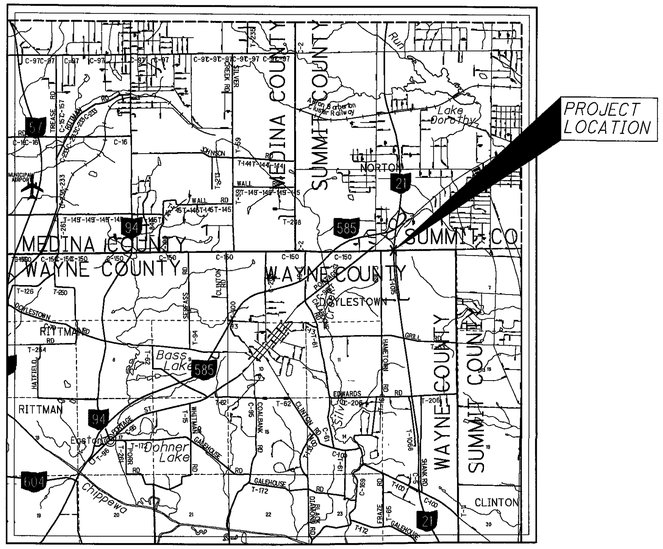


LOCATION MAP

LATITUDE: N 40° 59′ 13″ LONGITUDE: W 81° 39′ 49″

SCALE IN MILES

0 1 2 3 4

N

PORTION TO BE IMPROVED

INTERSTATE & DIVIDED HIGHWAY

UNDIVIDED STATE & FEDERAL ROUTES

OTHER ROADS

DESIGN DESIGNATION

	SR21 N. OF CR150	SR21 S. OF CR150	CR150 E. OF SR21	CR150 W. OF SR21
CURRENT ADT (2008)	24,400	23,200	4,700	10,280
DESIGN YEAR ADT (2028)	27,100	25,690	5,400	11,490
DESIGN HOURLY VOLUME (2028)	2,710	2,570	540	1,149
DIRECTIONAL DISTRIBUTION	0.50	0.50	0.50	0.50
TRUCKS (24 HOUR B&C)	0.06	0.07	0.03	0.06
DESIGN SPEED	60	60	35	35
LEGAL SPEED	60	60	35	35

DESIGN FUNCTIONAL CLASSIFICATION:

URBAN PRINCIPAL ARTERIAL	SR21 S. OF CR150
URBAN FREEWAY EXPRESSWAY	SR21 N. OF CR150
LOCAL COLLECTOR	CR150

NHS PROJECT ..... YES

DESIGN EXCEPTIONS

NONE

UNDERGROUND UTILITIES

CONTACT BOTH SERVICES
CALL TWO WORKING DAYS
BEFORE YOU DIG

CALL
1-800-362-2764
(TOLL FREE)
OHIO UTILITIES PROTECTION SERVICE
NON-MEMBERS
MUST BE CALLED DIRECTLY

OIL & GAS PRODUCERS PROTECTIVE SERVICE CALL: 1-800-925-0988

PLAN PREPARED BY:

DISTRICT THREE PRODUCTION DEPARTMENT

ENGINEERS SEAL:

STATE OF OHIO
MICHAEL JOSEPH SCHAFFATH
67643
REGISTERED
PROFESSIONAL ENGINEER

SIGNED: Michael J Schaffath
DATE: 6/1/07

ENGINEERS SEAL:

STATE OF OHIO
RICHARD JAMES RONEY
E-50593
REGISTERED
PROFESSIONAL ENGINEER

SIGNED: Richard J. Roney
DATE: 6/1/07

STATE OF OHIO

DEPARTMENT OF TRANSPORTATION

WAY-21-5.74
SUM-21-0.00

CHIPPEWA TOWNSHIP

CITY OF NORTON

INDEX OF SHEETS:

STANDARD CONSTRUCTION DRAWINGS

										SUPPLEMENTAL SPECIFICATIONS	
BP-1.1	7/28/00	DM-1.1	4/2/06	HL-10.13	1/17/03	MT-35.10	4/20/01	TC-41.20	1/19/01	800	7/20/07
BP-2.5	7/28/00	DM-1.2	10/21/05	HL-20.11	1/19/07	MT-95.30	9/05/06	TC-41.30	1/19/07	802	4/15/05
BP-3.1	7/16/04	DM-1.4	4/21/06	HL-30.11	1/21/05	MT-95.40	10/20/06	TC-42.20	7/16/04	832	4/25/06
		DM-4.3	7/19/02	HL-30.22	1/21/05	MT-95.50	9/05/06	TC-52.10	1/19/07	835	4/21/06
CB-2.3	7/15/05	DM-4.4	7/19/02	HL-60.11	1/19/07	MT-97.10	9/05/06	TC-52.20	1/19/07	872	4/21/06
CB-3.3	7/15/05					MT-97.11	9/05/06	TC-65.10	1/21/05		
		WQ-1.2	4/21/06			MT-98.15	7/16/04	TC-65.11	1/21/05		
I-2.2	7/15/05					MT-98.16	4/19/02	TC-71.10	1/19/07		
		GR-1.1	7/16/04			MT-99.20m	1/30/95	TC-73.10	1/19/01		
MH-1.1	7/19/02	GR-2.1	1/16/04			MT-101.70	10/18/02	TC-82.10	4/19/02	SPECIAL PROVISIONS	
MH-1.2	1/20/06	GR-3.5	4/18/03			MT-105.10	10/18/02	TC-85.20	5/01/00		
MH-3.1	7/20/01	GR-4.1	4/18/03			MT-105.11	10/18/02				
		GR-4.2	1/19/07								
		GR-5.1	4/18/03								
RM-4.3	1/19/07	GR-5.3	1/16/04								
RM-4.6	1/16/04										

PROJECT DESCRIPTION

THIS PROJECT CONSISTS OF EXTENSION OF LEFT TURN LANES AND WIDENING OF THE PAVEMENT IN THE GRASS MEDIAN TO CREATE OFFSET LEFT TURN LANES AT SR21 AND CR150. MEDIAN CONCRETE BARRIER WILL BE CONSTUCTED AND THE TRAFFIC SIGNAL HEADS WILL BE ALIGNED AND UPDATED FOR THE RECONFIGURED TURN LANES.

PROJECT EARTH DISTURBED AREA:	1.61 ACRES
ESTIMATED CONTRACTOR EARTH DISTRUBED AREA:	0.45 ACRES
NOTICE OF INTENT EARTH DISTURBED AREA:	4.90 ACRES

LIMITED ACCESS

THIS IMPROVEMENT IS ESPECIALLY DESIGNED FOR THROUGH TRAFFIC AND HAS BEEN DECLARED A LIMITED ACCESS HIGHWAY OR FREEWAY BY ACTION OF THE DIRECTOR IN ACCORDANCE WITH THE PROVISIONS OF SECTION 5511.02 OF THE OHIO REVISED CODE.

UNDER AUTHORITY OF SECTION 4511.21, DIVISION (H) OF THE OHIO REVISED CODE, THE REVISED PRIMA FACIE SPEED LIMITS AS INDICATED HEREIN ARE DETERMINED TO BE REASONABLE AND SAFE, AND ARE HEREBY ESTABLISHED FOR THE DURATION OF THIS PROJECT. THE PRIMA FACIE SPEED LIMIT OR LIMITS HEREBY ESTABLISHED SHALL BECOME EFFECTIVE WHEN APPROPRIATE SIGNS GIVING NOTICE THEREOF ARE ERECTED.

