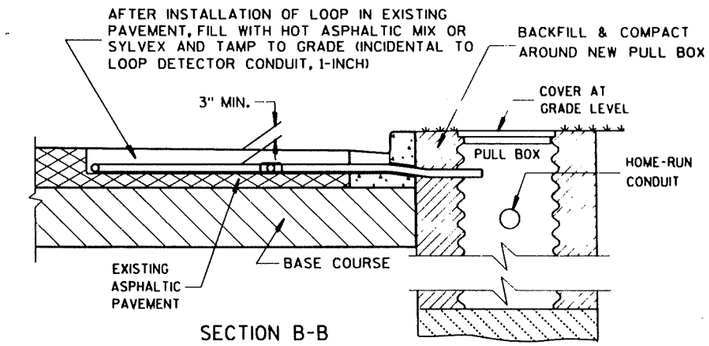
IN THE EVENT THAT THE EXISTING PAVEMENT IS MORE THAN 5 INCHES THICK, AND THEREFORE , THE 1 INCH CONDUIT DOES NOT REQUIRE INSTALLATION BELOW THE PAVEMENT INTO THE BASE COURSE, PLACE SOME OF THE TAR OR EPOXY SEALANT IN THE SLOT TO A DEPTH OF APPROXIMATELY ½ INCH BEFORE INSTALLATION OF THE CONDUIT. IF THE CONDUIT MUST BE PLACED IN THE BASE COURSE, DO NOT PLACE THE TAR OR EPOXY SEALANT IN THE SLOT.

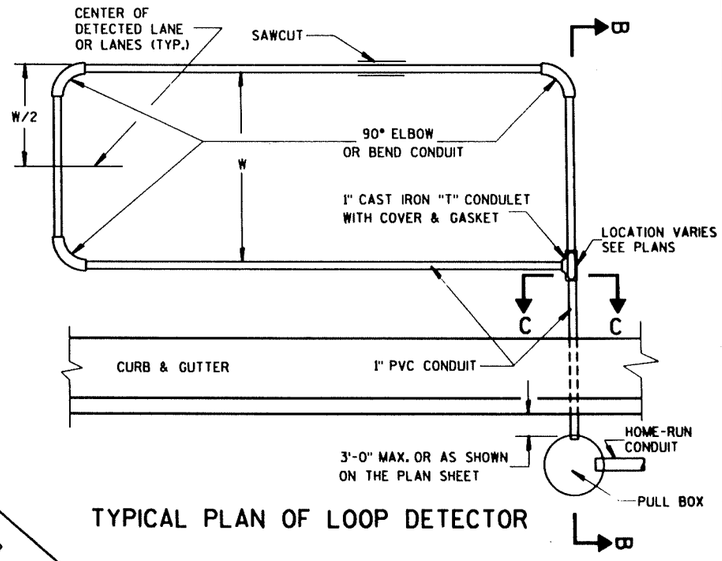
ONCE THE 2" LOOP SLOT HAS BEEN CHIPPED OUT, THE LOOP INSTALLATION SHALL BE COMPLETED PRIOR TO OPENING THE LANE(S) TO TRAFFIC.



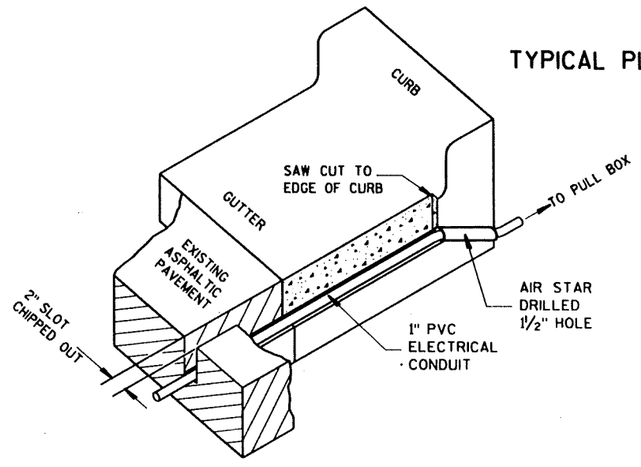
TOP VIEW
CORNER SAW SLOT DETAIL



SECTION B-B
CURB & GUTTER
LOOP DETECTOR INSTALLATION DETAIL



TYPICAL PLAN OF LOOP DETECTOR



ISOMETRIC VIEW
TYPICAL SAW CUT DETAIL FOR LEAD-IN CONDUIT

LOOP DETECTOR INSTALLED IN EXISTING ASPHALTIC PAVEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
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FHWA

S.D.D. 9 F 13-1

S.D.D. 9 F 13-1

STATE PROJECT NUMBER	SHEET NUMBER
8010-07-73	9.20

635+18

28TH. ST. INT.

635+18

28TH. ST. INT.

634+95

634+95

634+50

634+50

634+00

634+00

R/W

R/W

R/W

R/W

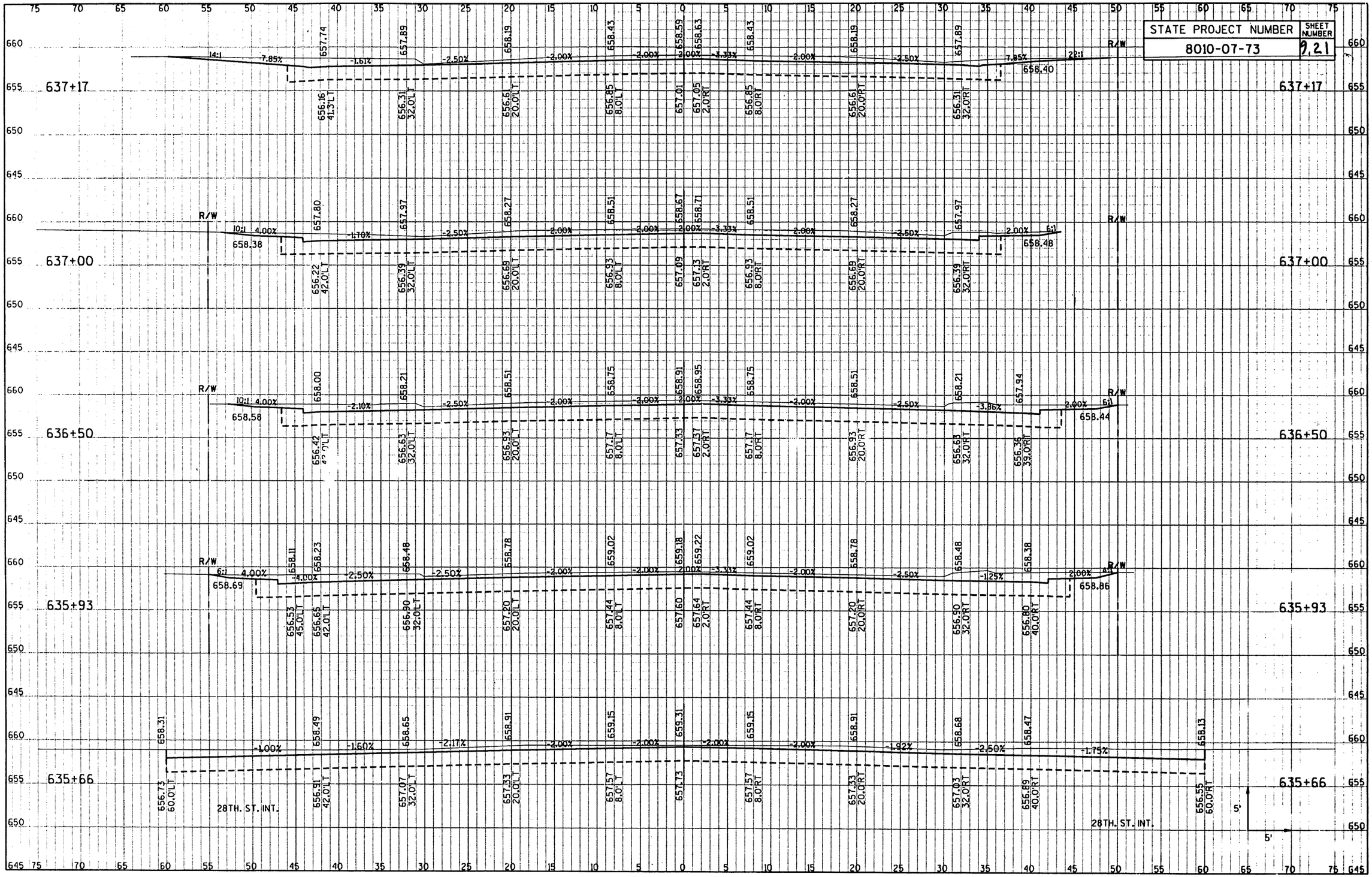
R/W

R/W

5'

5'

STATE PROJECT NUMBER	SHEET NUMBER
8010-07-73	9.21



STATE PROJECT NUMBER	SHEET NUMBER
8010-07-73	9.22

639+00

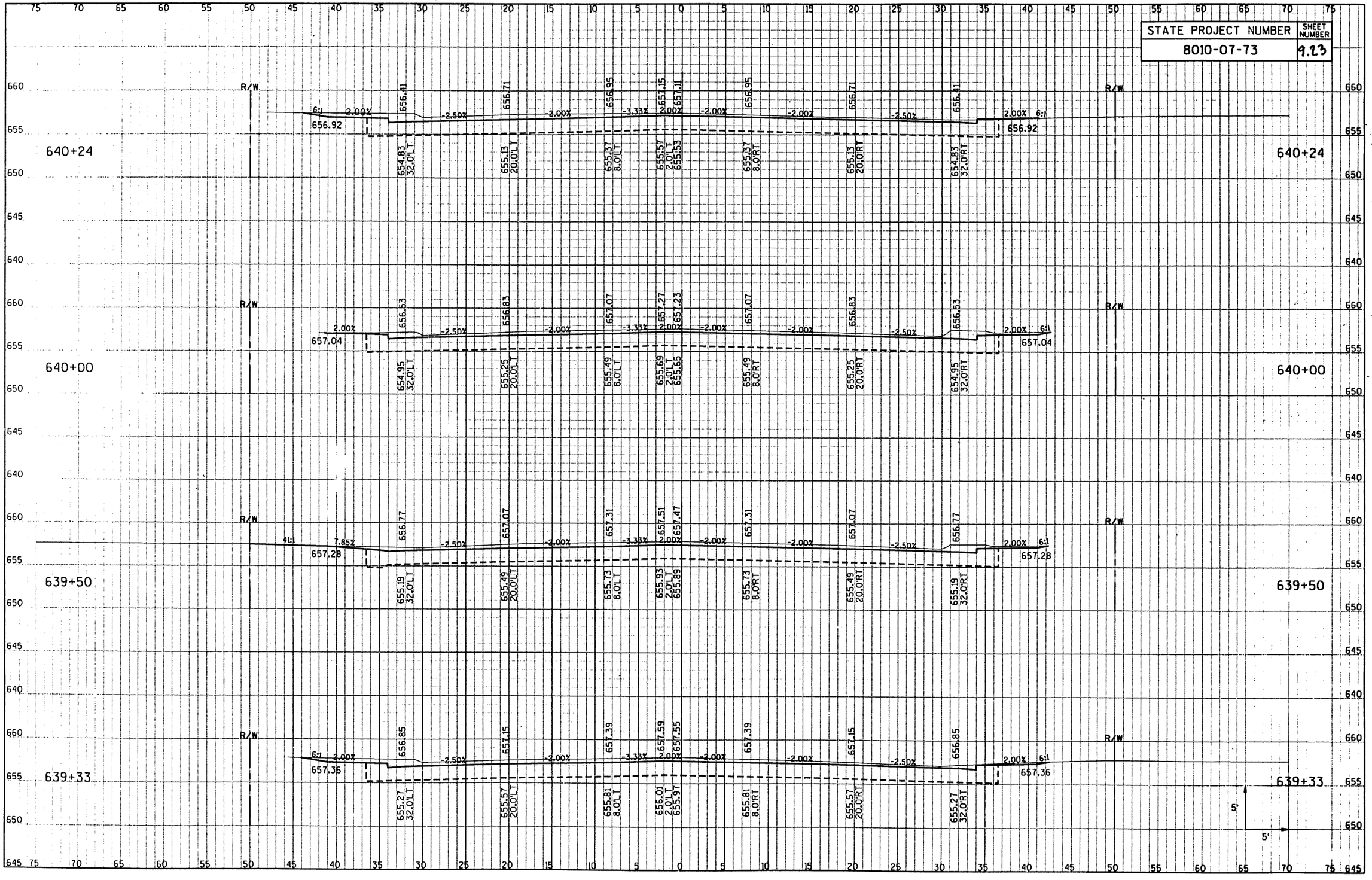
638+50

638+28

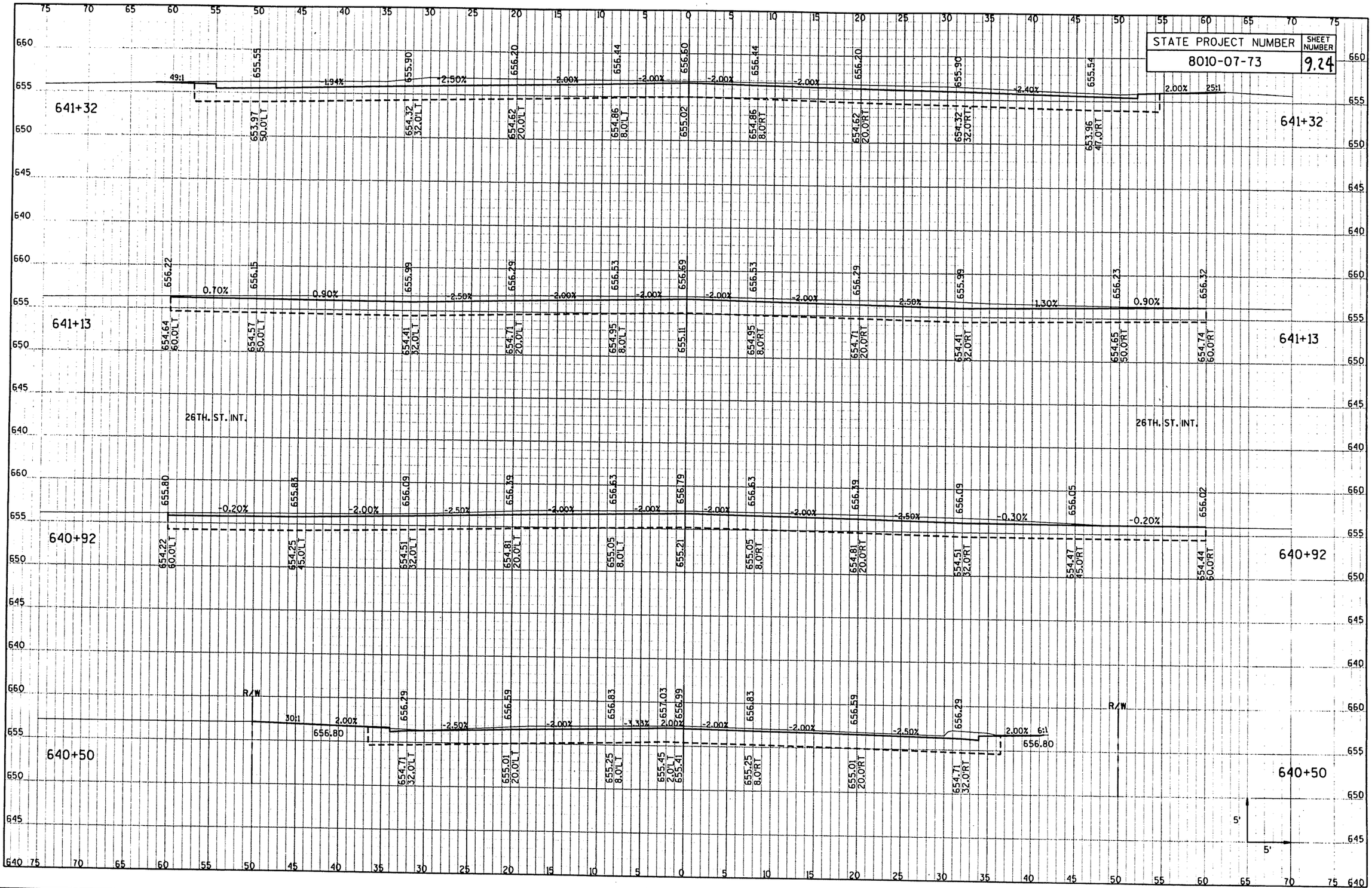
638+00

637+50

STATE PROJECT NUMBER	SHEET NUMBER
8010-07-73	9.23



STATE PROJECT NUMBER	SHEET NUMBER
8010-07-73	9.24



STATE PROJECT NUMBER	SHEET NUMBER
8010-07-73	9.25

643+50

R/W 655.36 6:1 2.00% -2.50% -2.00% -2.00% -2.00% -2.00% -2.00% 2.50% 2.00% 6:1 R/W 655.36

654.85 655.15 655.39 655.55 655.39 655.15 654.85

653.27 32.0'LT 653.57 20.0'LT 653.81 8.0'LT 653.97 653.81 8.0'RT 653.57 20.0'RT 653.27 32.0'RT

643+00

R/W 655.60 6:1 2.00% -2.50% -2.00% -2.00% -2.00% -2.00% -2.00% 2.50% 2.00% 6:1 R/W 655.60

655.09 655.39 655.63 655.79 655.63 655.39 655.09

653.51 32.0'LT 653.81 20.0'LT 654.05 8.0'LT 654.21 654.05 8.0'RT 653.81 20.0'RT 653.51 32.0'RT

642+50

R/W 655.84 6:1 2.00% -2.50% -2.00% -2.00% -2.00% -2.00% -2.00% 2.50% 2.00% 6:1 R/W 655.84

655.33 655.63 655.87 656.03 655.87 655.63 655.33

653.75 32.0'LT 654.05 20.0'LT 654.29 8.0'LT 654.45 654.29 8.0'RT 654.05 20.0'RT 653.75 32.0'RT

642+00

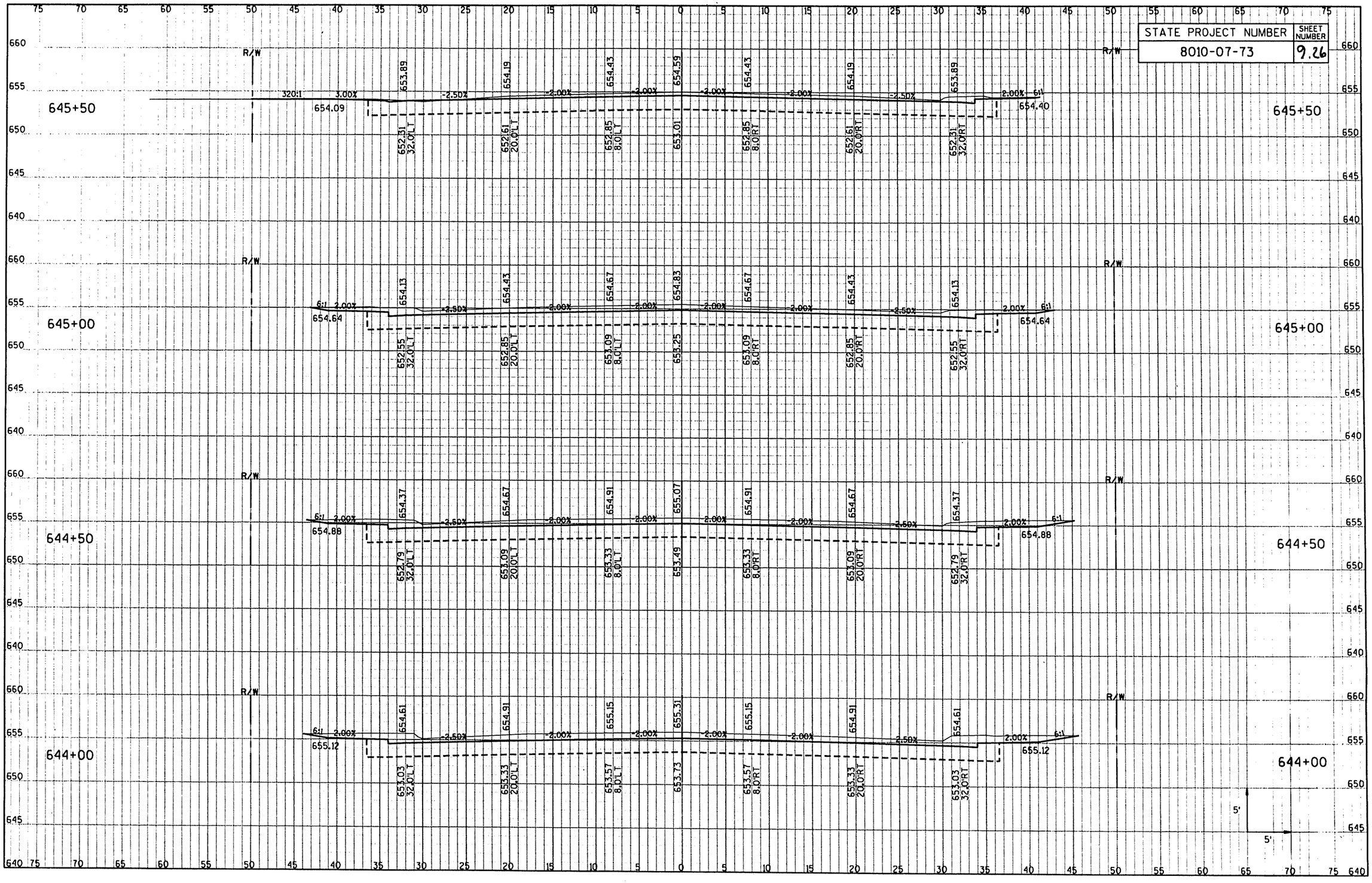
R/W 656.08 6:1 2.00% -2.50% -2.00% -2.00% -2.00% -2.00% -2.00% 2.50% 2.00% 6:1 R/W 656.08