CONVERSION OF METRIC STANDARD DRAWINGS

THE METRIC STANDARD DRAWINGS REFERENCED IN THIS PLAN SHALL BE CONVERTED TO ENGLISH UNITS USING THE SI (METRIC) TO ENGLISH CONVERSIONS FACTORS PROVIDED IN SECTION 109.02 OF THE 2005 CMS. CONVERSIONS SHALL BE APPROXIMATELY PRECISE AND SHALL REFLECT STANDARD INDUSTRY ENGLISH VALUES WHERE SUITABLE.

2005 SPECIFICATIONS

THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, INCLUDING CHANGES AND SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PROPOSAL SHALL GOVERN THIS IMPROVEMENT.

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL NOT REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY AND THAT PROVISIONS FOR THE MAINTENANCE AND SAFETY OF TRAFFIC WILL BE AS SET FORTH ON THE PLANS AND ESTIMATES.

APPROVED John Hart
DATE 6-1-07 DISTRICT DEPUTY DIRECTOR

APPROVED James G. Beasley, Jr.
DATE 6-8-07 DIRECTOR, DEPARTMENT OF TRANSPORTATION

FEDERAL PROJECT NO. NON FEDERAL

PID NO. 81797

CONSTRUCTION PROJECT NO.

RAILROAD INVOLVEMENT NONE

WAY-21-5.74

WAY - SR 21 - 5.74/0.00 9 (City of Nort
070429 PID - 81797
Dist 3 8/29/2007

Begin Project
Sta. 293+00
S.L.M. 5.54

NON FEDERAL

Ex LA-R/W — Ex LA-R/W — N 2° 05′ 37″ W 1,110.21′ — Ex LA-R/W

288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 N 2° 05′ 37″ W 303 304 305

MATCH LINE 305+00

PC Sta. 288+85.65

P.I. STA. 292+87.69
D = 6° 01′ 30″ (RT)
Dc = 0° 45′ 00″
R = 7,639.44′
T = 402.04′
L = 803.33′
E = 10.57′

PT Sta. 296+88.98

Ex LA-R/W — Ex LA-R/W — N 2° 05′ 37″ W 1,110.21′ — Ex LA-R/W

Ex R/W — Ex R/W — N 2° 05′ 37″ W 1,110.21′ — Ex R/W

2 POST SIGN
"SILVER CREEK
METRO PARKS"

*37 TRAV CAP
1250'± S OF INTERSECTION
OF SR 21 & EASTERN RD
N 481,507.8178 E 2,199,751.6039
ELEVATION 1185.24

260′ — 345.5′

6′ OFF EOP

TRAFFIC SIGNAL AHEAD
SIGN W/BLINKING LIGHT

DESIGN FILE: I: \projects\81797\roadway\sheets\817976B001.dgn
WORKSTATION:mschafra DATE:6/1/2007

N

0 30 60 120
HORIZONTAL
SCALE IN FEET

CALCULATED MJS
CHECKED BAD

SCHEMATIC PLAN

WAY-21-5.74

#31 NGS STATION MARK DISK STAMPED "RICK 1983" SET IN THE TOP OF A 12 INCH ROUND CONCRETE POST WHICH PROJECTS 1 INCH ABOVE THE SURFACE. IT IS 497 FT SW FROM THE SW CORNER OF THE BRIDGE FOR SB LANE OF SR21, 260 FT WEST FROM THE CENTER OF THE SB LANE OF SR21 AND 4.3 FT SOUTH FROM A CARSONITE WITNESS POST.
N 483,761.3616 E 2,199,435.8269
ELEVATION 1158.84

#34 MINE SPIKE
575' N OF INTERSECTION
OF SR 21 & EASTERN RD
N 483,333.1605 E 2,199,629.7614
ELEVATION 1167.33

#36 MINE SPIKE
1140' N OF INTERSECTION
OF SR 21 & EASTERN RD
N 483,886.8191 E 2,199,685.0036
ELEVATION 1163.72

#33 TRAV CAP
NE CORNER OF INTERSECTION
OF SR 21 & EASTERN RD
N 482,813.2281 E 2,199 ,751.0389
ELEVATION 1173.60

#35 TRAV CAP
630'± S OF INTERSECTION
OF SR 21 & EASTERN RD
N 482,138.6747 E 2,199,728.2227
ELEVATION 1178.98

#32 TRAV CAP
S SIDE OF INTERSECTION OF
SR 21 & EASTERN RD IN MEDIAN
N 482,716.1042 E 2,199,658.2268
ELEVATION 1173.63

P.I. STA. 309+89.71
D = 2° 50' 21" (RT)
Dc = 0° 45' 00"
R = 7,639.44'
T = 189.32'
L = 378.57'
E = 2.35'

P.I. STA. 5+33.12
D = 7° 59' 02" (RT)
Dc = 0° 45' 00"
R = 7,639.44'
T = 533.12'
L = 1,064.50'
E = 18.58'

End Project
Sta. 9+16
S.L.M. 0.17

NON FEDERAL

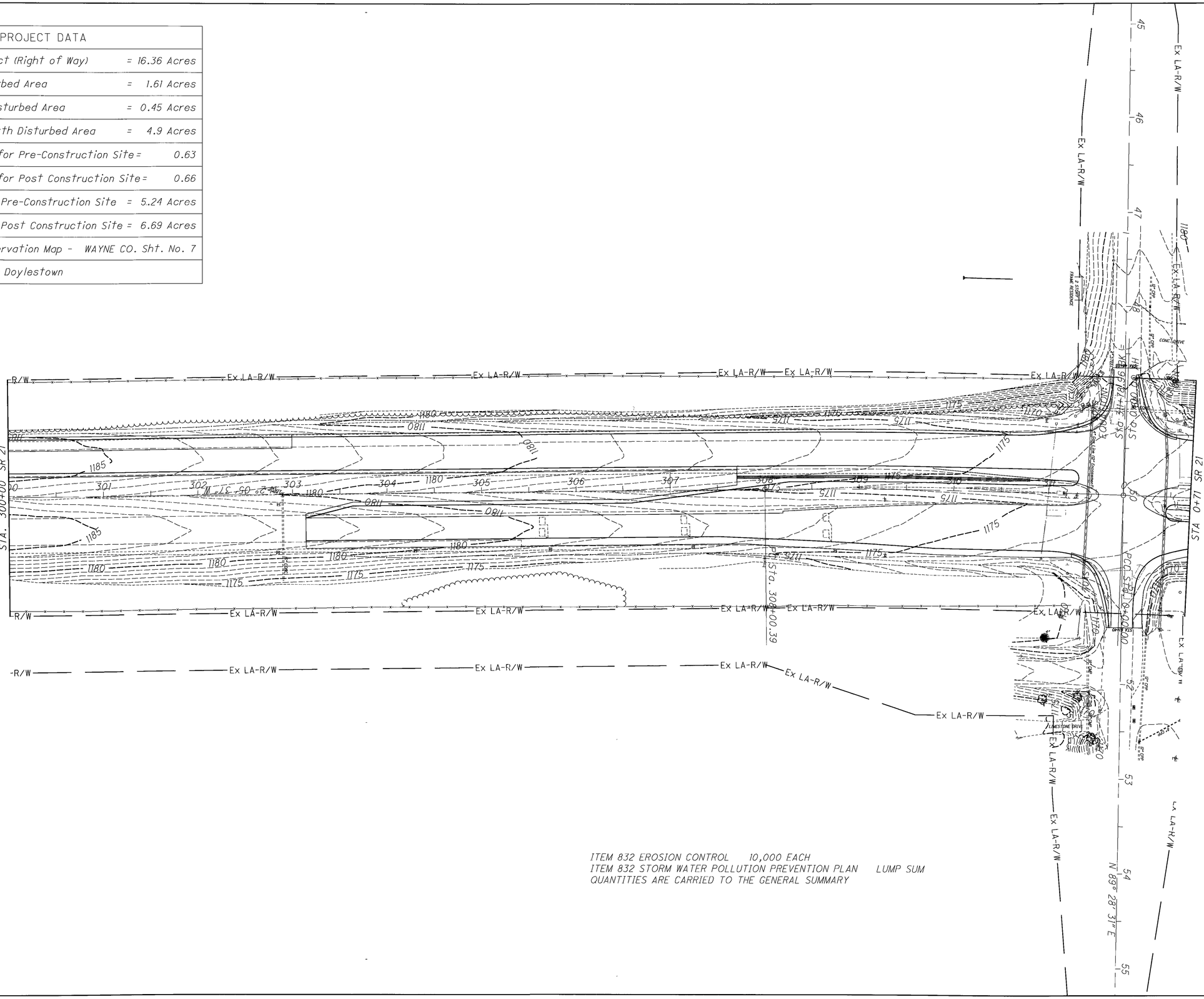
CALCULATED
MJS
CHECKED
BAD

SCHEMATIC PLAN

WAY-21-5.74

DESIGN FILE: I: \projects\81797\roadway\sheets\81797GB002.dgn
WORKSTATION:mschafra DATE:6/1/2007

PROJECT DATA	
Total Area of Project (Right of Way)	= 16.36 Acres
Project Earth Disturbed Area	= 1.61 Acres
Contractor Earth Disturbed Area	= 0.45 Acres
Notice of Intent Earth Disturbed Area	= 4.9 Acres
Runoff Coefficient for Pre-Construction Site	= 0.63
Runoff Coefficient for Post Construction Site	= 0.66
Impervious Area for Pre-Construction Site	= 5.24 Acres
Impervious Area for Post Construction Site	= 6.69 Acres
Soil and Water Conservation Map - WAYNE CO. Sht. No. 7	
USGS Quadrant Map - Doylestown	



ITEM 832 EROSION CONTROL 10,000 EACH
ITEM 832 STORM WATER POLLUTION PREVENTION PLAN LUMP SUM
QUANTITIES ARE CARRIED TO THE GENERAL SUMMARY

DESIGN FILE: I:\projects\81797\roadway\sheets\81797DE001.dgn
WORKSTATION: mschafra DATE: 6/1/2007

N

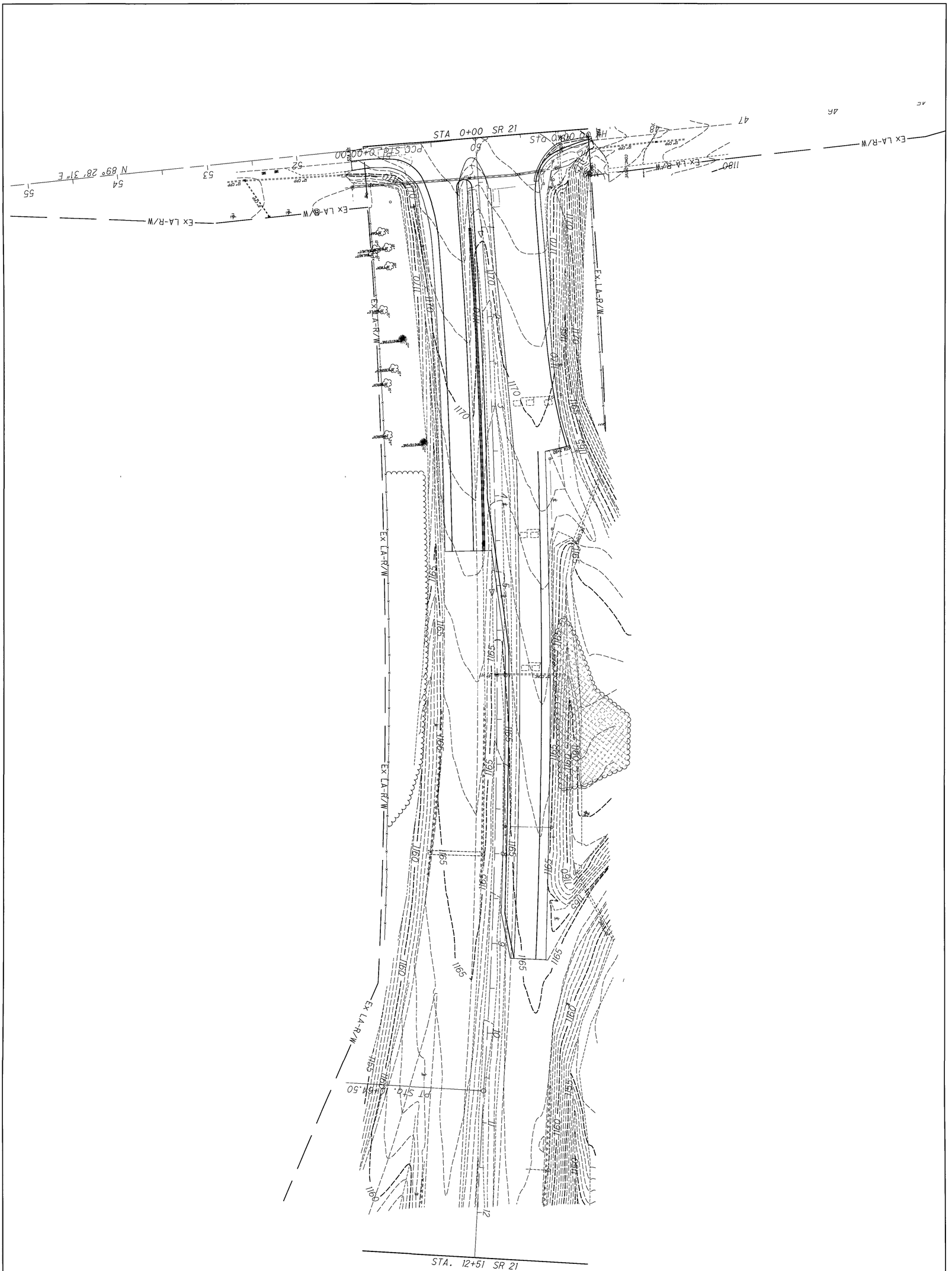
0 25 50 100
HORIZONTAL
SCALE IN FEET

CALCULATED SJD
CHECKED BAD

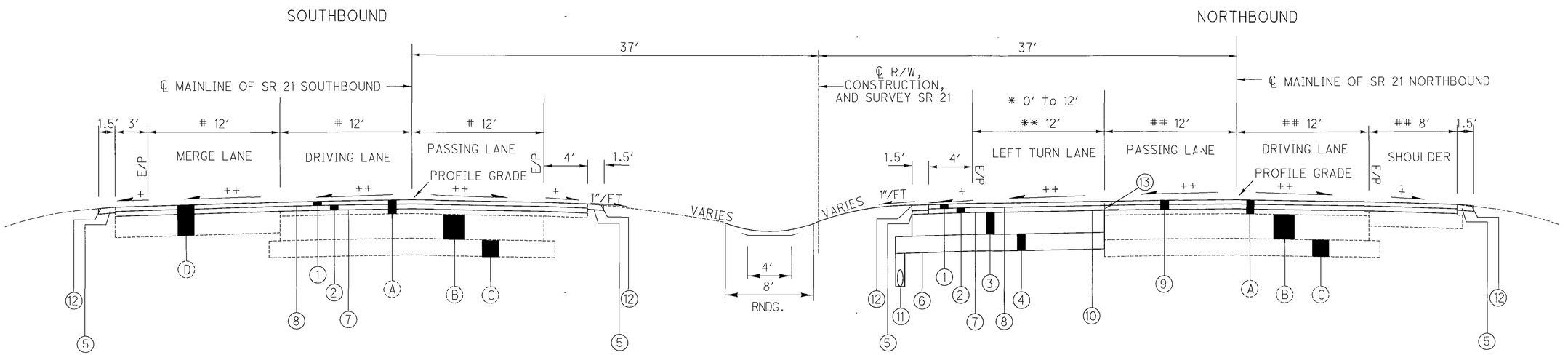
PROJECT SITE PLAN
STA. 300+00 TO STA. 0+71