655.57 655.87 656.11 656.27 656.11 655.87 655.57

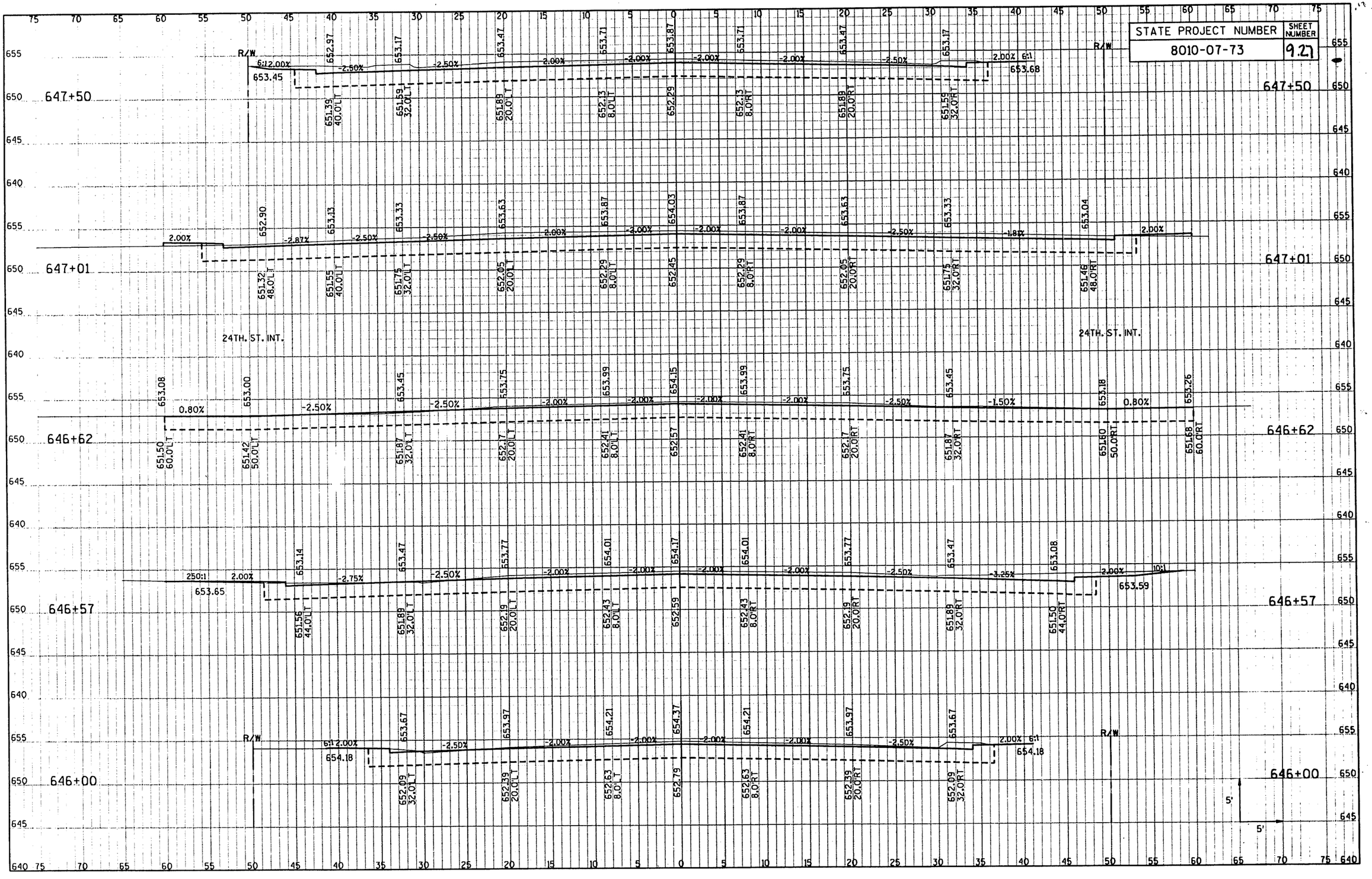
653.99 32.0'LT 654.29 20.0'LT 654.53 8.0'LT 654.69 654.53 8.0'RT 654.29 20.0'RT 653.99 32.0'RT

5' 5'

STATE PROJECT NUMBER	SHEET NUMBER
8010-07-73	9.26



STATE PROJECT NUMBER	SHEET NUMBER
8010-07-73	9.27



STATE PROJECT NUMBER	SHEET NUMBER
8010-07-73	9.28

649+50

R/W 6:1 2.00% 653.04 -2.50% 652.53 2.00% 652.83 2.00% 653.07 2.00% 653.23 2.00% 653.07 -2.50% 652.83 2.00% 652.53 2.00% 6:1 653.04 R/W

650.95 32.0'LT | 651.25 20.0'LT | 651.49 8.0'LT | 651.65 | 651.49 8.0'RT | 651.25 20.0'RT | 650.95 32.0'RT

649+00

R/W 6:1 2.00% 653.20 -2.50% 652.69 2.00% 652.99 2.00% 653.23 2.00% 653.39 2.00% 653.23 -2.50% 652.99 2.00% 652.69 2.00% 6:1 653.20 R/W

651.11 32.0'LT | 651.41 20.0'LT | 651.65 8.0'LT | 651.8 | 651.65 8.0'RT | 651.41 20.0'RT | 651.11 32.0'RT

648+69

R/W 22:1 7.85% 653.30 -2.50% 652.79 2.00% 653.09 2.00% 653.33 2.00% 653.49 2.00% 653.33 -2.50% 653.09 2.00% 652.79 2.00% 6:1 653.30 R/W

651.21 32.0'LT | 651.51 20.0'LT | 651.75 8.0'LT | 651.9 | 651.75 8.0'RT | 651.51 20.0'RT | 651.21 32.0'RT

648+50

R/W 6:1 2.00% 653.36 -2.50% 652.85 2.00% 653.15 2.00% 653.39 2.00% 653.55 2.00% 653.39 -2.50% 653.15 2.00% 652.85 2.00% 6:1 653.36 R/W

651.27 32.0'LT | 651.57 20.0'LT | 651.8 8.0'LT | 651.97 | 651.81 8.0'RT | 651.57 20.0'RT | 651.27 32.0'RT

648+00

R/W 5:1 4.00% 653.39 -2.50% 652.81 -2.50% 653.01 2.00% 653.31 2.00% 653.55 2.00% 653.71 2.00% 653.55 -2.50% 653.31 2.00% 653.01 2.00% 6:1 653.52 R/W

651.23 40.0'LT | 651.43 32.0'LT | 651.73 20.0'LT | 651.97 8.0'LT | 652.13 | 651.97 8.0'RT | 651.73 20.0'RT | 651.43 32.0'RT

5' 5'

STATE PROJECT NUMBER	SHEET NUMBER
8010-07-73	9.29

652+00

651+50

651+00

650+50

650+00

R/W

6:1 2.00% -2.50% -2.00% -2.00% -2.00% -2.00% -2.00% -2.50% 2.00% 6:1

652.24 651.73 652.03 652.27 652.43 652.27 652.03 651.73 652.24

650.15 32.0'LT | 650.45 20.0'LT | 650.69 8.0'LT | 650.85 | 650.69 8.0'RT | 650.45 20.0'RT | 650.15 32.0'RT

652.40 651.89 652.19 652.43 652.59 652.43 652.19 651.89 652.40

650.31 32.0'LT | 650.61 20.0'LT | 650.85 8.0'LT | 651.01 | 650.85 8.0'RT | 650.61 20.0'RT | 650.31 32.0'RT

652.56 652.05 652.35 652.59 652.75 652.59 652.35 652.05 652.56

650.47 32.0'LT | 650.77 20.0'LT | 651.01 8.0'LT | 651.17 | 651.01 8.0'RT | 650.77 20.0'RT | 650.47 32.0'RT

652.72 652.21 652.51 652.75 652.91 652.75 652.51 652.21 652.72

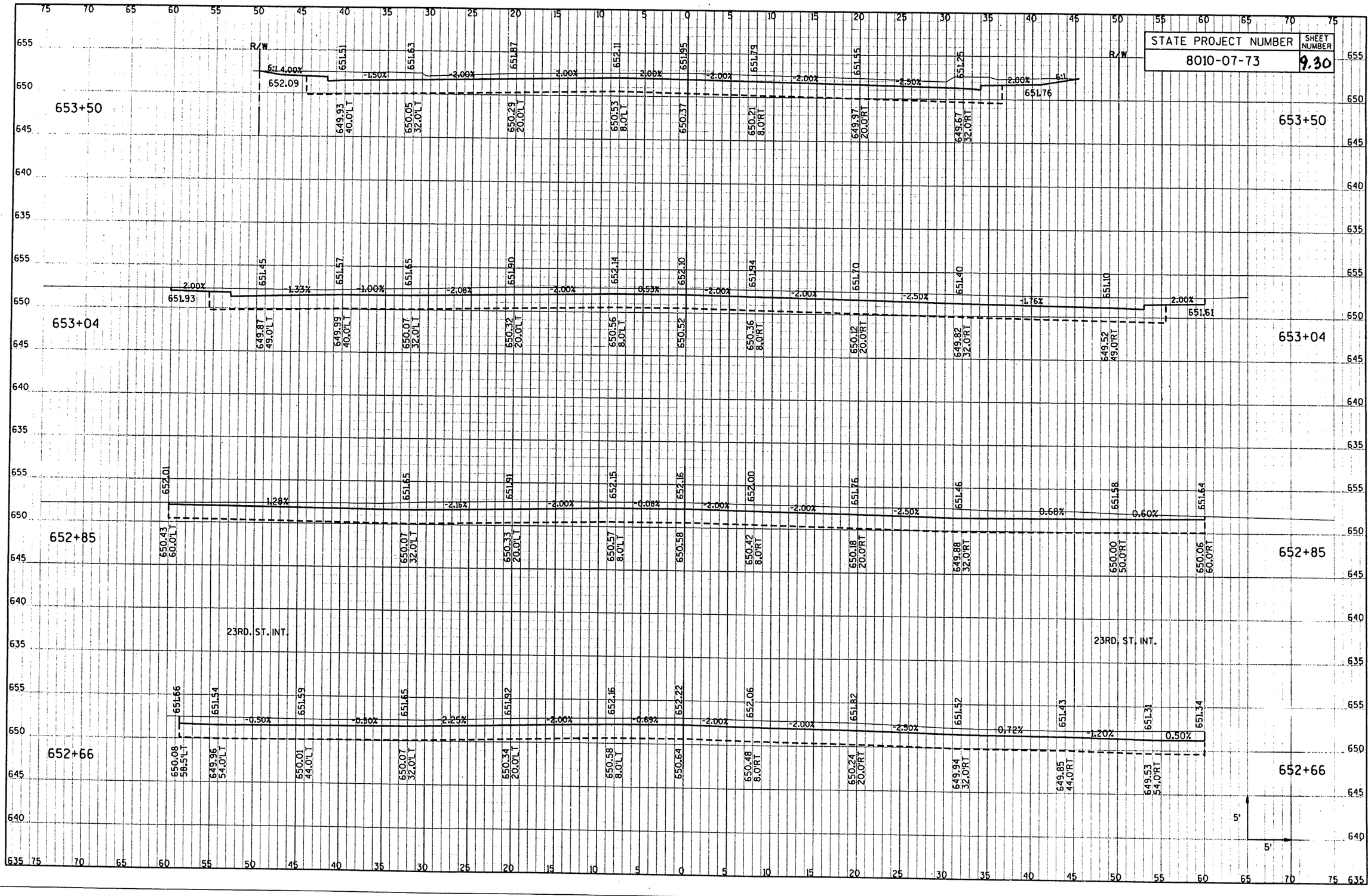
650.63 32.0'LT | 650.93 20.0'LT | 651.17 8.0'LT | 651.33 | 651.17 8.0'RT | 650.93 20.0'RT | 650.63 32.0'RT

652.88 652.37 652.67 652.91 653.07 652.91 652.67 652.37 652.88

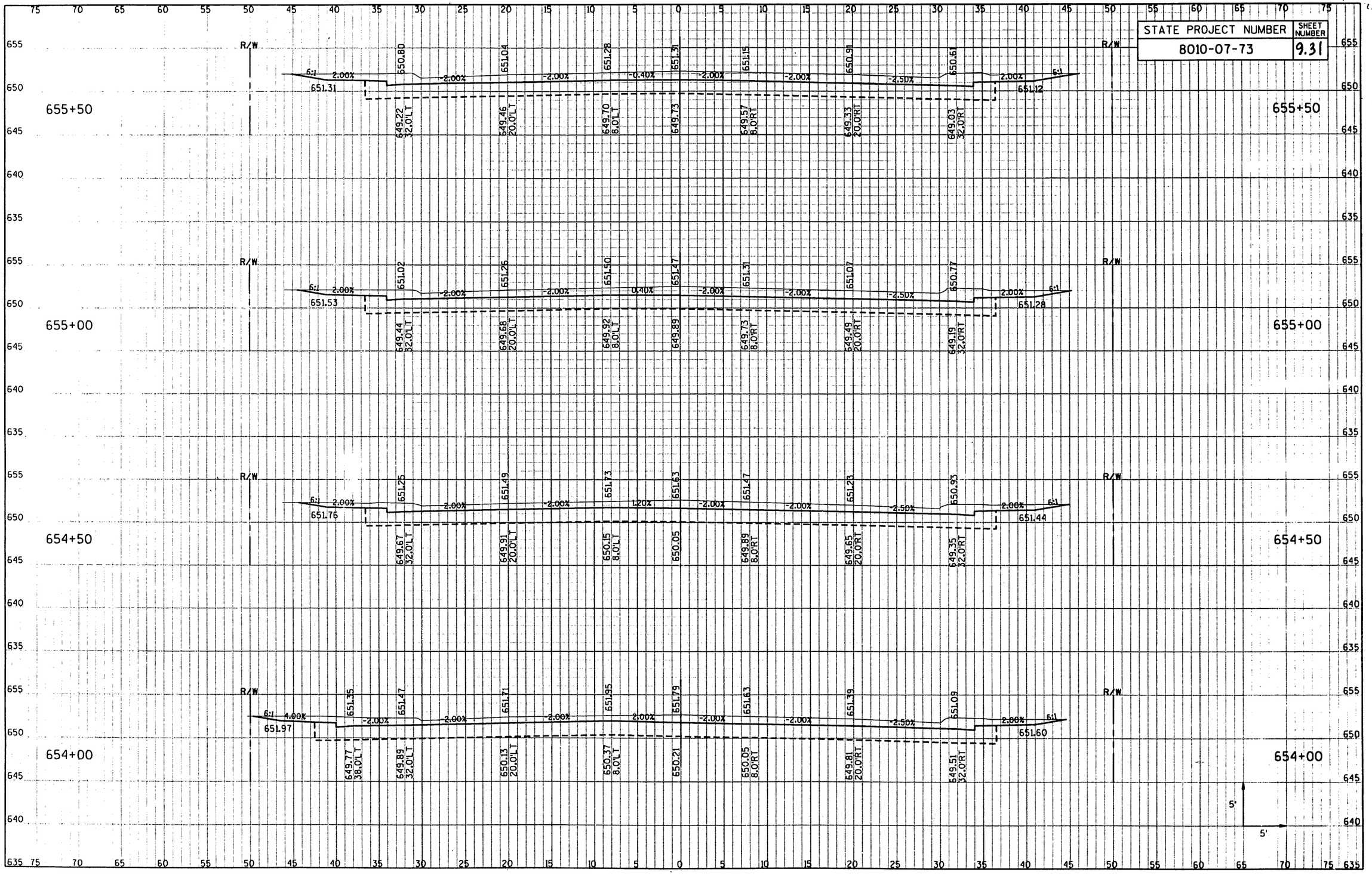
650.79 32.0'LT | 651.09 20.0'LT | 651.33 8.0'LT | 651.49 | 651.33 8.0'RT | 651.09 20.0'RT | 650.79 32.0'RT

5' 5'

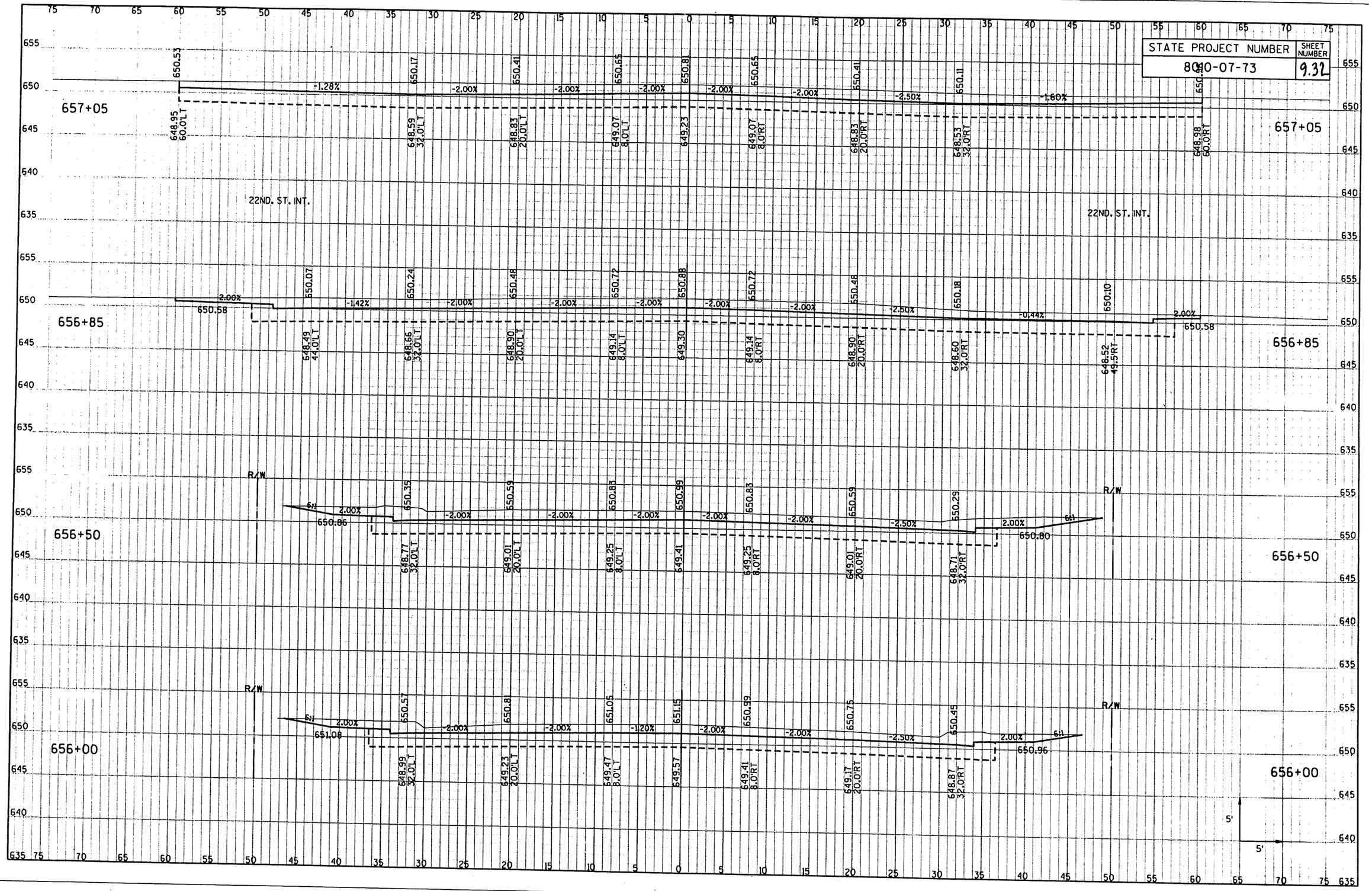
STATE PROJECT NUMBER	SHEET NUMBER
8010-07-73	9.30



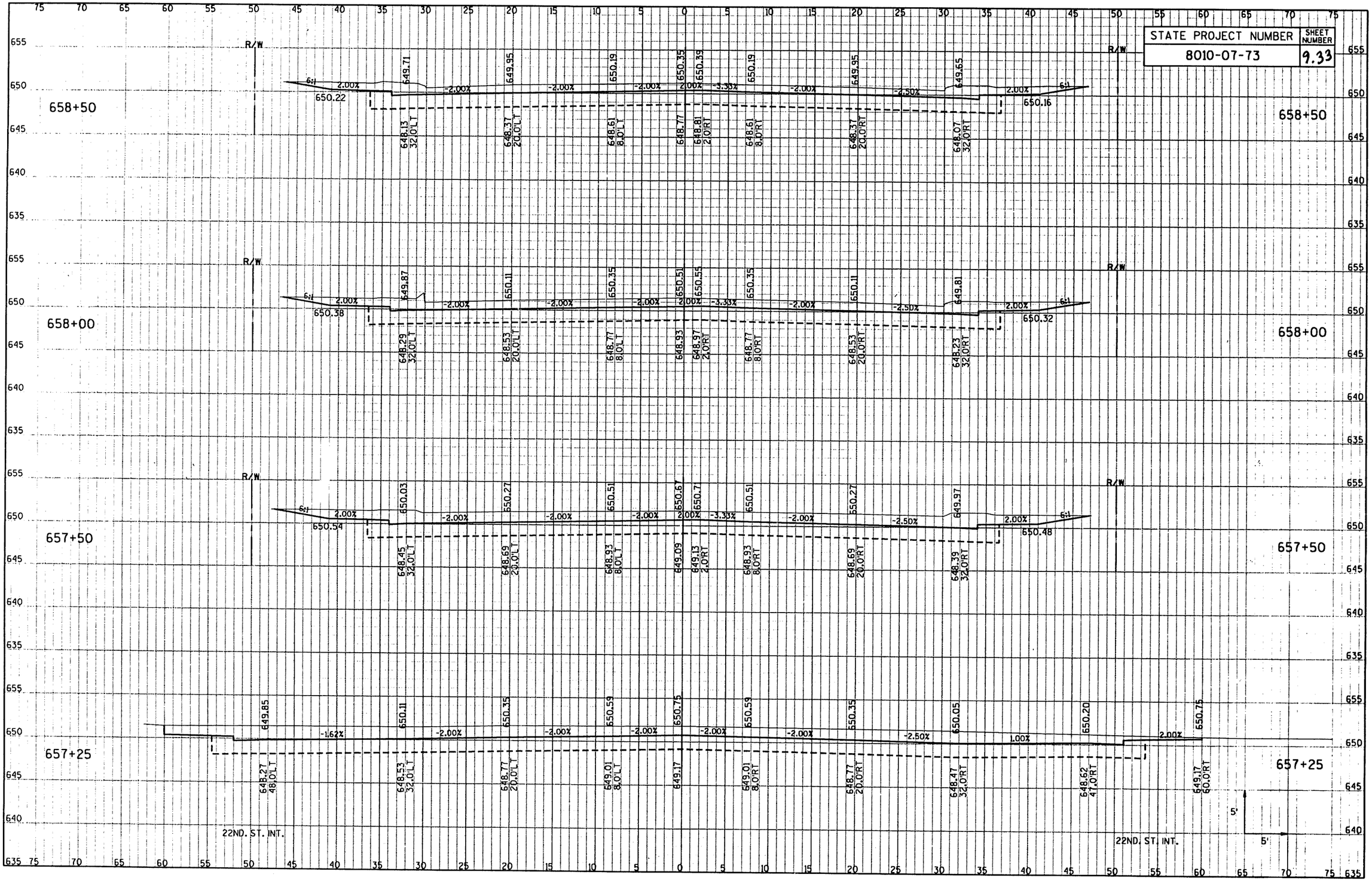
STATE PROJECT NUMBER	SHEET NUMBER
8010-07-73	9.31