WAY-21-5.74

DESIGN FILE: I:\projects\81797\roadway\sheets\81797DE002.dgn
WORKSTATION: mschafra DATE: 6/1/2007



5/83	WAY-21-5.74	PROJECT SITE PLAN STA. 0+00 TO STA. 12+51	CALCULATED SJD CHECKED BAD	0 50 25 100 HORIZONTAL SCALE IN FEET



SOUTHBOUND ONLY
\# SR 21 - STA. 303+14 TO STA. 306+59 = 345′

NORTHBOUND ONLY
* SR 21 - STA. 303+14 TO STA. 303+64 = 50′
\## SR 21 - STA. 303+14 TO STA. 306+59 = 345′
** SR 21 - STA. 303+64 TO STA. 306+59 = 295′

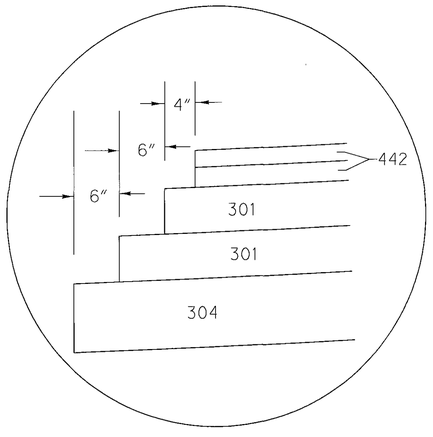
NOTE:
FULL DEPTH REPLACEMENT OF EXISTING SHOULDER FOR 12′ MERGE LANE FROM STA 293+00 TO 303+00

THE FOLLOWING STATION LIMITS WILL BE PLANED AND PAVED WITH AN INTERMEDIATE COURSE AND A SURFACE COURSE.

SOUTHBOUND	NORTHHBOUND
SR 21 - STA. 293+00 TO STA. 9+16	SR 21 - STA. 303+14 TO STA. 4+61

\+ SEE CROSS SECTIONS FOR SHOULDER CROSS SLOPES

\++ SEE SUPERELEVATION TABLES FOR CROSS SLOPES



TYPICAL PAVEMENT EDGE STEP DETAIL

EXISTING LEGEND

- (A) 5″ ASPHALT CONCRETE & MICROSURFACING
- (B) 9″ REINFORCED CONCRETE PAVEMENT
- (C) SUBBASE
- (D) 11″ ASPHALT CONCRETE & MICROSURFACING

PROPOSED LEGEND

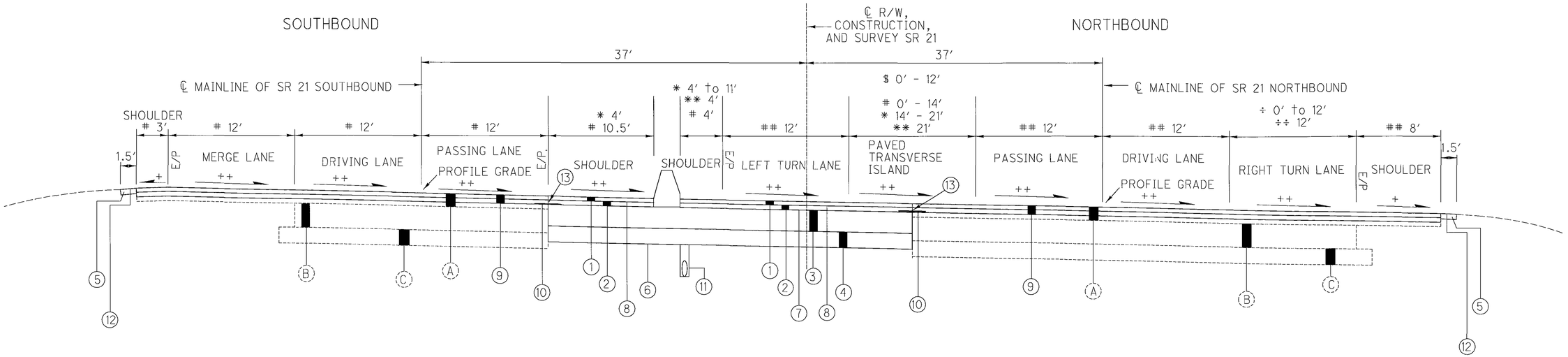
- (1) ITEM 442 - 1½″ ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (446)
- (2) ITEM 442 - 1¾″ ASPHALT CONCRETE INTERMEDIATE COURSE, 19 MM, TYPE A (448)
- (3) ITEM 301 - 8″ ASPHALT CONCRETE BASE, PG64-22, AS PER PLAN
- (4) ITEM 304 - 6″ AGGREGATE BASE
- (5) ITEM 617 - COMPACTED AGGREGATE, TYPE A, AS PER PLAN
- (6) ITEM 204 - SUBGRADE COMPACTION / ITEM 204 - PROOF ROLLING
- (7) ITEM 407 - TACK COAT
- (8) ITEM 407 - TACK COAT FOR INTERMEDIATE COURSE
- (9) ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE (VARIABLE DEPTH)
- (10) ITEM SPECIAL - REINFORCED MESH FOR TRANSVERSE AND/OR LONGITUDINAL JOINTS AND CRACKS (2.5 FT MESH CENTERED OVER WIDENING JOINT)
- (11) ITEM 605 - 4″ UNCLASSIFIED PIPE UNDERDRAIN WITH FABRIC WRAP
- (12) ITEM 408 - PRIME COAT
- (13) ITEM 252 - FULL DEPTH PAVEMENT SAWING (ALONG THE CONCRETE BASE EDGE)

CALCULATED MJS
CHECKED BAD

TYPICAL SECTIONS

WAY-21-5.74

DESIGN FILE: I:\projects\81797\roadway\sheets\81797GY001.dgn
WORKSTATION:mschafra DATE:6/1/2007



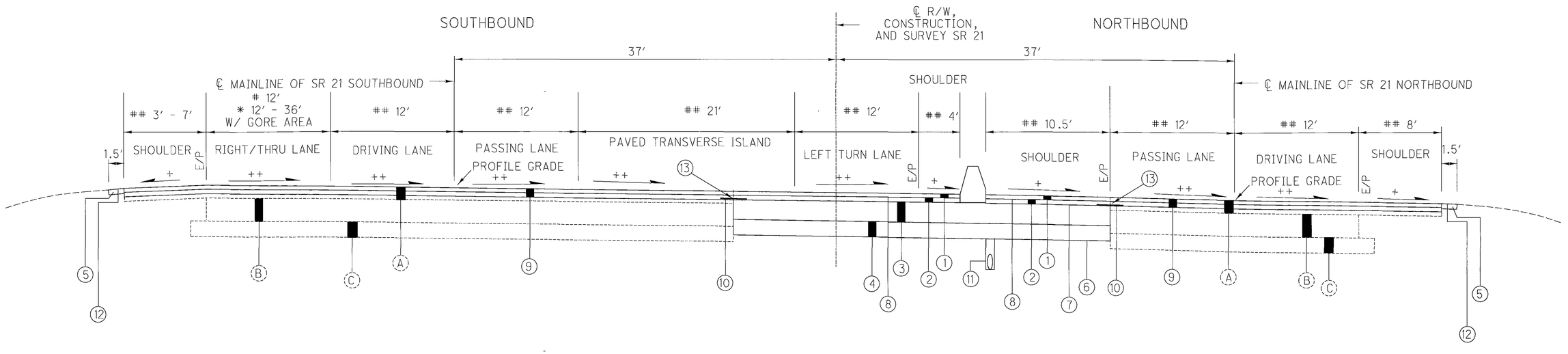
SOUTHBOUND ONLY
* SR 21 - STA. 306+59 TO STA. 307+71 = 112′ (NO CONCRETE BARRIER)
# SR 21 - STA. 307+71 TO STA. 310+80 = 309′

NOTE:

+ SEE CROSS SECTIONS FOR SHOULDER CROSS SLOPES

++ SEE SUPER ELEVATION TABLES FOR CROSS SLOPES

NORTHBOUND ONLY
SR 21 - STA. 306+59 TO STA. 307+71 = 112′ (NO CONCRETE BARRIER)
SR 21 - STA. 306+59 TO STA. 310+80 = 421′ (NO CONCRETE BARRIER FROM STA. 306+59 TO 307+71)
* SR 21 - STA. 307+71 TO STA. 308+27 = 56′
÷ SR 21 - STA. 307+52 TO STA. 309+80 = 228′
** SR 21 - STA. 308+27 TO STA. 310+80 = 253′
÷÷ SR 21 - STA. 310+25 TO STA. 310+80 = 55′
$ SR 21 - STA. 307+79 TO STA. 310+80 = 301′



SOUTHBOUND ONLY
SR 21 - STA. 1+00 TO STA. 1+36 = 36′
SR 21 - STA. 1+00 TO STA. 3+52 = 252′
* SR 21 - STA. 1+36 TO STA. 3+52 = 216′

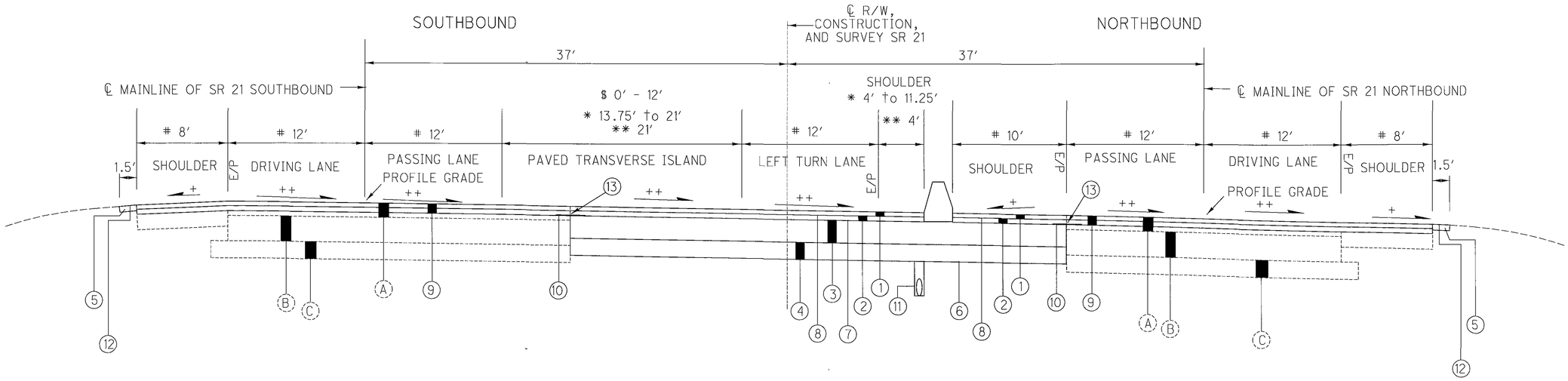
NORTHBOUND ONLY
SR 21 - STA. 1+00 TO STA. 3+52 = 252′

CALCULATED MJS
CHECKED BAD

TYPICAL SECTIONS

WAY-21-5.74

DESIGN FILE: I:\projects\81797\roadway\sheets\81797GY002.dgn
WORKSTATION: mschafra DATE: 6/1/2007



SOUTHBOUND ONLY
** SR 21 - STA. 3+52 TO STA. 4+03 = 51′
# SR 21 - STA. 3+52 TO STA. 4+61 = 109′
* SR 21 - STA. 4+03 TO STA. 4+61 = 58′
$ SR 21 - STA. 3+52 TO STA. 4+03 = 109′

NORTHBOUND ONLY
SR 21 - STA. 3+52 TO STA. 4+61 = 109′

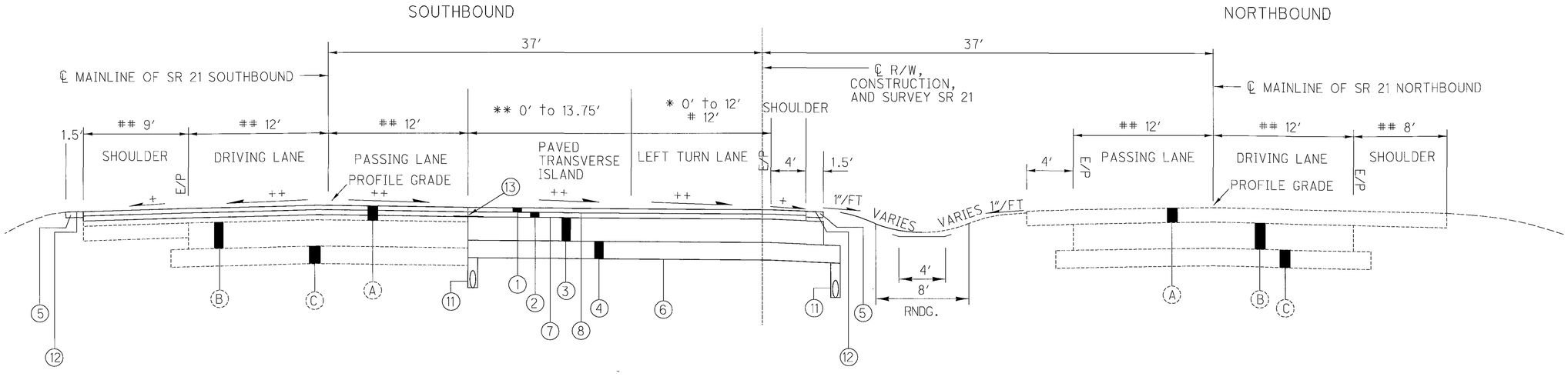
NOTE:

THE FOLLOWING STATION LIMITS WILL BE PAVED WITH AN INTERMEDIATE COURSE AND A SURFACE COURSE.