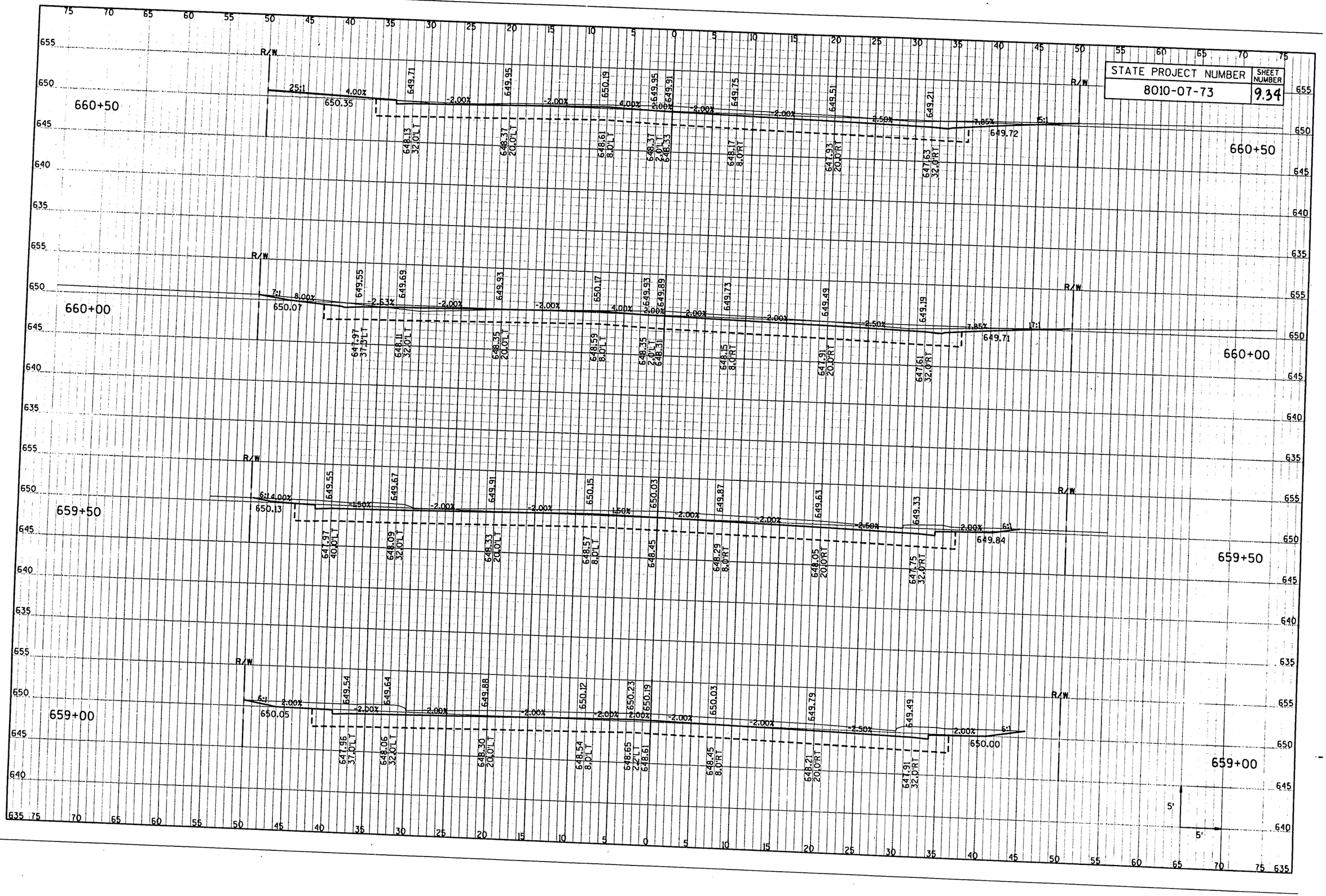
STATE PROJECT NUMBER	SHEET NUMBER
8040-07-73	9.32



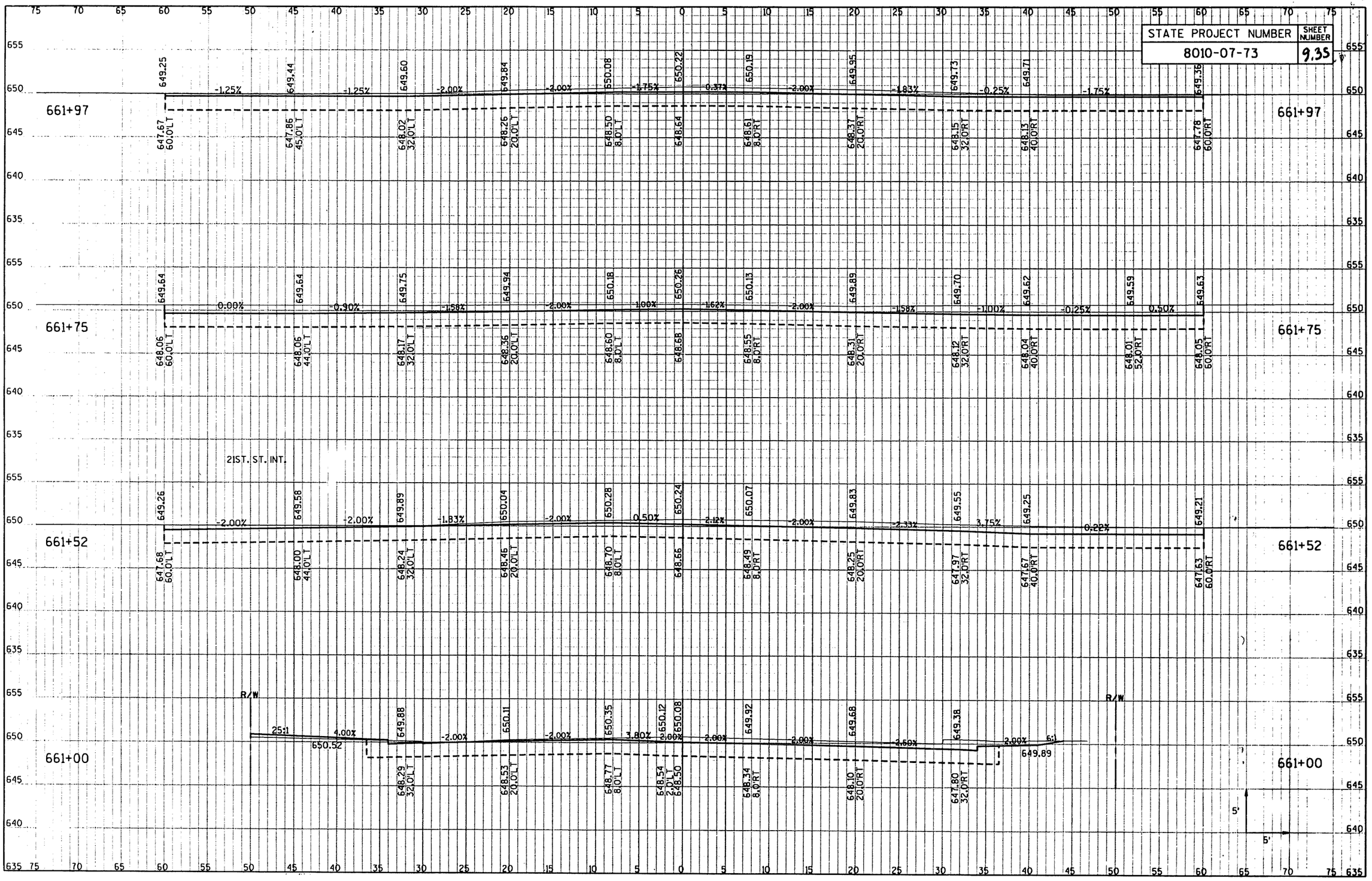
STATE PROJECT NUMBER	SHEET NUMBER
8010-07-73	9.33



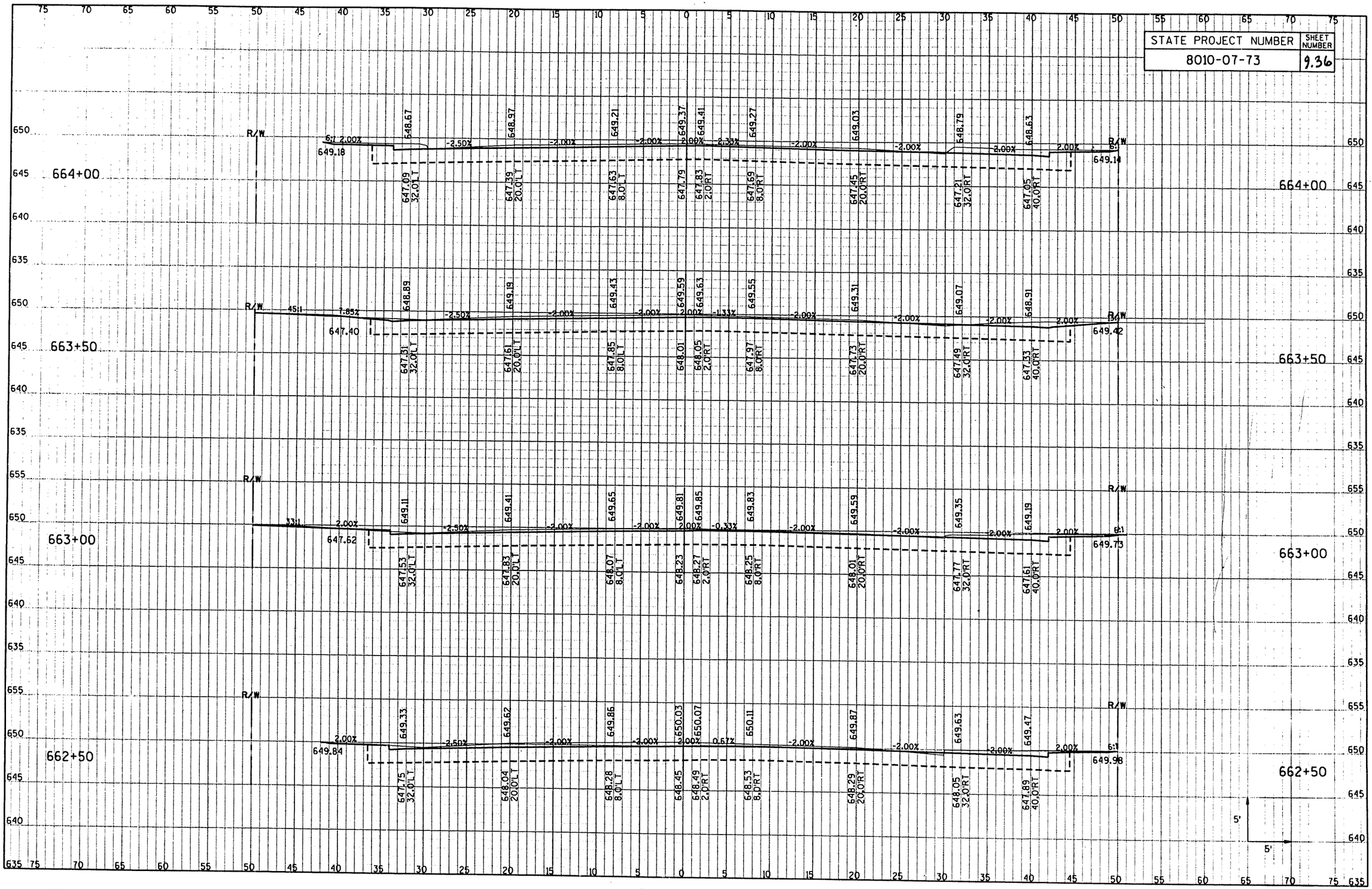
STATE PROJECT NUMBER	SHEET NUMBER
8010-07-73	9.34



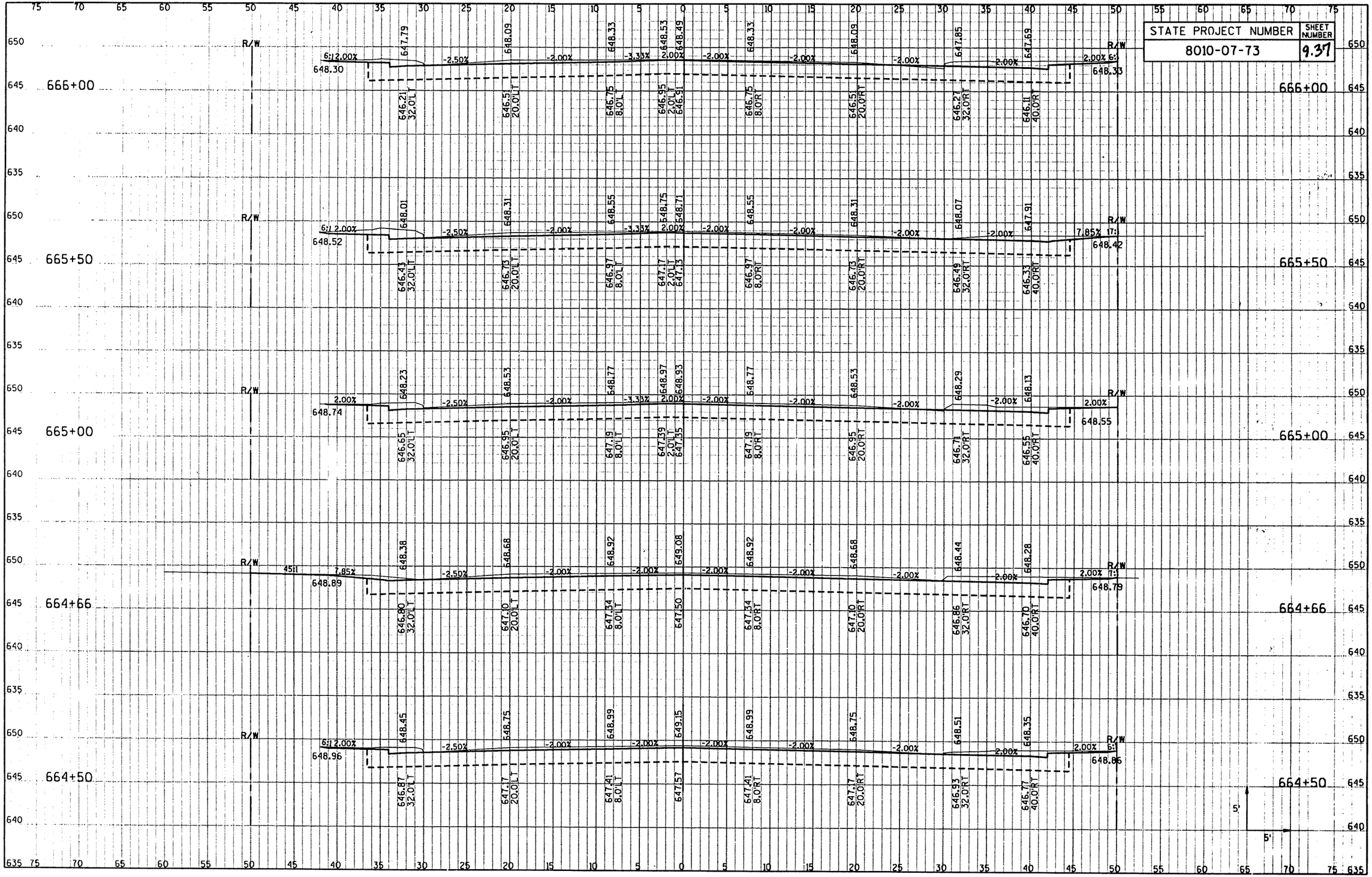
STATE PROJECT NUMBER	SHEET NUMBER
8010-07-73	9.35



STATE PROJECT NUMBER	SHEET NUMBER
8010-07-73	9.36



STATE PROJECT NUMBER	SHEET NUMBER
8010-07-73	9.37



STATE PROJECT NUMBER	SHEET NUMBER
8010-07-73	9.38

667+15

R/W 647.36 -2.50% 647.66 -2.00% 647.90 -2.00% 648.06 -2.00% 647.90 -2.00% 647.66 -2.00% 647.42 -3.00% 647.18 2.00% 125:1 R/W 647.59

647.98

645.78 32.0'LT | 646.08 20.0'LT | 646.32 8.0'LT | 646.48 | 646.32 8.0'RT | 646.08 20.0'RT | 645.84 32.0'RT | 645.60 40.0'RT

667+15

667+00

R/W 647.41 -2.50% 647.71 -2.00% 647.95 -2.00% 648.11 -2.00% 647.95 -2.00% 647.71 -2.00% 647.47 -3.00% 647.23 2.00% 18:1 R/W 647.74

37:1 7.85%

647.92

645.83 32.0'LT | 646.13 20.0'LT | 646.37 8.0'LT | 646.53 | 646.37 8.0'RT | 646.13 20.0'RT | 645.89 32.0'RT | 645.65 40.0'RT

667+00

666+67

647.66 1.75% 647.38 1.16% 647.52 -2.50% 647.82 -2.00% 648.06 -2.00% 648.22 -2.00% 648.06 -2.00% 647.82 -2.00% 647.58 -2.00% 647.42 1.20% 647.54 647.54

646.08 60.0'LT | 645.80 44.0'LT | 645.94 32.0'LT | 646.24 20.0'LT | 646.48 8.0'LT | 646.64 | 646.48 8.0'RT | 646.24 20.0'RT | 646.00 32.0'RT | 645.84 40.0'RT | 645.96 50.0'RT | 645.96 60.0'RT

666+67

20TH. ST. INT.

647.90 0.40% 647.86 1.38% 647.61 -2.50% 647.91 -2.00% 648.15 -2.00% 648.31 -2.00% 648.15 -2.00% 647.91 -2.00% 647.67 -2.00% 647.51 0.70% 647.64 0.90% 2.00% 647.73

646.32 60.0'LT | 645.28 50.0'LT | 646.03 32.0'LT | 646.33 20.0'LT | 646.57 8.0'LT | 646.73 | 646.57 8.0'RT | 646.33 20.0'RT | 646.09 32.0'RT | 645.93 40.0'RT | 646.06 50.0'RT | 646.15 60.0'RT

666+43

20TH. ST. INT.

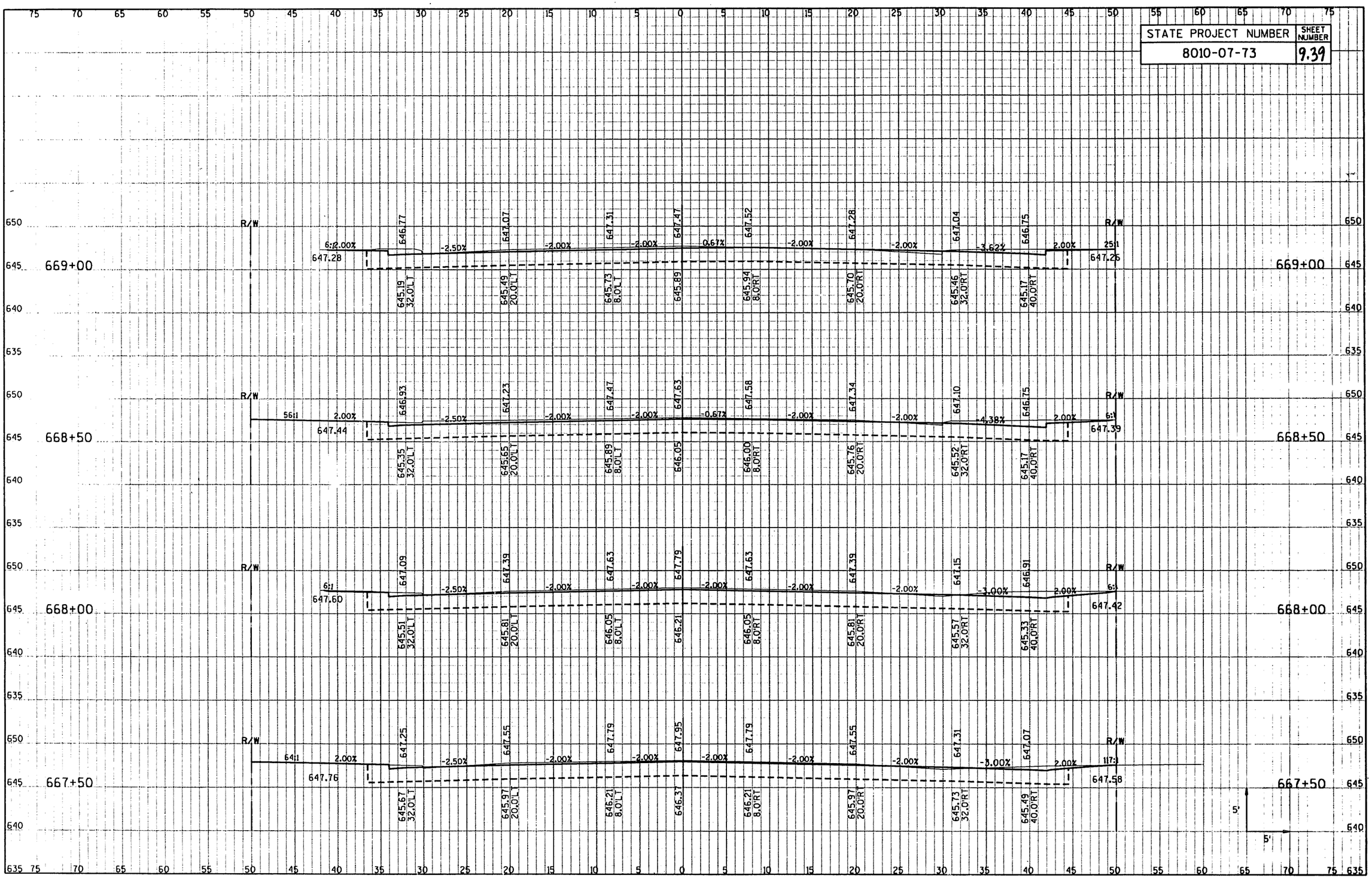
647.66 0.94% 647.51 -1.42% 647.68 -2.50% 647.98 -2.00% 648.22 -2.00% 648.38 -2.00% 648.22 -2.00% 647.98 -2.00% 647.74 -2.00% 647.58 -2.00% 647.38 0.60% 647.44

646.08 60.0'LT | 645.93 44.0'LT | 646.10 32.0'LT | 646.40 20.0'LT | 646.64 8.0'LT | 646.80 | 646.64 8.0'RT | 646.40 20.0'RT | 646.16 32.0'RT | 646.00 40.0'RT | 645.80 50.0'RT | 645.86 60.0'RT