SOUTHBOUND	NORTHHBOUND
SR 21 - STA. 293+00 TO STA. 9+16	SR 21 - STA. 303+14 TO STA. 4+61

+ SEE CROSS SECTIONS FOR SHOULDER CROSS SLOPES

++ SEE SUPERELEVATION TABLES FOR CROSS SLOPES



SOUTHBOUND ONLY
** SR 21 - STA. 4+61 TO STA. 5+71 = 110′
# SR 21 - STA. 4+61 TO STA. 8+66 = 405′
SR 21 - STA. 4+61 TO STA. 9+16 = 455′
* SR 21 - STA. 8+66 TO STA. 9+16 = 50′

NORTHBOUND ONLY
SR 21 - STA. 4+61 TO STA. 5+71 = 110′

CALCULATED MJS
CHECKED BAD

TYPICAL SECTIONS

WAY-21-5.74

DESIGN FILE: I: \projects\81797\roadway\sheets\81797GY003.dgn
WORKSTATION:mschafra DATE:6/1/2007

GENERAL

UTILITIES

LISTED BELOW ARE ALL UTILITIES LOCATED WITHIN THE PROJECT CONSTRUCTION LIMITS TOGETHER WITH THEIR RESPECTIVE OWNERS.

THE LOCATION OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE AS OBTAINED FROM THE OWNERS AS REQUIRED BY SECTION 153.64 O.R.C.

City of Barberton
576 W.Park Ave.
Barberton, OH 44203
330-848-6713

Dominion East Ohio
7015 Freedom Ave. N.W.
North Canton, Ohio 44720
330-266-2136

Ohio Edison Company
1910 West Market St., Bldg #1
Akron, Ohio 44313
330-384-4743

Time Warner Cable
1575 Lexington Avenue
Mansfield, Ohio 44901
419-756-6091, ext 7322

Doylestown Telephone Co.
28 East Marion Street
Doylestown, Ohio 44230
330-658-6666

THE AFOREMENTIONED UTILITY COMPANIES AND AGENCIES HAVE VARIOUS FACILITIES IN THE AREA THAT WILL REMAIN IN PLACE DURING CONSTRUCTION.

ELEVATION DATUM

ALL ELEVATIONS ARE BASED ON U.S.G.S. DATUM.

PROGRESSION OF WORK

WIDENING SHALL BE DONE PRIOR TO RESURFACING. GUARDRAIL WORK SHALL BE DONE AFTER WIDENING, RESURFACING, AND BERM WORK SO AS TO ESTABLISH PROPER GRADES FROM WHICH TO CONSTRUCT THE RAIL.

ROUNDING

FOUR FOOT ROUNDING AT SLOPE BREAKPOINTS SHALL APPLY TO ALL CROSS-SECTIONS EVEN THOUGH OTHERWISE SHOWN.

ROUTINE MAINTENANCE

BETWEEN THE TIME THAT BIDS ARE TAKEN AND THE START OF CONSTRUCTION, THE MAINTAINING AGENCY MAY ENTER UPON THE PROJECT AND PERFORM ROUTINE MAINTENANCE SUCH AS CRACK SEALING, PATCHING, AND BERM AND SHOULDER REPAIR. THE EFFECTS, IF ANY, OF THE PERFORMANCE OF ROUTINE MAINTENANCE SHALL BE CONSIDERED AS INHERENT IN WORK OF THE CHARACTER PROVIDED FOR IN THE PLAN AND THE RESULTING CONDITIONS SHALL NOT BE CONSIDERED AS DIFFERING MATERIALLY FROM THOSE EXISTING AT THE TIME BIDS WERE TAKEN.

WORK LIMITS

THE WORK LIMITS SHOWN ON THESE PLANS ARE FOR PHYSICAL CONSTRUCTION ONLY. THE INSTALLATION AND OPERATION OF ALL TEMPORARY TRAFFIC CONTROL AND TEMPORARY TRAFFIC CONTROL DEVICES REQUIRED BY THESE PLANS SHALL BE PROVIDED BY THE CONTRACTOR WHETHER INSIDE OR OUTSIDE THESE WORK LIMITS

CONVERSION OF METRIC STANDARD DRAWINGS

THE METRIC STANDARD DRAWINGS REFERENCED IN THIS PLAN SHALL BE CONVERTED TO ENGLISH UNITS USING THE SI (METRIC) TO ENGLISH CONVERSIONS FACTORS PROVIDED IN SECTION 109.02 OF THE 2005 CMS. CONVERSIONS SHALL BE APPROXIMATELY PRECISE AND SHALL REFLECT STANDARD INDUSTRY ENGLISH VALUES WHERE SUITABLE.

ROADWAY

ITEM 204 - PROOF ROLLING

AN ESTIMATED QUANTITY FOR THIS ITEM HAS BEEN PROVIDED IN THE PLANS FOR USE AS DIRECTED BY THE ENGINEER.

SEE CALCULATIONS SHEET FOR QUANTITIES

ITEM 201 - TREE REMOVAL RESTRICTIONS

THIS PROJECT IS WITHIN THE KNOWN SUMMER BREEDING RANGE OF THE FEDERAL ENDANGERED INDIANA BROWN BAT AND MAY IMPACT THAT SPECIES HABITAT. THE SUMMER ROOSTING AND BROOD REARING HABITAT OF THIS SPECIES IS IN LIVING OR STANDING DEAD TREES OR SNAGS WITH EXFOLIATING, PEELING, OR LOOSE BARK, SPLIT TRUNKS AND/OR BRANCHES, OR CAVITIES. ANY UNAVOIDABLE CUTTING OF SUCH TREES SHALL BE PERFORMED ONLY BEFORE APRIL 15 OR AFTER SEPTEMBER 15 WHEN THIS SPECIES WOULD NOT BE USING SUCH HABITAT.

ITEM 202 - REMOVAL MISC.: CONCRETE CATCH BASIN APRON

CONCRETE CATCH BASIN APRON SHALL BE REMOVED AT THE LOCATION SHOWN IN THE PLAN.

DRAINAGE

CROSSINGS AND CONNECTIONS TO EXISTING PIPES AND UTILITIES

WHERE PLANS PROVIDE FOR A PROPOSED CONDUIT TO BE CONNECTED TO, OR CROSS OVER OR UNDER AN EXISTING SEWER OR UNDERGROUND UTILITY, THE CONTRACTOR SHALL LOCATE THE EXISTING PIPES OR UTILITIES BOTH AS TO LINE AND GRADE BEFORE STARTING TO LAY THE PROPOSED CONDUIT.

IF IT IS DETERMINED THAT THE ELEVATION OF THE EXISTING CONDUIT, OR EXISTING APPURTENANCE TO BE CONNECTED, DIFFERS FROM THE PLAN ELEVATION OR RESULTS IN A CHANGE IN THE PLAN CONDUIT SLOPE, THE ENGINEER SHALL BE NOTIFIED BEFORE STARTING CONSTRUCTION OF ANY PORTION OF THE PROPOSED CONDUIT WHICH WILL BE AFFECTED BY THE VARIANCE IN THE EXISTING ELEVATIONS.

IF IT IS DETERMINED THAT THE PROPOSED CONDUIT WILL INTERSECT AN EXISTING SEWER OR UNDERGROUND UTILITY IF CONSTRUCTED AS SHOWN ON THE PLAN, THE ENGINEER SHALL BE NOTIFIED BEFORE STARTING CONSTRUCTION OF ANY PORTION OF THE PROPOSED CONDUIT WHICH WOULD BE AFFECTED BY THE INTERFERENCE WITH AN EXISTING FACILITY.