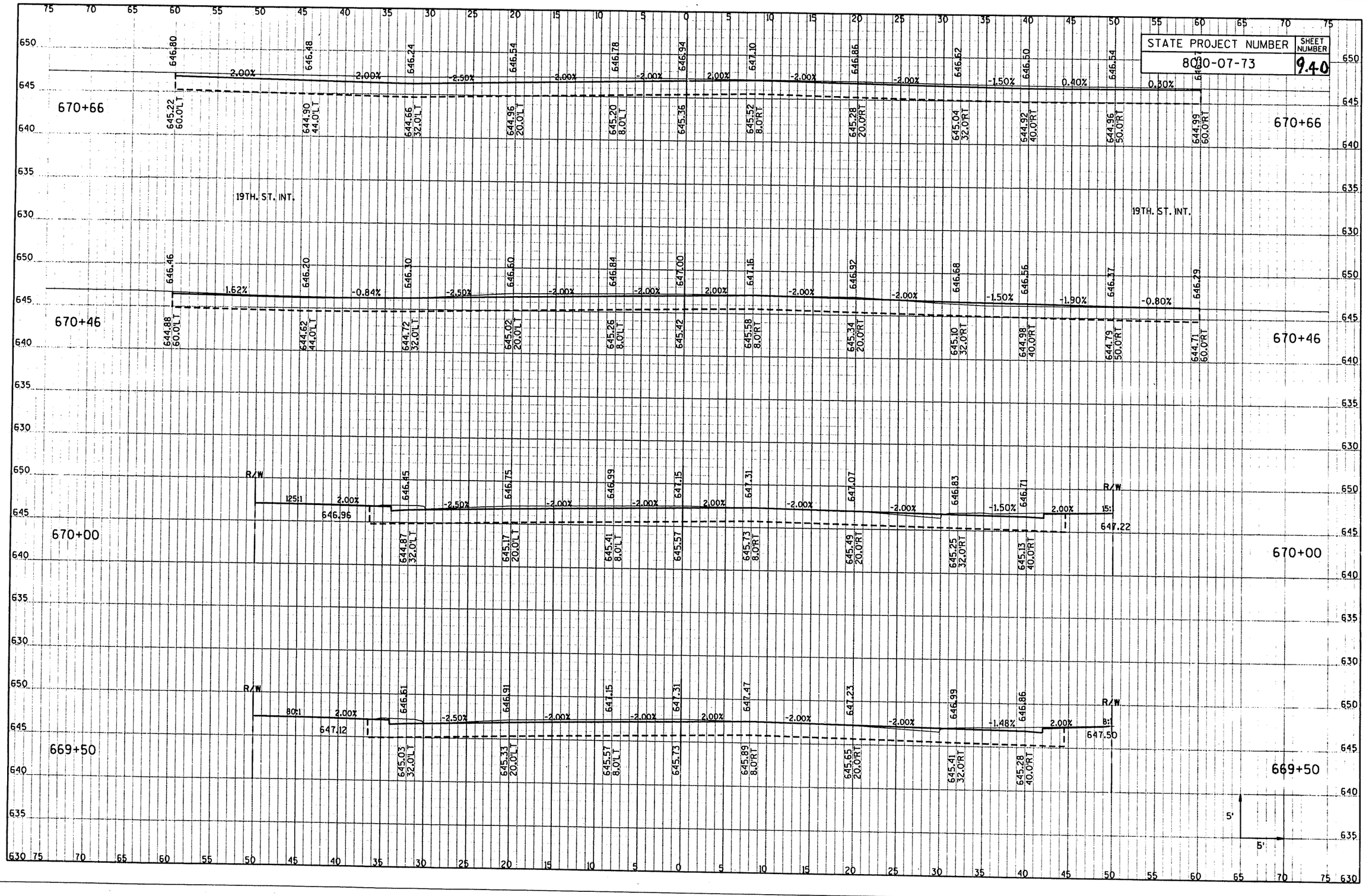
666+27

5' 5'

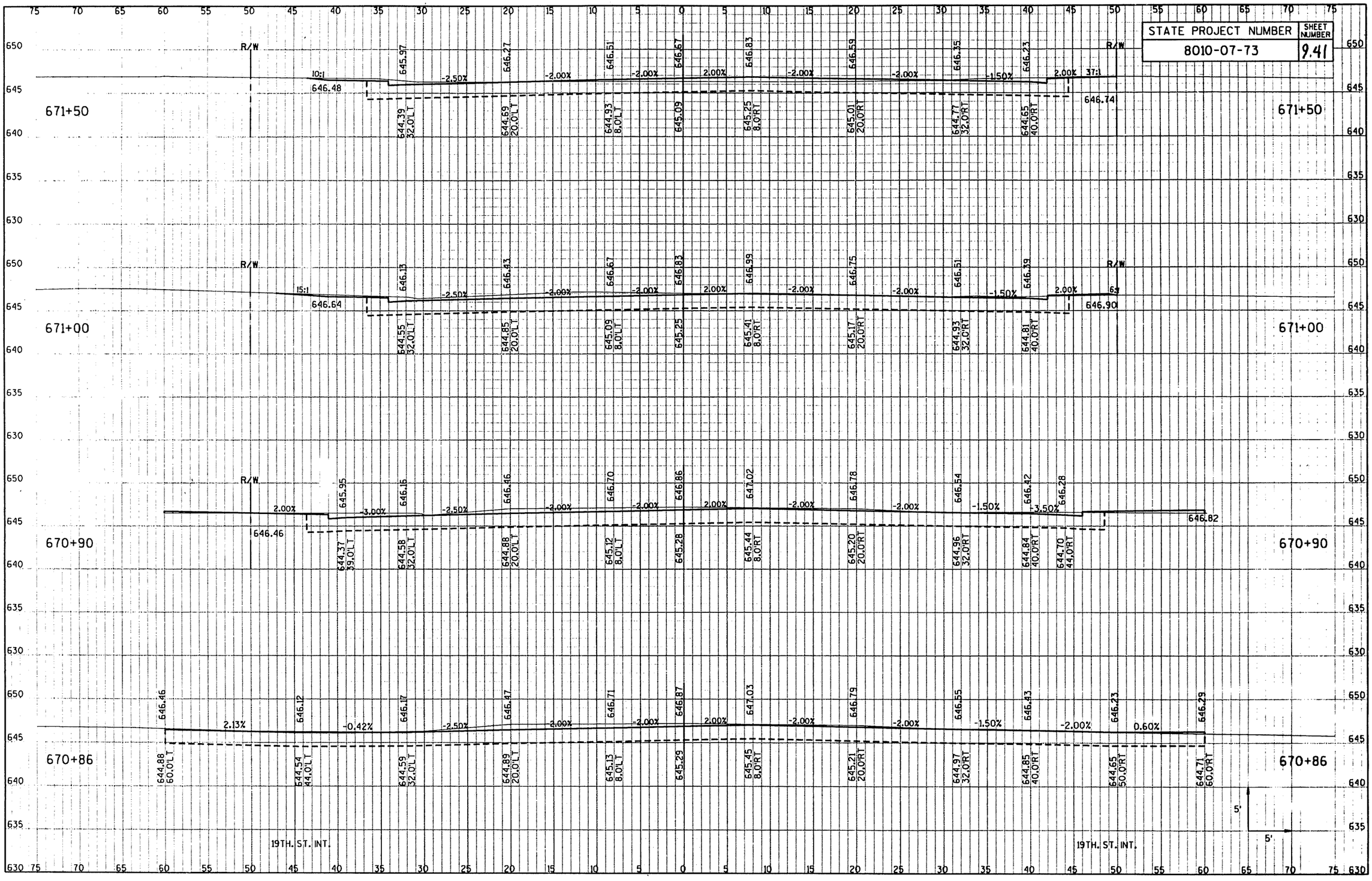
STATE PROJECT NUMBER	SHEET NUMBER
8010-07-73	9.39



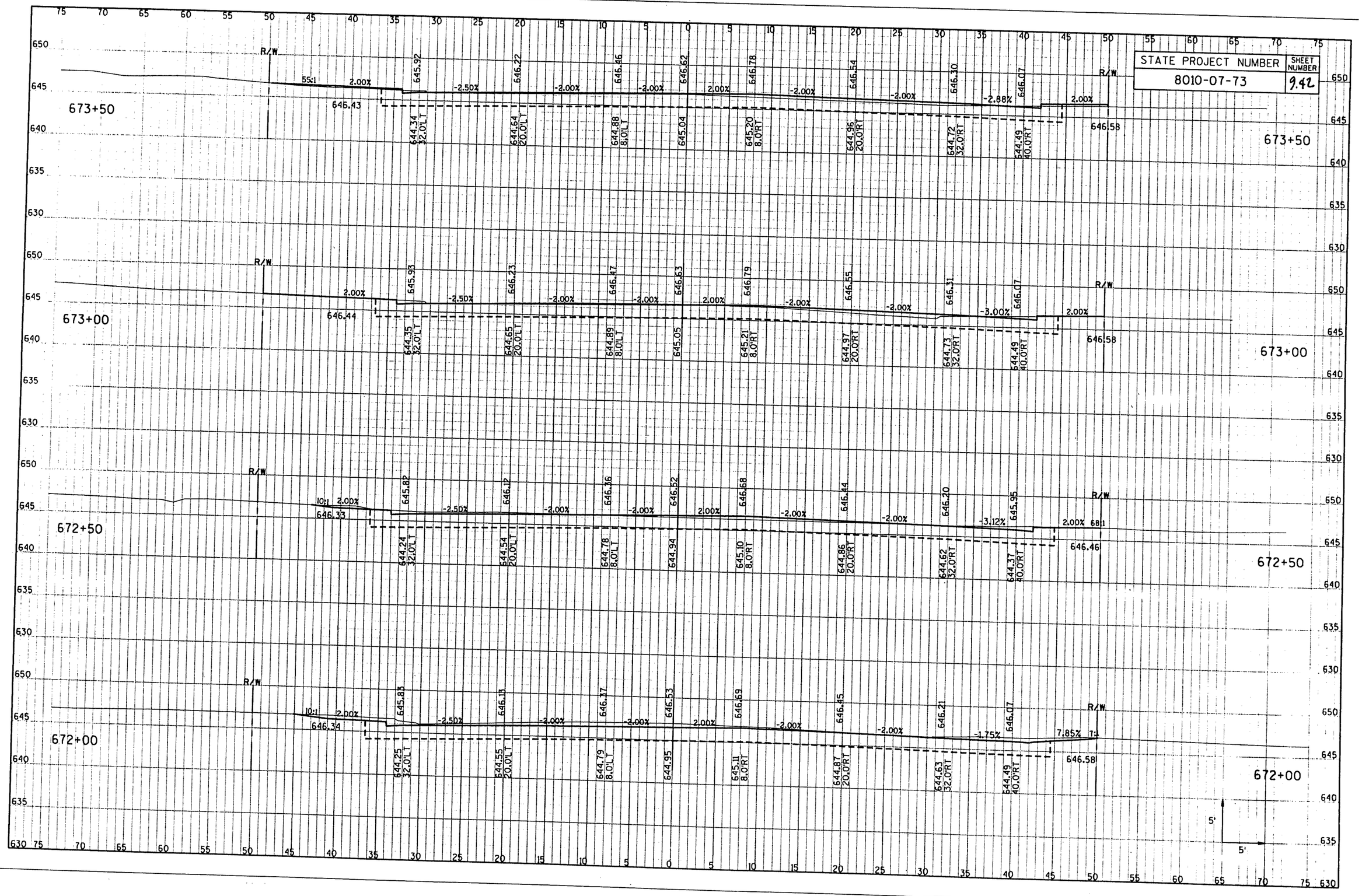
STATE PROJECT NUMBER	SHEET NUMBER
8030-07-73	9.40



STATE PROJECT NUMBER	SHEET NUMBER
8010-07-73	9.41



STATE PROJECT NUMBER	SHEET NUMBER
8010-07-73	9.42



STATE PROJECT NUMBER	SHEET NUMBER
8010-07-73	9.43

675+50

R/W 15:1 2.00% 645.70 645.19 -2.50% 645.49 -2.00% 645.73 -2.50% 645.93 2.50% 646.13 -2.00% 645.89 -2.00% 645.65 -1.87% 645.50 2.50% 45:1 R/W

643.61 32.0'LT | 643.91 20.0'LT | 644.15 8.0'LT | 644.35 | 644.55 8.0'RT | 644.31 20.0'RT | 644.07 32.0'RT | 643.92 40.0'RT

675+00

645.25 645.15 645.40 -2.50% 645.70 -2.00% 645.94 -2.00% 646.10 2.00% 646.26 -2.00% 646.02 -2.00% 645.78 -1.62% 645.65 -3.40% 645.31 -2.60% 645.05

643.67 60.0'LT | 643.57 44.0'LT | 643.82 32.0'LT | 644.12 20.0'LT | 644.36 8.0'LT | 644.52 | 644.68 8.0'RT | 644.44 20.0'RT | 644.20 32.0'RT | 644.07 40.0'RT | 643.73 50.0'RT | 643.47 60.0'RT

674+50

R/W 19:1 2.00% 646.09 645.58 -2.50% 645.88 -2.00% 646.18 -2.00% 646.28 2.00% 646.44 -2.00% 646.20 -2.00% 645.96 -3.00% 645.72 4.00% 12:1 R/W 646.35

644.00 32.0'LT | 644.30 20.0'LT | 644.54 8.0'LT | 644.70 | 644.86 8.0'RT | 644.62 20.0'RT | 644.38 32.0'RT | 644.14 40.0'RT

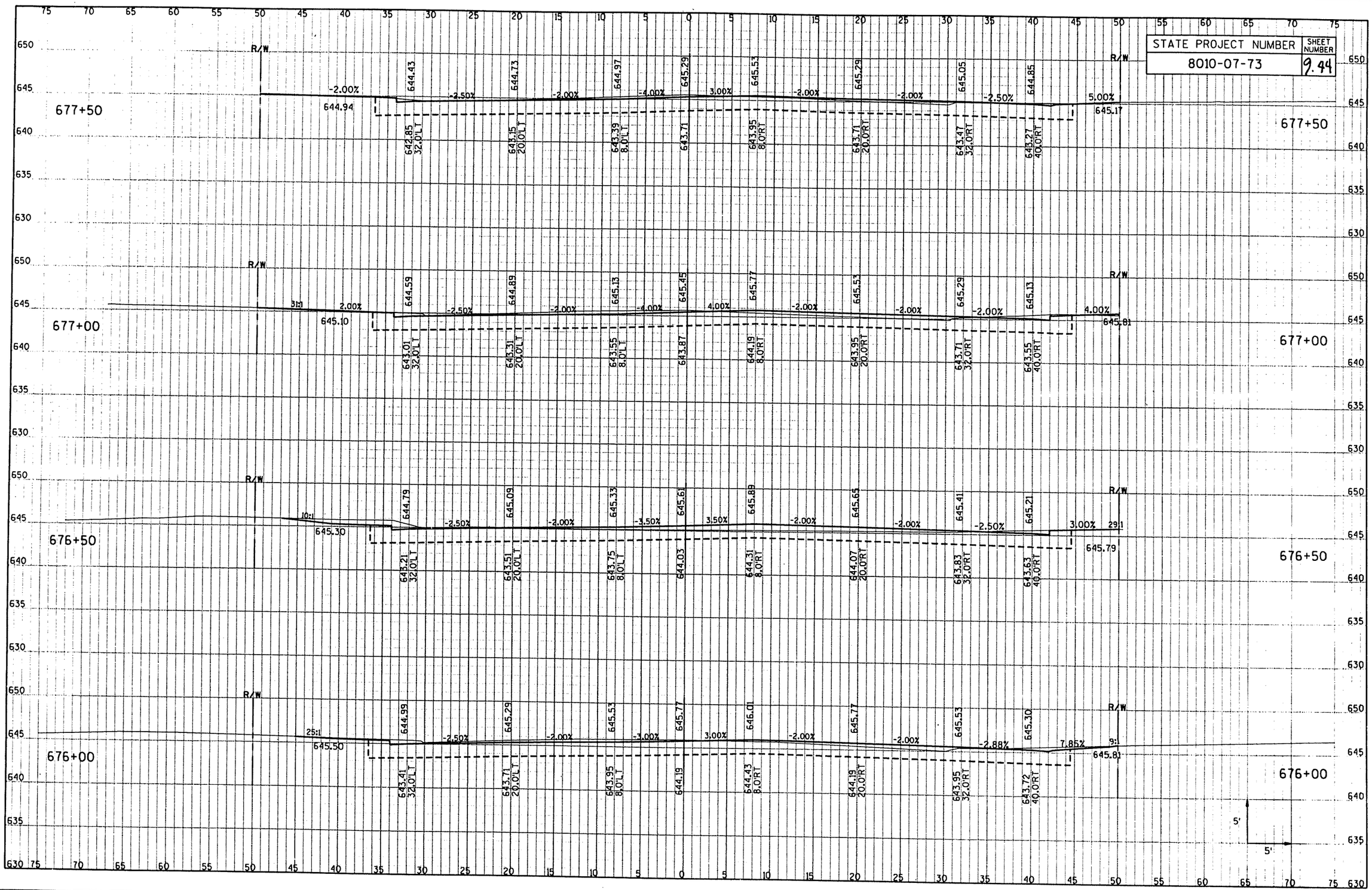
674+00

R/W 15:1 2.00% 646.27 645.76 -2.50% 646.06 -2.00% 646.30 -2.00% 646.46 2.00% 646.62 -2.00% 646.38 -2.00% 646.14 -3.00% 645.90 6.00% 90:1

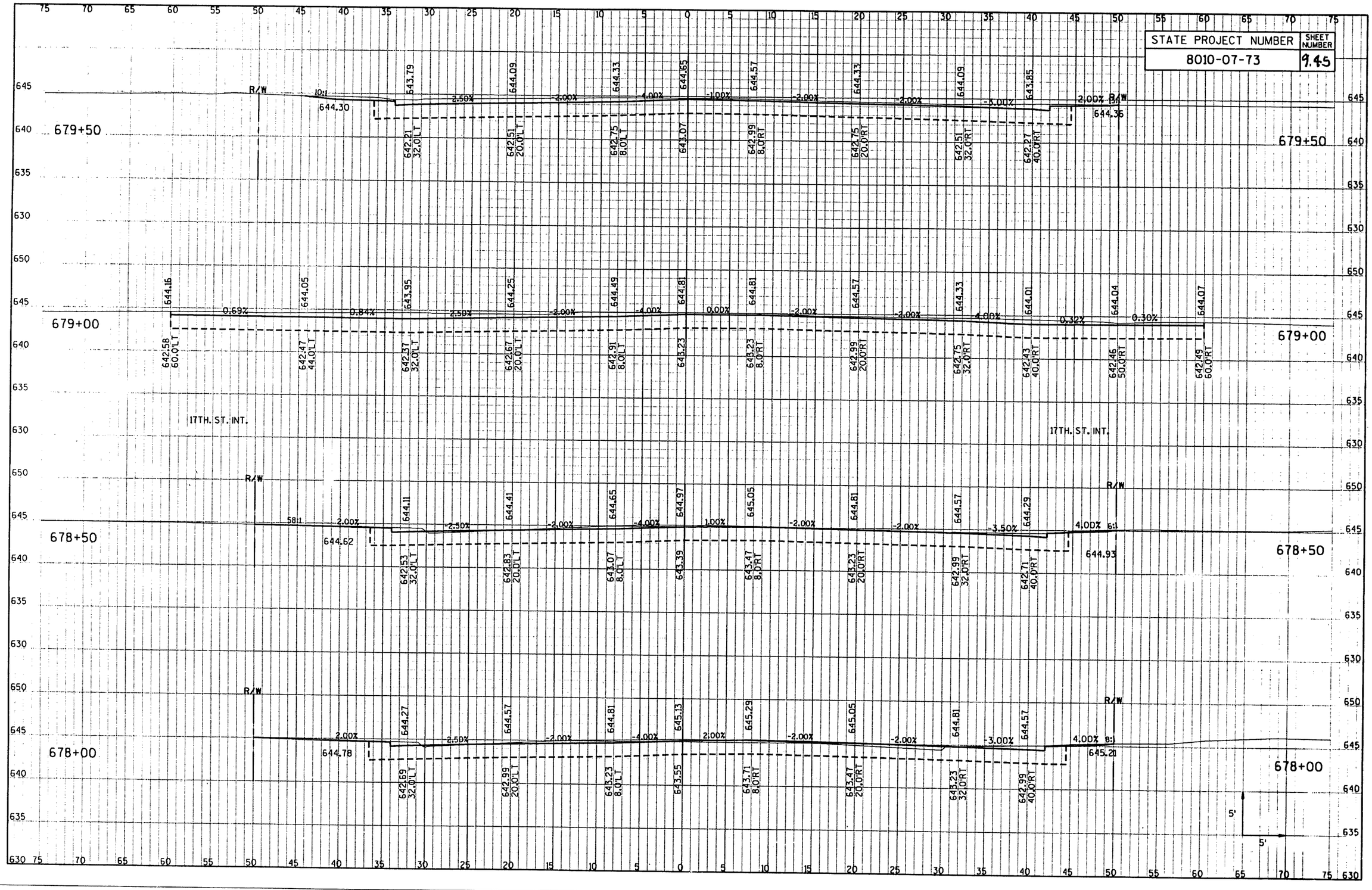
644.18 32.0'LT | 644.48 20.0'LT | 644.72 8.0'LT | 644.88 | 645.04 8.0'RT | 644.80 20.0'RT | 644.56 32.0'RT | 644.32 40.0'RT | 646.29

5' 5'

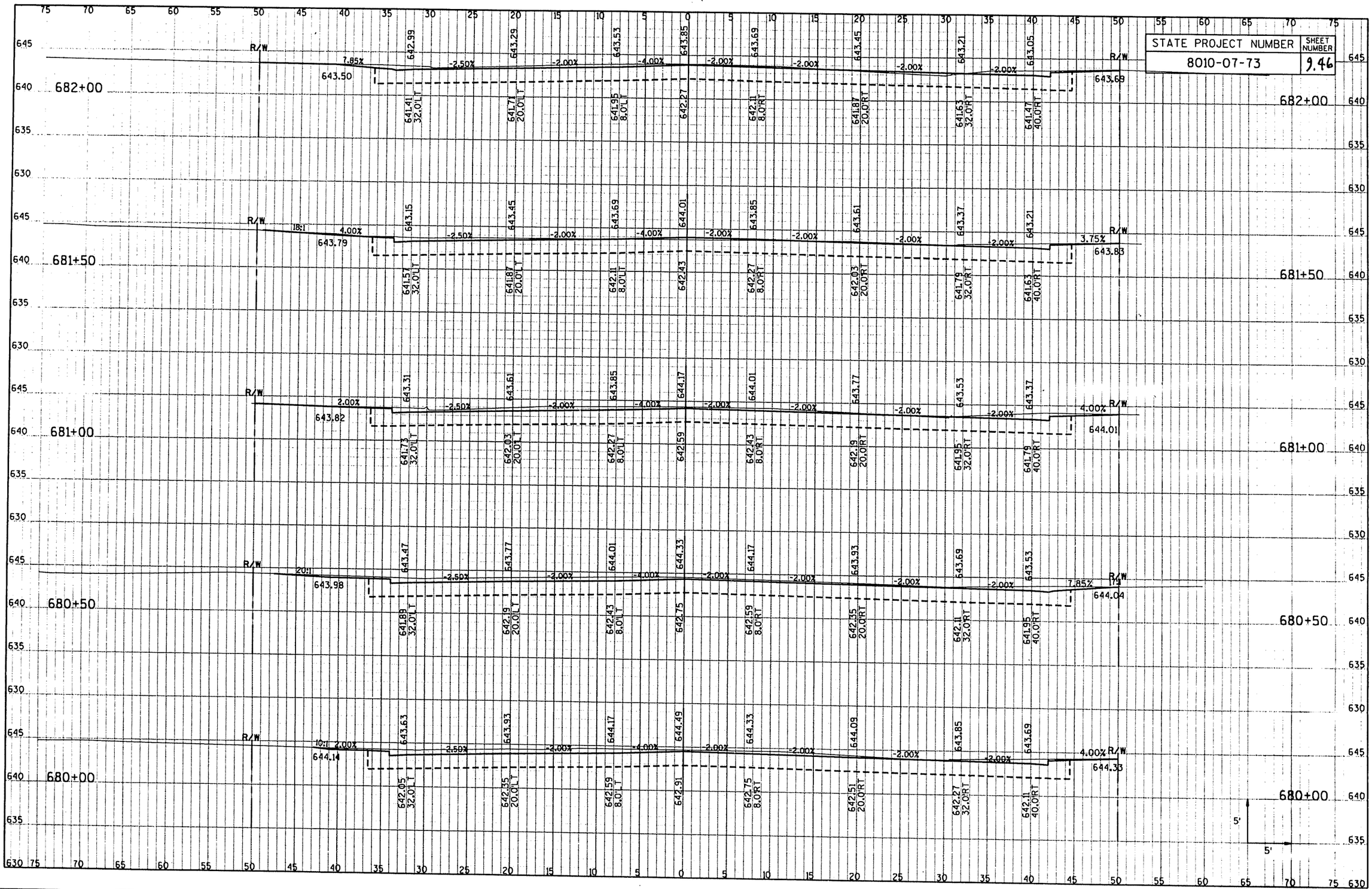
STATE PROJECT NUMBER	SHEET NUMBER
8010-07-73	9.44