PAYMENT FOR ALL THE OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE PERTINENT 603 CONDUIT ITEM.

REVIEW OF DRAINAGE FACILITIES

BEFORE ANY WORK IS STARTED ON THE PROJECT AND AGAIN BEFORE FINAL ACCEPTANCE BY THE STATE, REPRESENTATIVES OF THE STATE AND THE CONTRACTOR, ALONG WITH LOCAL REPRESENTATIVES, SHALL MAKE AN INSPECTION OF ALL EXISTING SEWERS WHICH ARE TO REMAIN IN SERVICE AND WHICH MAY BE AFFECTED BY THE WORK. THE CONDITION OF THE EXISTING CONDUITS AND THEIR APPURTENANCE SHALL BE DETERMINED FROM FIELD OBSERVATIONS. RECORDS OF THE INSPECTION SHALL BE KEPT IN WRITING BY THE STATE.

ALL NEW CONDUITS, INLETS, CATCH BASINS, AND MANHOLES CONSTRUCTED AS A PART OF THE PROJECT SHALL BE FREE OF ALL FOREIGN MATTER AND IN A CLEAN CONDITION BEFORE THE PROJECT WILL BE ACCEPTED BY THE STATE.

ALL EXISTING SEWERS INSPECTED INITIALLY BY THE ABOVE MENTIONED PARTIES SHALL BE MAINTAINED AND LEFT IN A CONDITION REASONABLY COMPARABLE TO THAT DETERMINED BY THE ORIGINAL INSPECTION. ANY CHANGE IN THE CONDITION RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE CORRECTED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER.

PAYMENT FOR ALL OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE PERTINENT 603 CONDUIT ITEMS.

PAVEMENT

ITEM 255, FULL DEPTH PAVEMENT REMOVAL AND RIGID REPLACEMENT, WITH MATURITY, AS PER PLAN

THIS ITEM OF WORK SHALL CONSIST OF THE REMOVAL OF THE EXISTING CONCRETE PAVEMENT AND OVERLYING ASPHALT CONCRETE IN AREAS OF EXISTING PAVEMENT JOINT FAILURE. REFER TO PROPOSAL NOTE 463 FOR SPECIFICATIONS FOR JOINT REPAIR USING RAPID STRENGTH CONCRETE WITH MATURITY TESTING. THE CONTRACTOR MAY PERFORM THESE REPAIRS BEFORE OR AFTER THE PAVEMENT PLANING OPERATION. THE REPLACEMENT ASPHALT CONCRETE ABOVE THE CONCRETE REPAIR SHALL BE INCLUDED IN THE COST OF THIS PAY ITEM.
ALL THE ABOVE WORK SHALL INCLUDE LABOR, MATERIALS, AND EQUIPMENT TO PERFORM THIS OPERATION.
THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN SETUP TO BE USED AS DIRECTED BY THE ENGINEER:

ITEM 255 FULL DEPTH PAVEMENT REMOVAL AND RIGID REPLACEMENT, WITH MATURITY, AS PER PLAN ..... 392 S.Y

ITEM 255 FULL DEPTH PAVEMENT SAWING ..... 1512 FT.

ITEM 301 ASPHALT CONCRETE BASE, PG64-22, AS PER PLAN

ON THIS PROJECT ITEM 301 COARSE AGGREGATE SHALL HAVE A TWO FACE CRUSH COUNT OF 75% PER ASTM D 5821. MAXIMUM RECLAIMED ASPHALT CONCRETE PAVEMENT WILL BE 20%. ENSURE THAT A MINIMUM OF 50% OF THE VIRGIN FINE AGGREGATE USED IN THE ITEM 301 IS SAND MANUFACTURED FROM STONE OR AIR COOLED SLAG.

ALL COSTS TO BE INCLUDED IN ITEM 301 ASPHALT CONCRETE BASE, PG64-22, AS PER PLAN.

ITEM SPECIAL - REINFORCED MESH FOR TRANSVERSE AND/OR LONGITUDINAL JOINTS AND CRACKS

THIS WORK CONSISTS OF PLACEMENT OF A SELF ADHESIVE GLASS FIBER MESH OVER WIDENING JOINTS DESIGNATED IN THE PLANS PRIOR TO PLACEMENT OF THE INTERMEDIATE AND SURFACE COURSES.

FURNISH GLASGRID KNITTED GLASS FIBER STRAND MESH MEETING THE FOLLOWING PROPERTIES:

PROPERTIES	GLASGRID NO. 0230
MATERIAL WIDTH	2.5 FT.
MATERIAL - SELF ADHESIVE FIBERGLASS STRAND COATED WITH ELASTROMERIC POLYMER PER ASTM 4963	20% MIN DRY PICKUP
TENSILE STRENGTH PER G.R.I. GG 1-87 WIDTH	1120 LBS/IN
TENSILE STRENGTH PER G.R.I. GG 1-87 LENGTH	560 LBS/IN
ELONGATION AT BREAK (MIN)	< 5%
MELTING POINT (MIN) ASTM D276	> 425° F
MASS/UNIT AREA (MIN) ASTM D5261-92	16 OZ/SQ. YD.
GRID PATTERN	0.5 IN x 0.5 IN

BEFORE INSTALLATION, SUBMIT A LETTER TO THE PROJECT WITH A STATEMENT CERTIFYING MATERIAL RECEIVED MEETS THE ABOVE PROPERTIES. SUBMIT TO THE PROJECT ACTUAL DATED (SALES FLYER DATA NOT ACCEPTABLE) TEST DATA WITH THE CERTIFICATION LETTER.

PERFORM ALL REQUIRED REPAIRS PRIOR TO PLACING MESH.

ENSURE ALL AREAS WHERE MESH IS TO BE PLACED ARE FREE OF ALL DIRT AND OTHER LOOSE MATERIALS BY SWEEPING OR OTHER APPROVED METHOD. PLACE THE MESH ON A PAVEMENT SURFACE THAT IS BETWEEN 40°F AND 140°F. ALLOW FOR THE TACK COAT TO CURE BEFORE PLACING MESH.

PLACE MESH UNDER TENSION TO PREVENT RIPPLING. REMOVE RIPPLES BY PULLING, OR IF NECESSARY (IN CURVES FOR EX.) BY CUTTING AND FLATTENING THE MESH. OVERLAP TRANSVERSE JOINTS OF THE MESH 3 TO 6 INCHES. OVERLAP LONGITUDINAL JOINTS OF THE MESH BY 1 INCH MINIMUM. ROLL THE MESH SURFACE 2 PASSES WITH A RUBBER COATED DRUM ROLLER, RUBBER TIRED ROLLER OR OTHER METHOD ACCEPTABLE TO THE MANUFACTURER. CLEAN RUBBER TIRE ROLLER IF BUILDUP ON THE RUBBER SURFACE INTERFERES WITH MESH PLACEMENT. DO NOT USE A STEEL DRUM ROLLER.

PLACED MESH WILL HANDLE SPEED CONTROLLED EMERGENCY OR CONSTRUCTION TRAFFIC BUT DAMAGED SECTIONS MUST BE REMOVED AND/OR REPAIRED. DO NOT ALLOW MUD OR OTHER MATERIAL TO COLLECT ON THE MESH PRIOR TO ASPHALT CONCRETE PLACEMENT. COVER MESH WITH ASPHALT CONCRETE THE SAME DAY UNLESS WEATHER BECOMES UNSUITABLE.

THE DEPARTMENT WILL MEASURE MESH PLACEMENT BY THE SQ YD OF JOINT OR CRACK COVERED. MESH OVERLAP WILL NOT BE MEASURED.