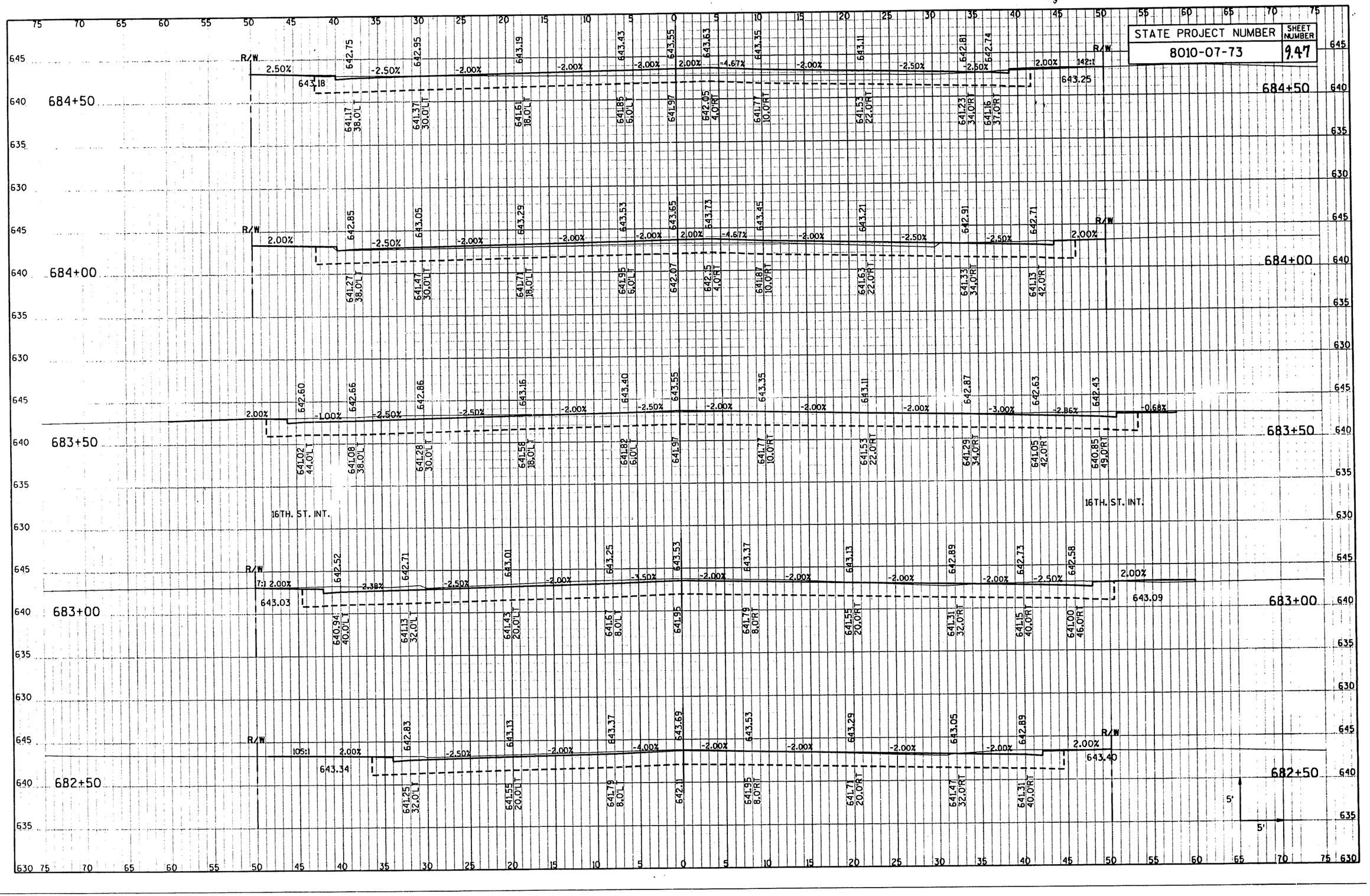
STATE PROJECT NUMBER	SHEET NUMBER
8010-07-73	9.45



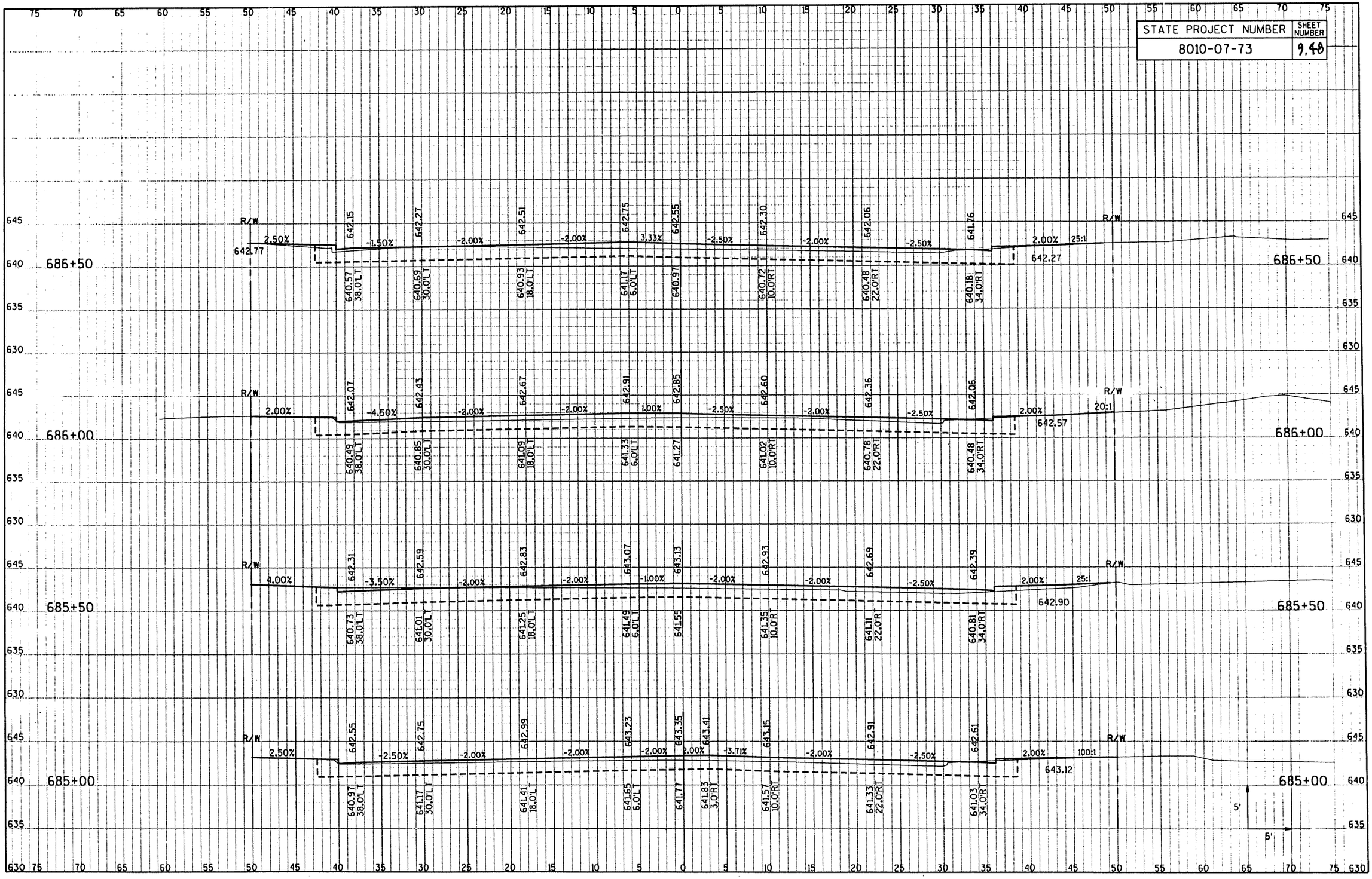
STATE PROJECT NUMBER	SHEET NUMBER
8010-07-73	9.46



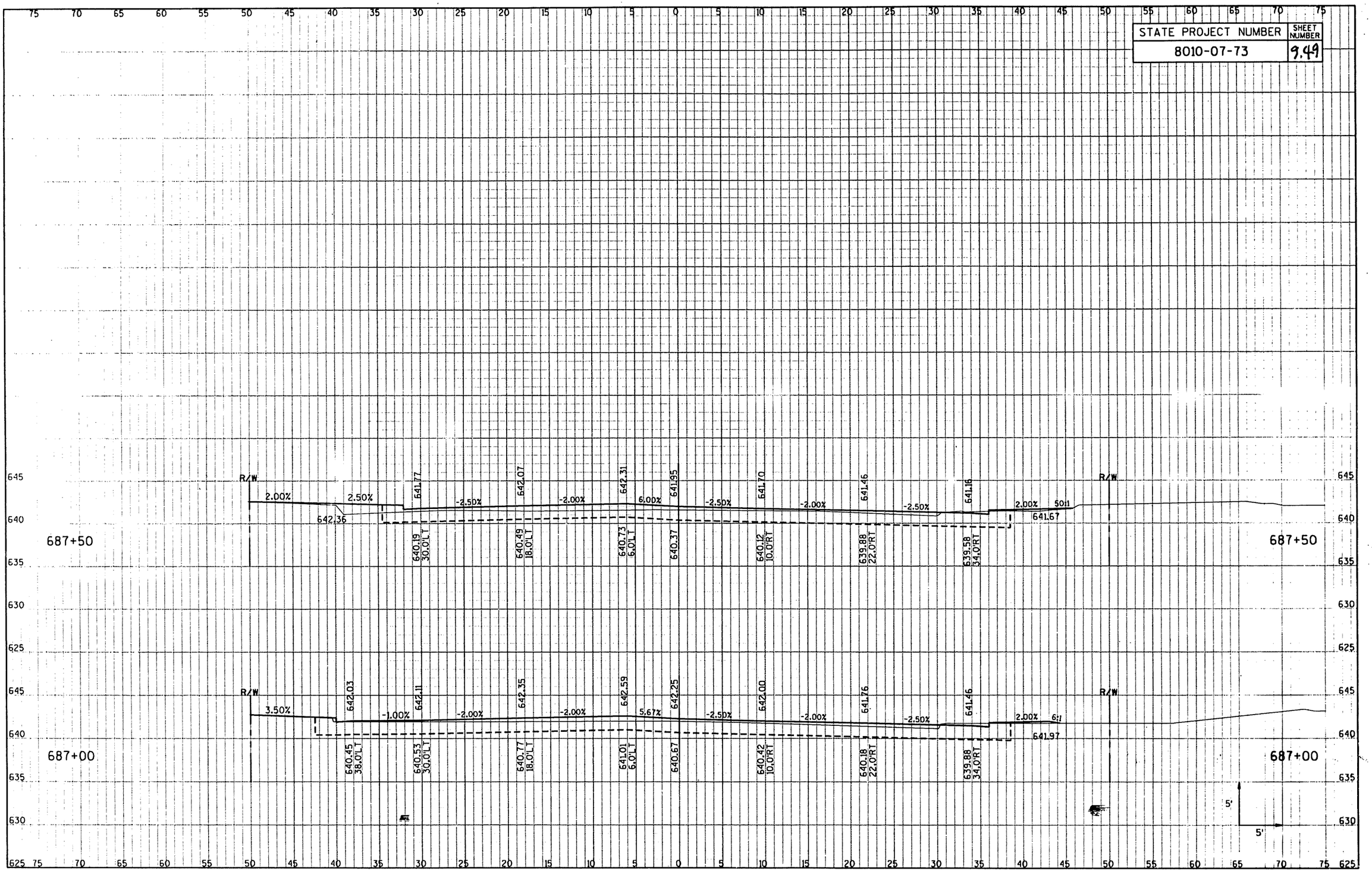
STATE PROJECT NUMBER	SHEET NUMBER
8010-07-73	9.47



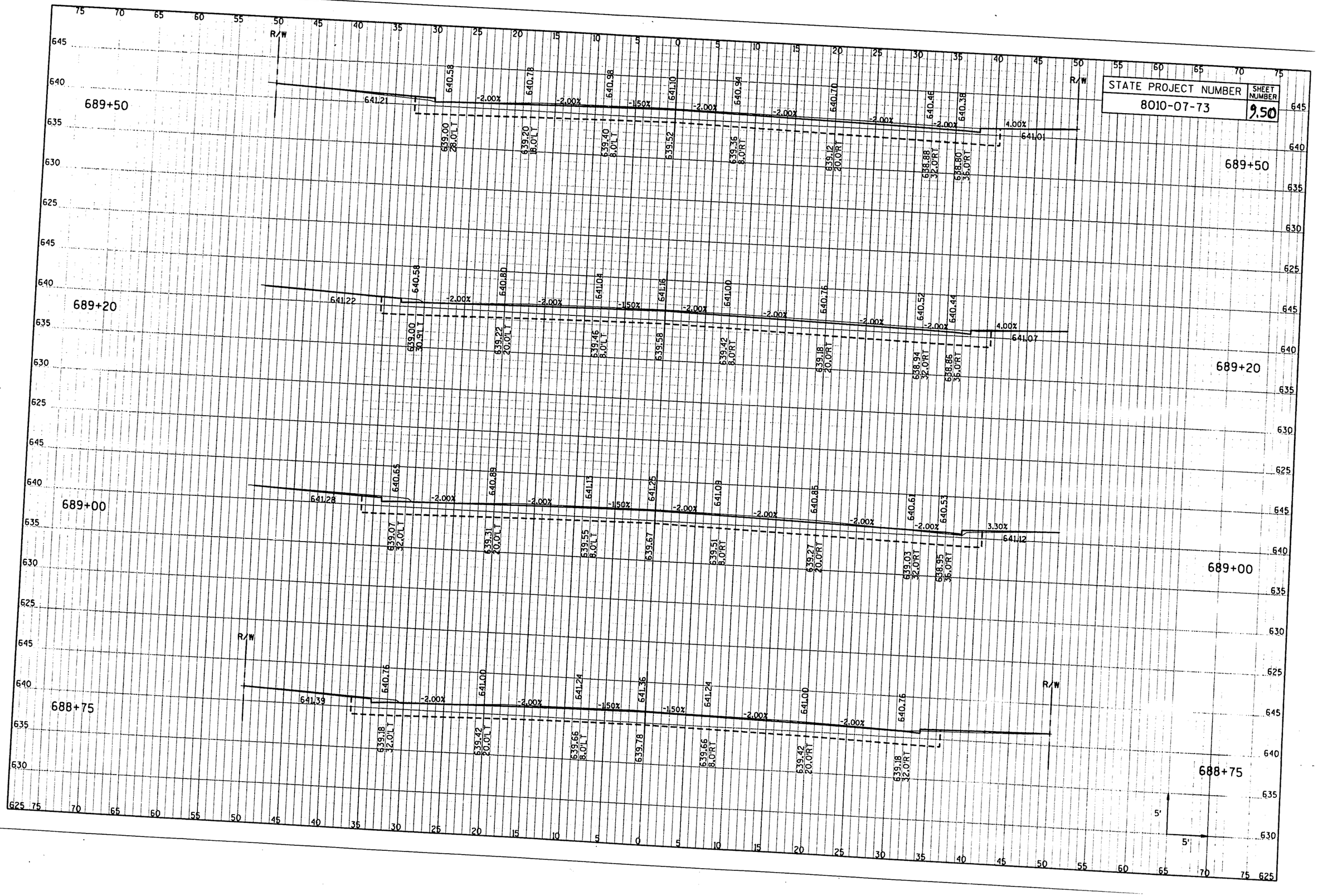
STATE PROJECT NUMBER	SHEET NUMBER
8010-07-73	9.40



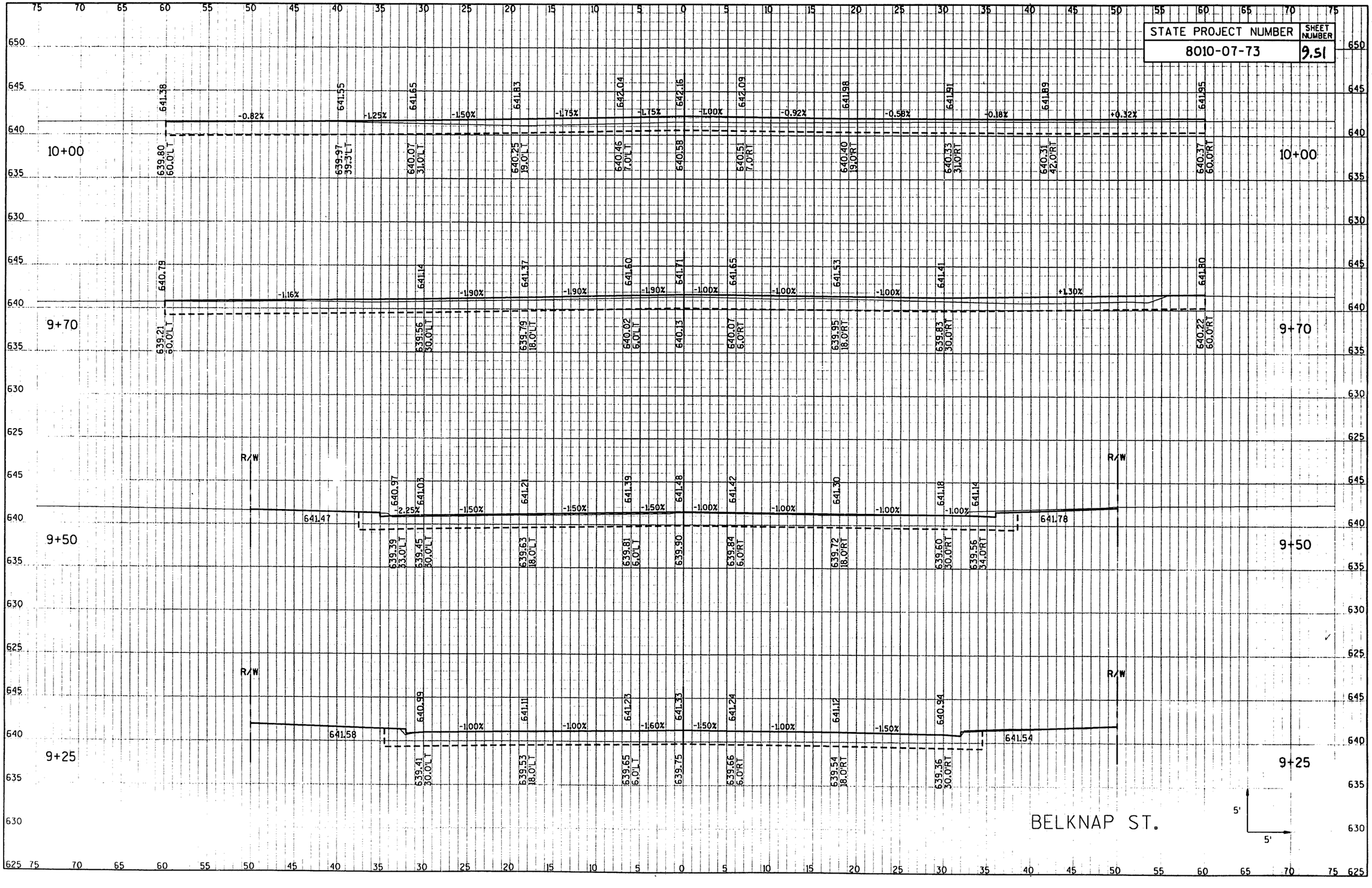
STATE PROJECT NUMBER	SHEET NUMBER
8010-07-73	9.49



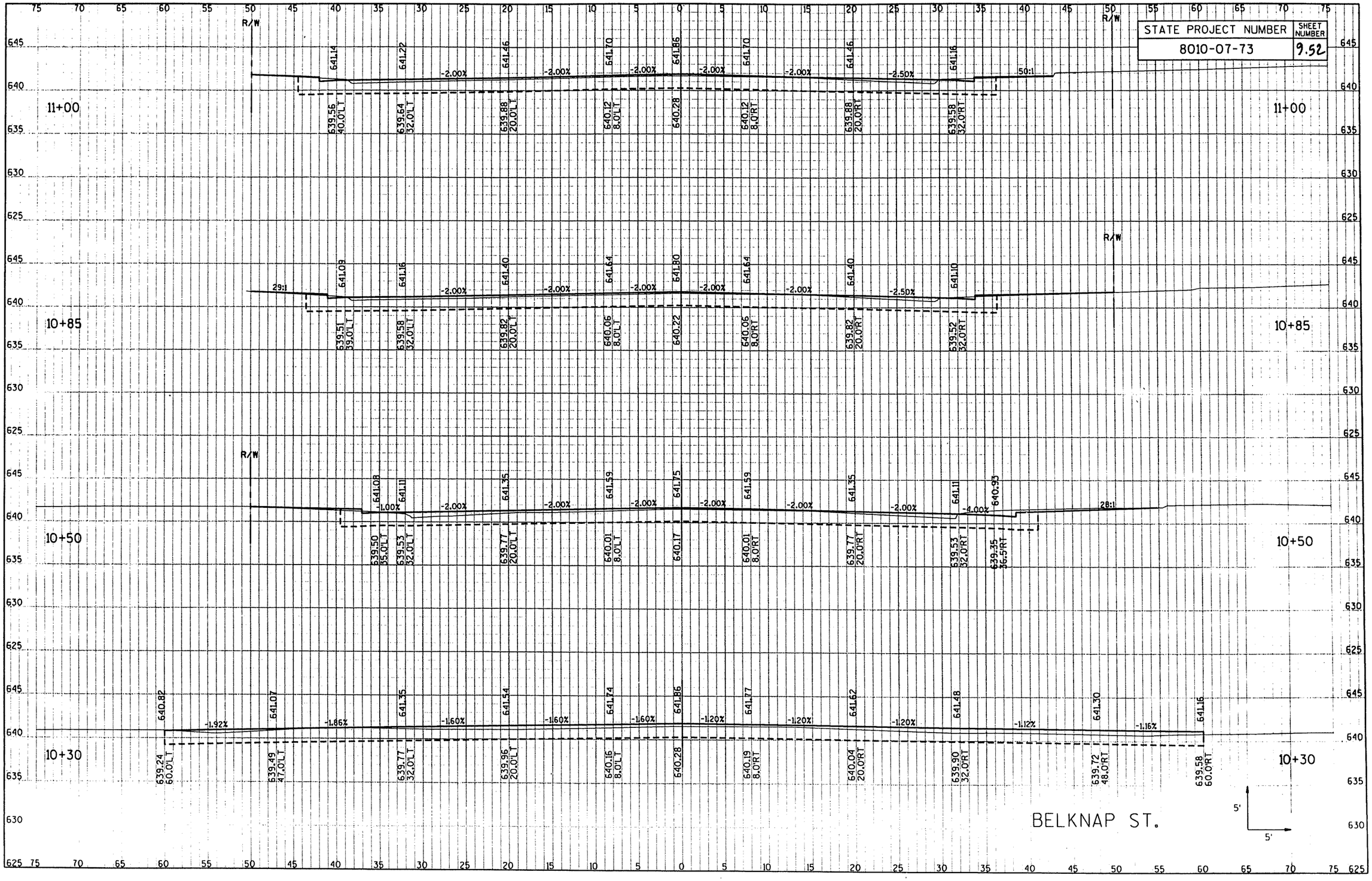
STATE PROJECT NUMBER	SHEET NUMBER
8010-07-73	9.50



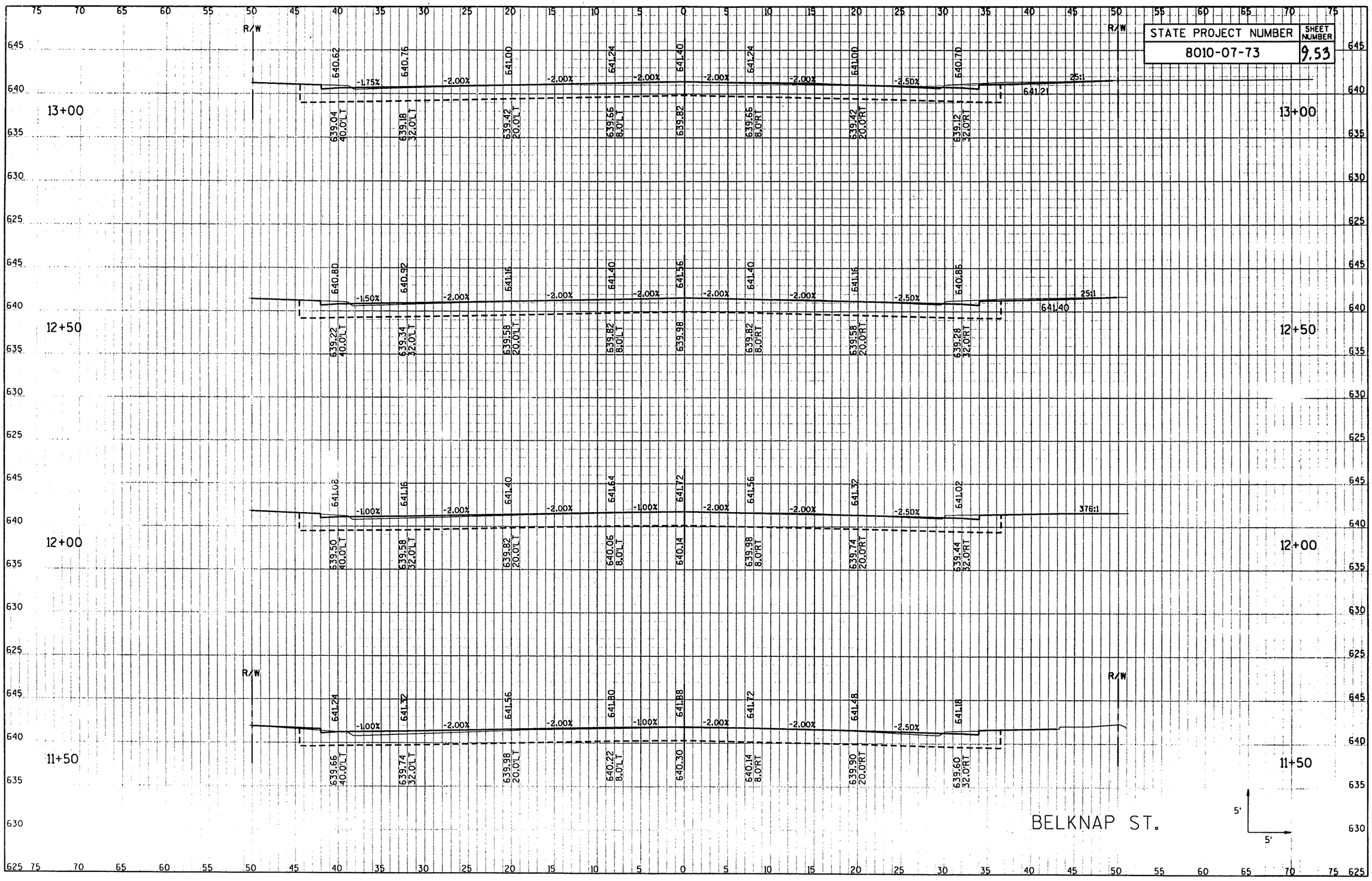
STATE PROJECT NUMBER	SHEET NUMBER
8010-07-73	9.51



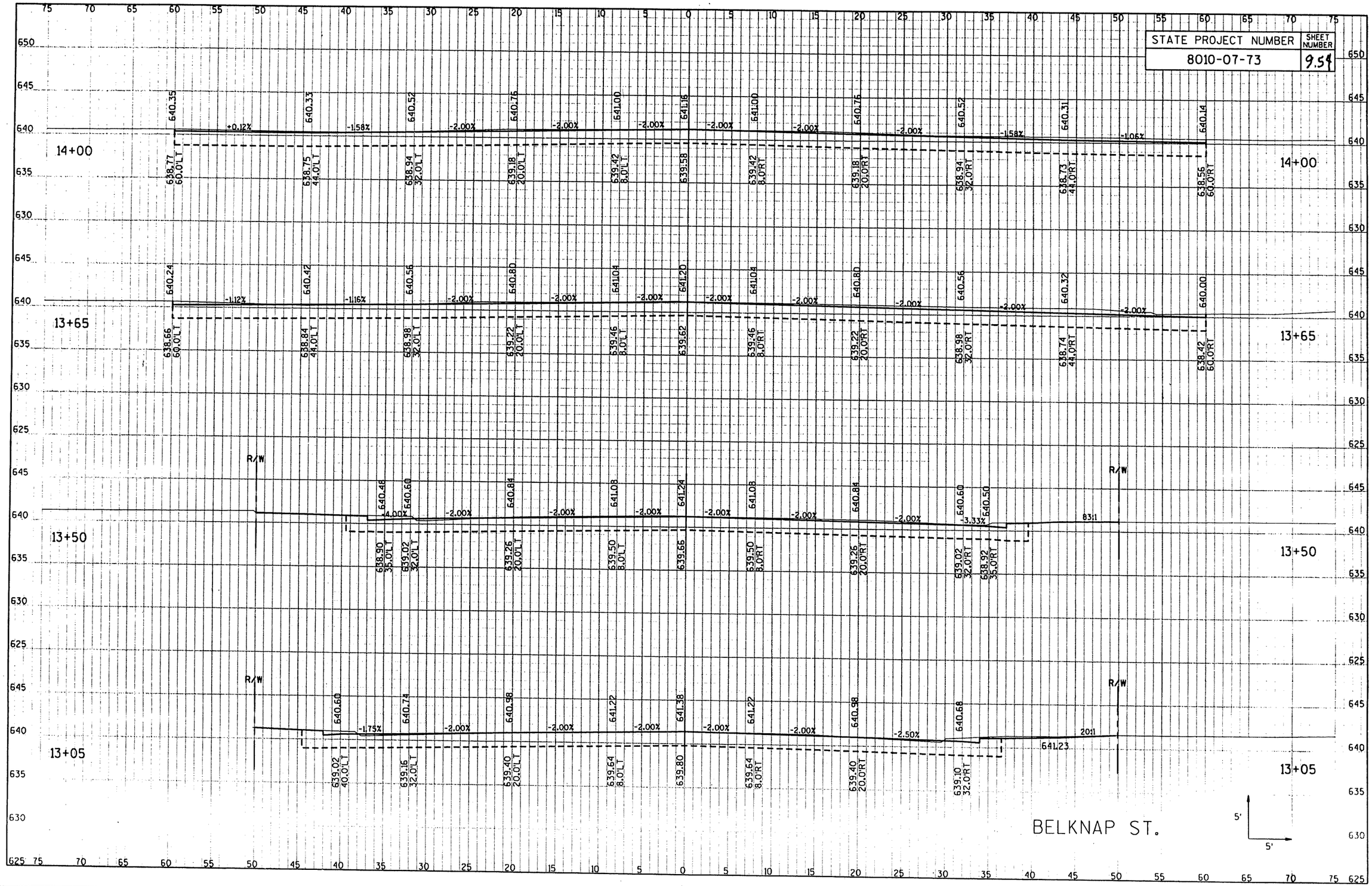
STATE PROJECT NUMBER	SHEET NUMBER
8010-07-73	9.52



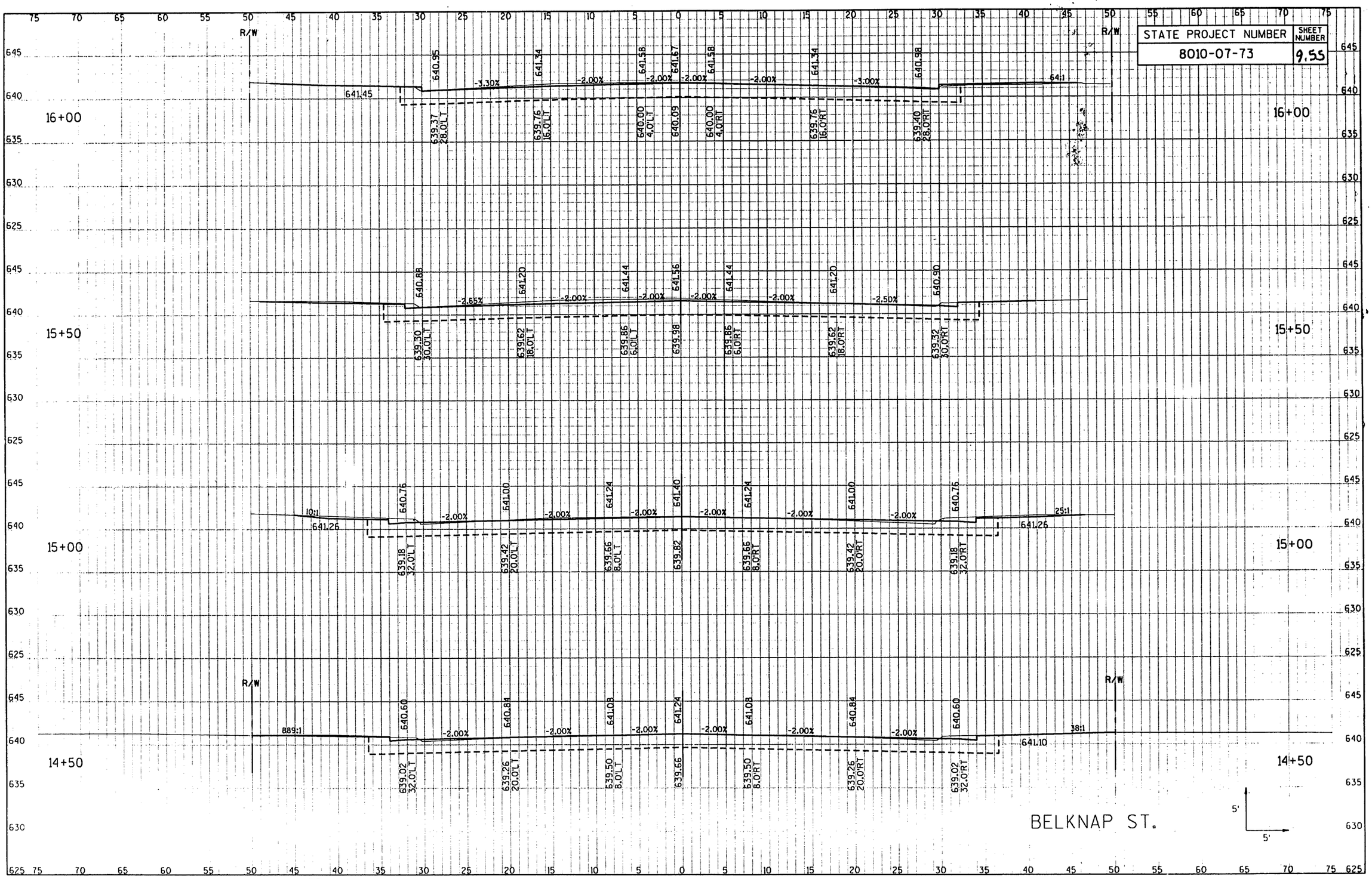
STATE PROJECT NUMBER	SHEET NUMBER
8010-07-73	9.53



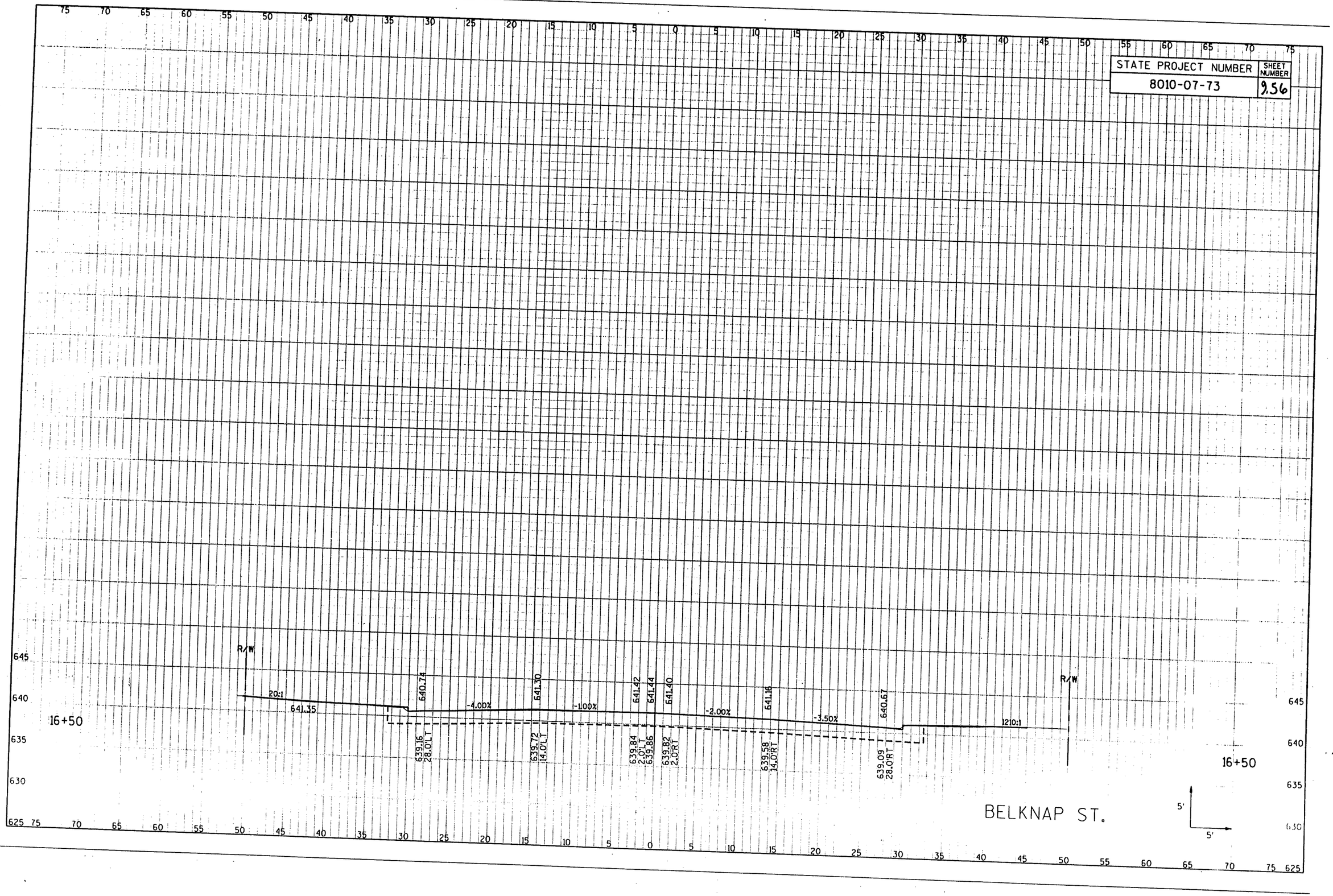
STATE PROJECT NUMBER	SHEET NUMBER
8010-07-73	9.5



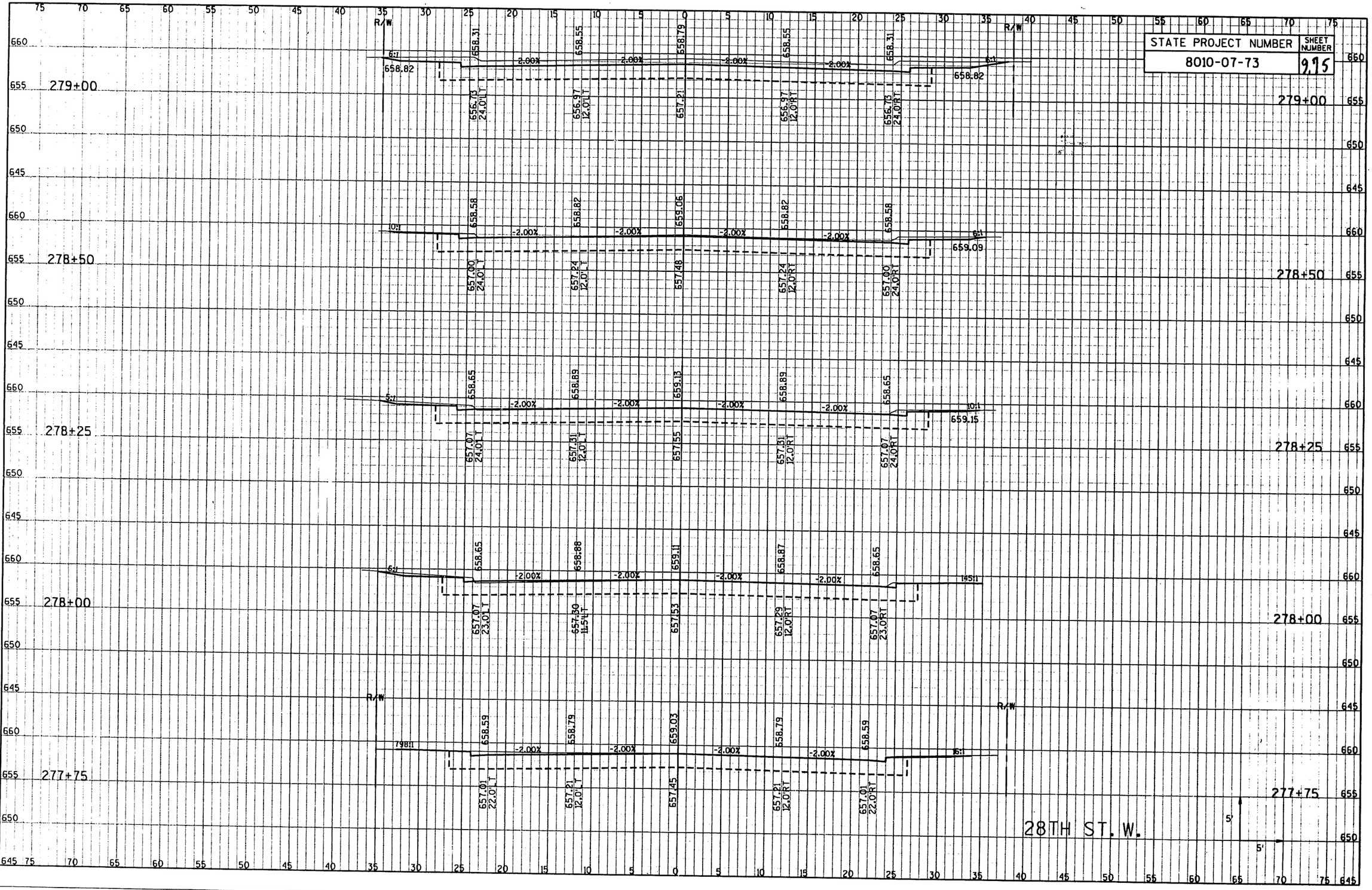
STATE PROJECT NUMBER	SHEET NUMBER
8010-07-73	9.55



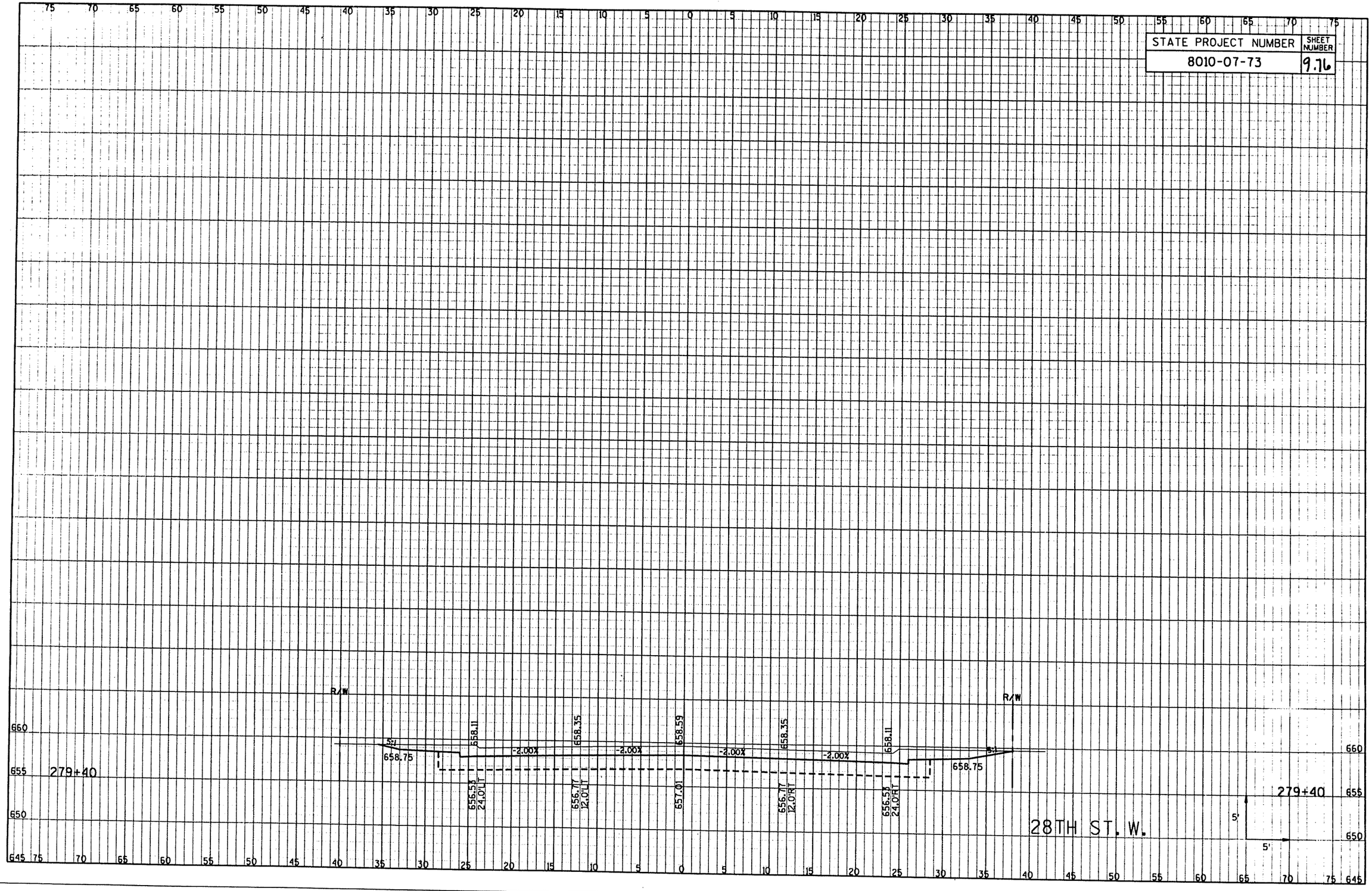
STATE PROJECT NUMBER	SHEET NUMBER
8010-07-73	9.56



STATE PROJECT NUMBER	SHEET NUMBER
8010-07-73	9,15



STATE PROJECT NUMBER	SHEET NUMBER
8010-07-73	9.16



STATE PROJECT NUMBER	SHEET NUMBER
8010-07-73	9.87

209+40

R/W

649.85

6:1

649.21 649.43 649.65 649.43 649.21

-2.00% -2.00% -2.00% -2.00%

647.63 22.0'LT

647.85 11.0'LT

648.07

647.85 11.0'RT

647.63 22.0'RT

649.85

6:1

R/W

209+40

209+00

R/W

650.16

6:1

649.66 649.88 650.10 649.88 649.66

-2.00% -2.00% -2.00% -2.00%

648.08 22.0'LT

648.30 11.0'LT

648.52

648.30 11.0'RT

648.08 22.0'RT

650.16

6:1

R/W

209+00

208+60

R/W

650.60

6:1

650.10 650.32 650.54 650.32 650.10

-2.00% -2.00% -2.00% -2.00%

648.52 22.0'LT

648.74 11.0'LT

648.96

648.74 11.0'RT

648.52 22.0'RT

650.60

6:1

R/W

208+60

208+00

R/W

19:1

650.30 650.44 650.66 650.42 650.30

-2.00% -2.00% -2.00% -2.00%

648.72 18.0'LT

648.86 11.0'LT

649.08

648.84 12.0'RT

648.72 18.0'RT

650.90

6:1

R/W

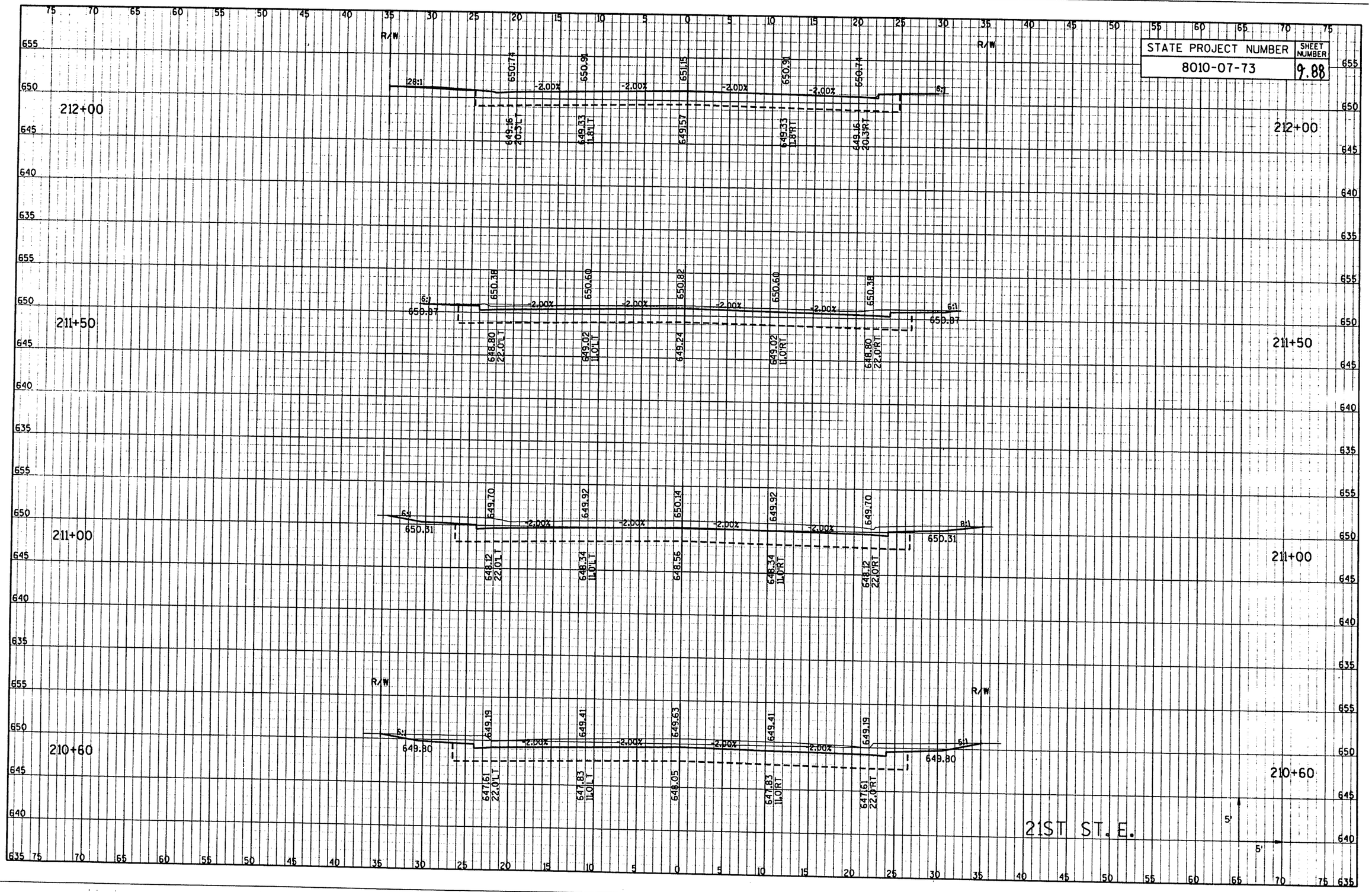
208+00

21ST ST. W.

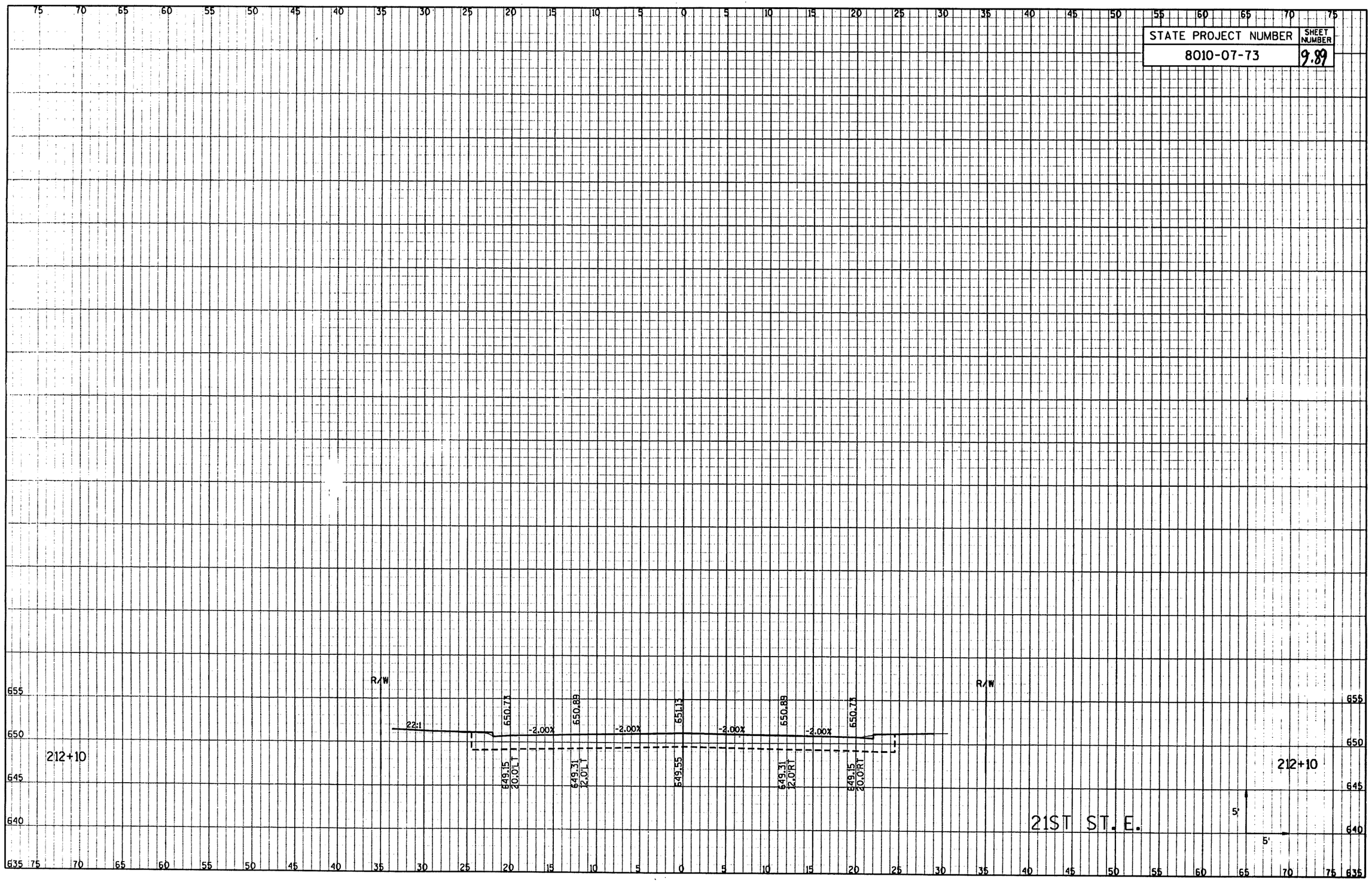
5'

5'

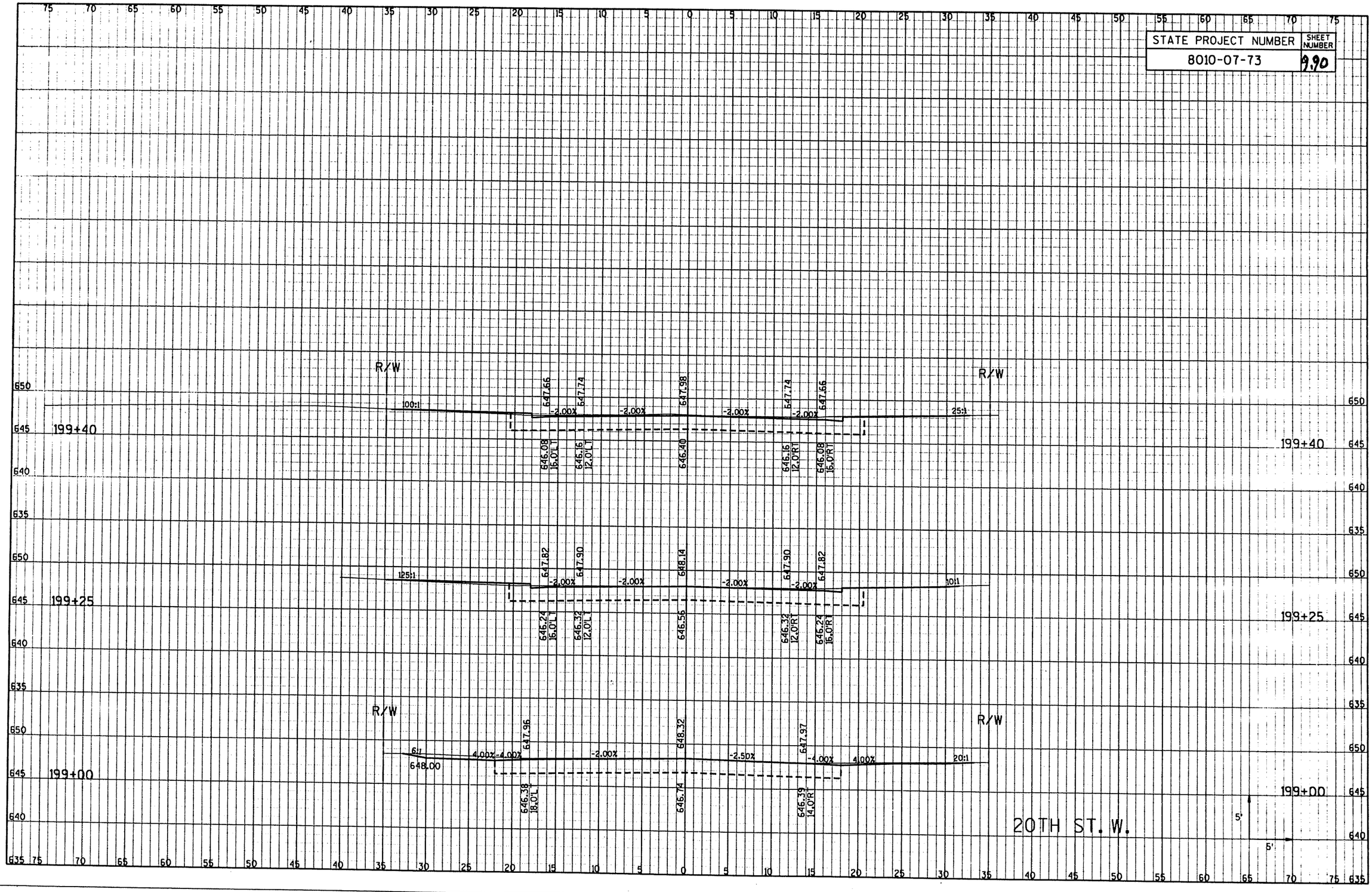
STATE PROJECT NUMBER	SHEET NUMBER
8010-07-73	9.88



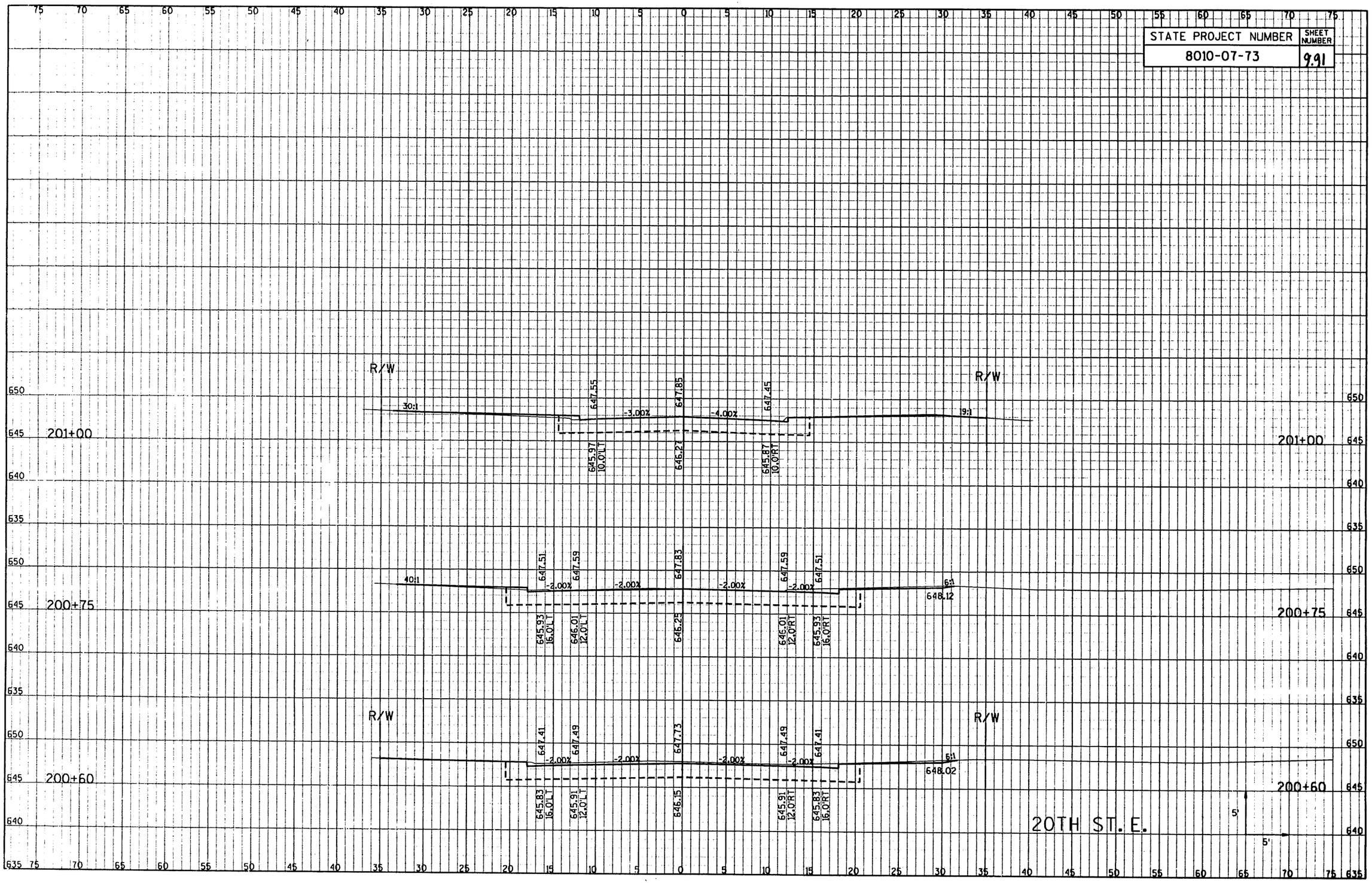
STATE PROJECT NUMBER	SHEET NUMBER
8010-07-73	9.89



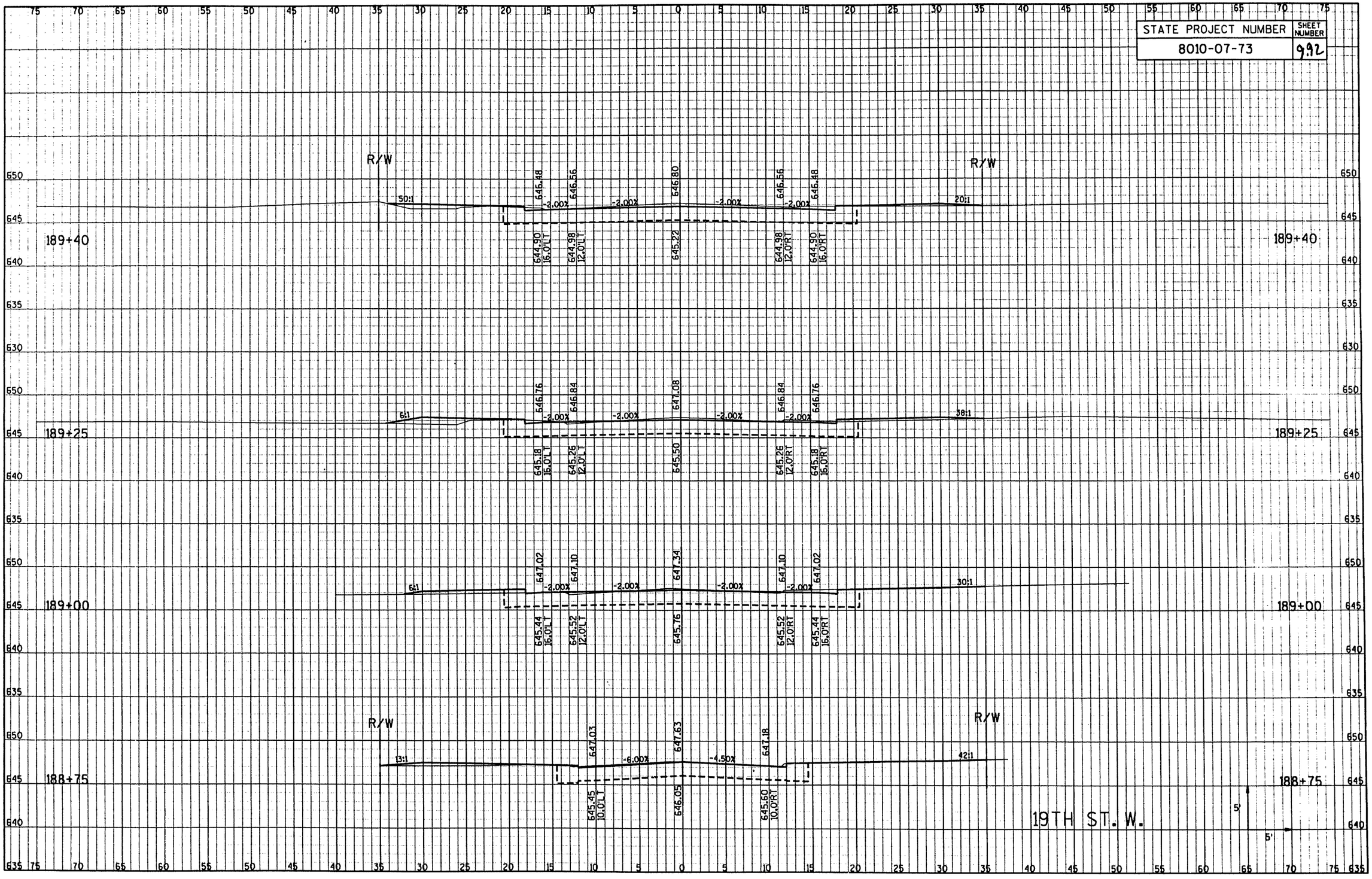
STATE PROJECT NUMBER	SHEET NUMBER
8010-07-73	9,90



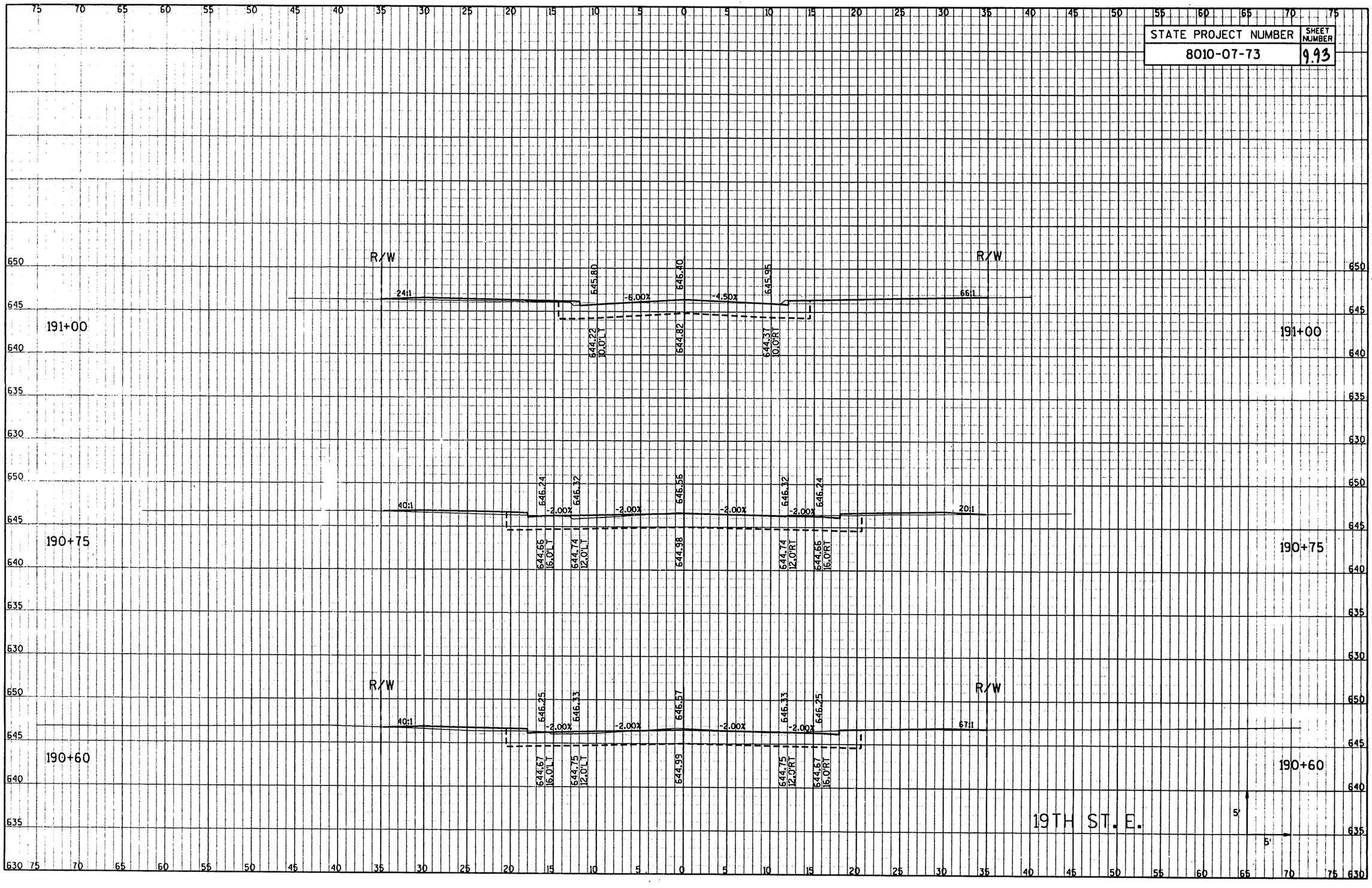
STATE PROJECT NUMBER	SHEET NUMBER
8010-07-73	9.91



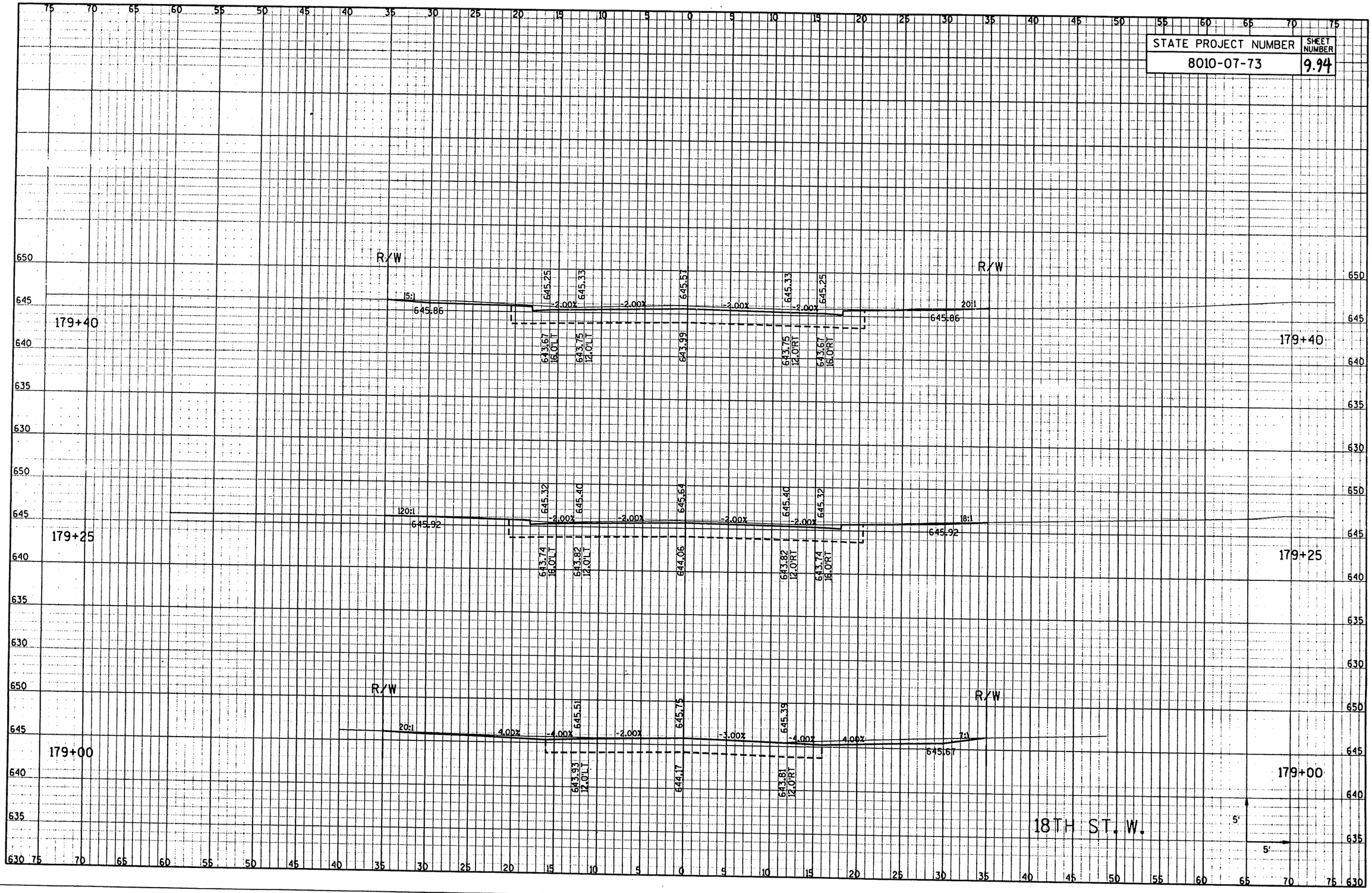
STATE PROJECT NUMBER	SHEET NUMBER
8010-07-73	9.92



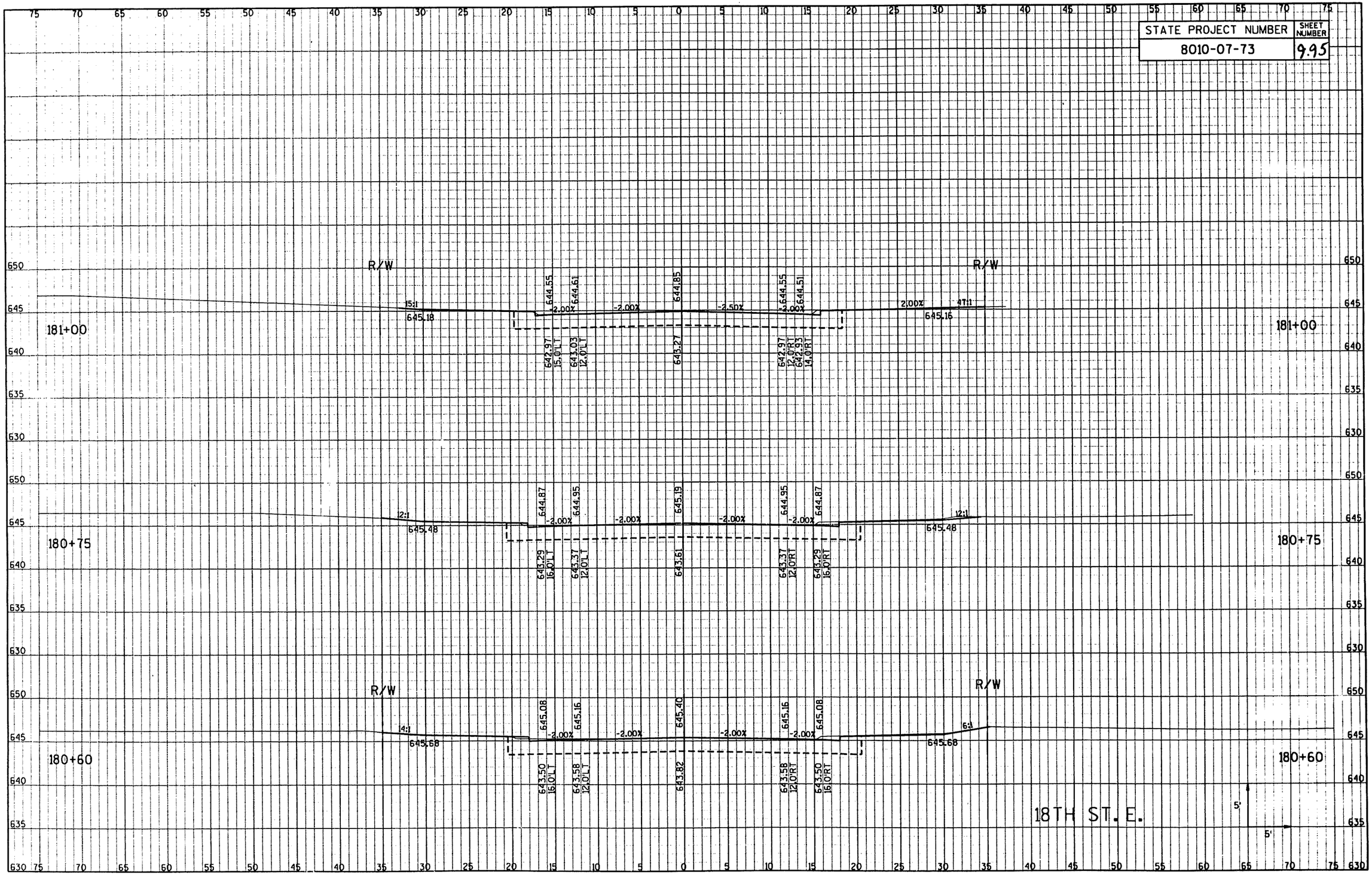
STATE PROJECT NUMBER	SHEET NUMBER
8010-07-73	9.93



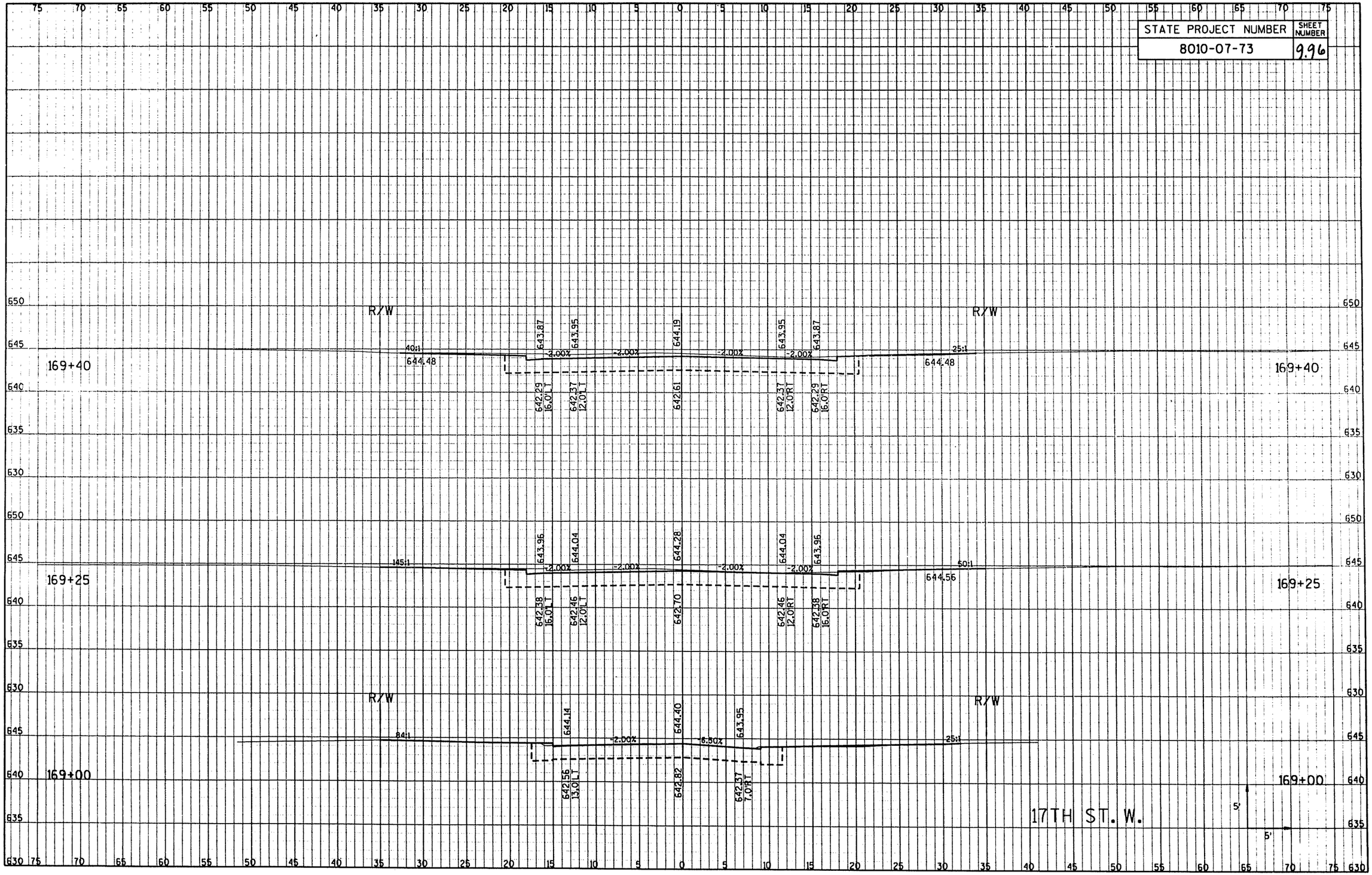
STATE PROJECT NUMBER	SHEET NUMBER
8010-07-73	9.94



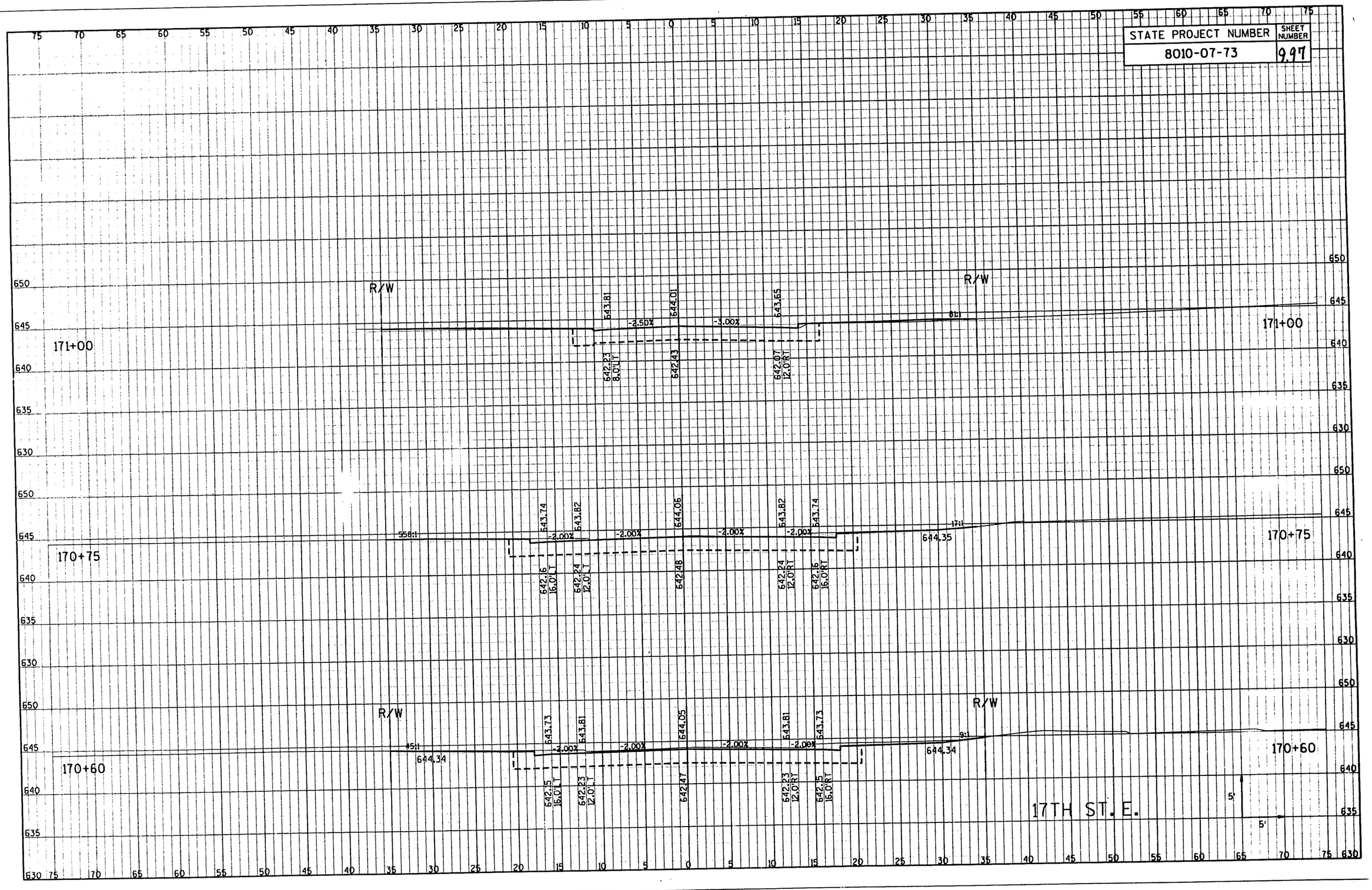
STATE PROJECT NUMBER	SHEET NUMBER
8010-07-73	9.95



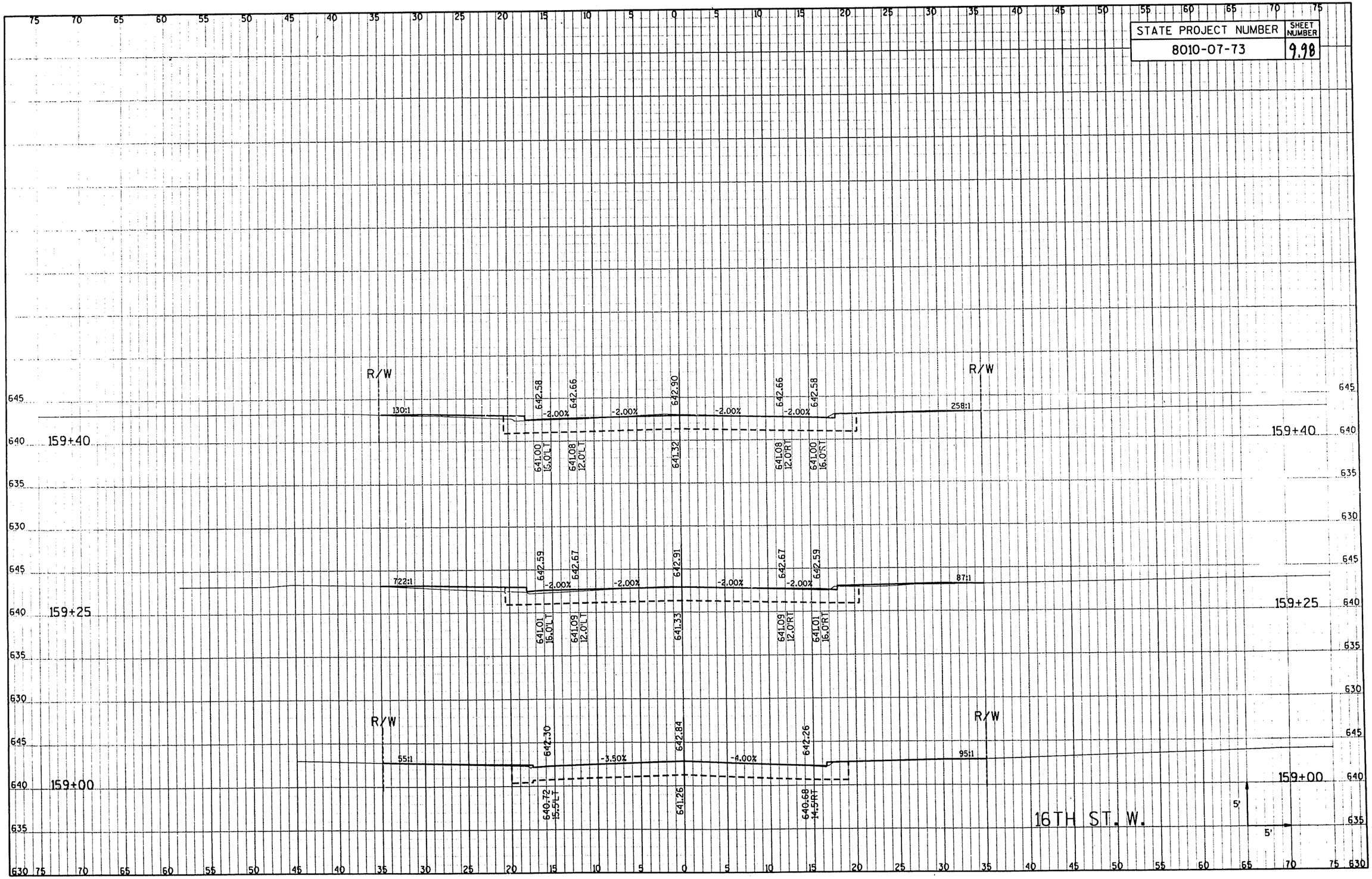
STATE PROJECT NUMBER	SHEET NUMBER
8010-07-73	9.96



STATE PROJECT NUMBER	SHEET NUMBER
8010-07-73	9.97



STATE PROJECT NUMBER	SHEET NUMBER
8010-07-73	9.98



STATE PROJECT NUMBER	SHEET NUMBER
8010-07-73	9.99