THE DEPARTMENT WILL PAY FOR ACCEPTED QUANTITIES, COMPLETED IN PLACE, AT THE CONTRACT PRICES, AS DESCRIBED ABOVE.

ITEM 252 FULL DEPTH PAVEMENT SAWING

THE INTENT OF THE PAVEMENT SAWING IS TO SAW ALONG THE EDGE OF THE EXISTING REINFORCED CONCRETE PAVEMENT. THE ESTIMATED LOCATIONS OF THE SAWING ARE SHOWN ON THE PLANS. THESE LOCATIONS WHERE BASED ON PREVIOUS CONSTRUCTION PLANS AND MAY NEED TO BE FIELD ADJUSTED. THE CONTRACTOR SHALL NOTE THE CHANGES TO THE PROJECT ENGINEER FOR DOCUMENTATION.

THE DEPARTEMENT WILL PAY FOR ACCEPTED QUANTITIES, COMPLETED AT THE CONTRACT PRICE, AS DESCRIBED ABOVE.

CALCULATED MJS
CHECKED BAD

GENERAL NOTES

WAY-21-5.74

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WORKSTATION: mschafra DATE: 6/1/2007

PAVEMENT (CONT)

ITEM 407, TACK COAT
ITEM 407, TACK COAT FOR INTERMEDIATE COURSE

AS PER 407.06 THE APPLICATION RATES SHALL BE 0.08 GAL. PER SQ. YD. PRIOR TO THE LEVELING COURSE AND SHALL BE 0.04 GAL PER SQ. YD. PRIOR TO THE SURFACE COURSE FOR ESTIMATING PURPOSES ONLY. THE RATE OF APPLICATION SHALL BE SUBJECT TO ADJUSTMENT AS DIRECTED BY THE ENGINEER. A COMPLETE PAVEMENT SURFACE COVERAGE SHALL BE REQUIRED. AREAS OF TACK STRIPPED BY CONSTRUCTION EQUIPMENT OR TRAFFIC SHALL BE RE-COATED PRIOR TO PLACING ASPHALT CONCRETE. ALL COST AS DESCRIBED ABOVE SHALL BE INCLUDED IN THE UNIT PRICE BID PER GALLON FOR ITEM 407, TACK COAT AND ITEM 407 TACK COAT FOR INTERMEDIATE COURSE.

ITEM 442, ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (446)

ALL LONGITUDINAL PAVEMENT JOINTS SHALL BE CLOSED BEFORE THE END OF EACH WORK DAY. BEFORE THE JOINT IS EXPOSED TO TRAFFIC, THE CONTRACTOR SHALL ERECT W8-11-36 (UNEVEN LANES) SIGNS. THESE SIGNS SHALL ONLY REMAIN WHILE THE CONDITION EXISTS. PLACEMENT OF THESE SIGNS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 614 MAINTAINING TRAFFIC.

IN ADDITION TO SECTION 401.14 AND STANDARD DRAWING BP-3.1, TRANSVERSE, FEATHERED OR BUTT JOINTS SHALL BE SEALED WITH A 6 INCH WIDE BAND OF ASPHALT CEMENT ACROSS THE TOP SURFACE. THE LONGITUDINAL JOINT SHALL BE SEALED WITH ASPHALT CEMENT ON THE VERTICALFACE AND 6 INCHES WIDE FROM THE VERTICAL FACE ALONG THE INTERMEDIATE COURSE SURFACE BEFORE PAVING. THE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THIS ITEM.

ALL OPEN TRANSVERSE JOINTS SHALL BE TAPERED TO MEET EXISTING PAVEMENT BEFORE INTRODUCING TRAFFIC. A "BUMP" SIGN (W-8-1-36) SHALL BE ERECTED ON EACH SIDE OF TRANSVERSE JOINTS LEFT OPEN OVER NIGHT, INCLUDING A SPEED ADVISORY SIGN, AS DIRECTED BY THE ENGINEER. THESE SIGNS SHALL BE REMOVED IMMEDIATELY AFTER JOINT HAS BEEN CLOSED. PLACEMENT OF SIGNS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 614 MAINTAINING TRAFFIC.

CARE SHALL BE TAKEN TO MATCH EXISTING PAVEMENT ELEVATIONS AT EXISTING PAVED BERMS, DRIVES, ETC.

PAVEMENT RESTORATION FOR PIPE INSTALLATIONS

THE FOLLOWING QUANTITY HAS BEEN PROVIDED FOR PAVEMENT RESTORATION FOLLOWING INSTALLATION OF PIPES UNDER ITEM 603.

ITEM 301 ASPHALT CONCRETE BASE, PG64-22, AS PER PLAN 17 CU. YDS.

THE ABOVE QUANTITY IS BASED ON A 301 THICKNESS OF 14 INCHES AND A PAVEMENT RESTORATION WIDTH THAT INCLUDES THE TRENCH WIDTH PLUS TWO FEET ON EACH SIDE OF THE TRENCH. THE TRENCH WIDTH WAS ASSUMED TO EQUAL THE SPAN TIMES 1.25 PLUS ONE FOOT.

PROVIDE ANY MATERIALS USED OUTSIDE THE LIMITS STATED ABOVE AT NO ADDITIONAL COST.

ITEM 617, COMPACTED AGGREGATE, AS PER PLAN

THIS ITEM OF WORK SHALL CONFORM TO ITEM 617 IN THE CONSTRUCTION AND MATERIALS SPECIFICATIONS BOOK WITH EXCEPTION OF 617.02 (MATERIALS).

THE MATERIAL ON THIS PROJECT SHALL BE THE ASPHALT CONCRETE GRINDINGS RESULTING FROM ITEM 254. THE GRINDINGS USED FOR THIS WORK ARE TO BE PLACED AND COMPACTED AS DESCRIBED IN 617.05 WITH SPECIAL CARE TO CREATE PROPER COMPACTION. 100% OF THIS MATERIAL SHALL PASS A 1.5 INCH SIEVE AS JUDGED BY THE ENGINEER. THE CONTRACTOR SHALL TAKE SPECIAL CARE TO MEET THE TYPICAL SECTIONS SHOWN IN THE PLANS AND AS DIRECTED BY THE ENGINEER.

PAYMENT FOR ALL THE ABOVE SHALL BE INCLUDED IN THE UNIT PRICE BID PER CU. YD. OF ITEM 617 COMPACTED AGGREGATE, AS PER PLAN.

TRAFFIC CONTROL

ITEM 621 RPM, AS PER PLAN

MATERIALS SUPPLIED BY THE DEPARTMENT
ALL MATERIALS ARE TO BE CONTRACTOR FURNISHED, EXCEPT THAT THE DEPARTMENT SHALL SUPPLY RPM MATERIALS (CASTINGS AND REFLECTORS) IN THE QUANTITIES SHOWN HEREIN TO THE CONTRACTOR. THE ABOVE WORK INCLUDING ALL LABOR, MATERIALS, AND EQUIPMENT TO INSTALL THE DEPARTMENT SUPPLIED RPM MATERIALS SHALL BE PAID FOR UNDER ITEM 621 RPM, AS PER PLAN.

AT THE PRE-CONSTRUCTION CONFERENCE AN AUTHORIZATION FOR PICK UP FORM WILL BE FURNISHED BY THE DISTRICT CONSTRUCTION ADMINISTRATOR. THE CONTRACTOR SHALL PICK UP DEPARTMENT SUPPLIED RPM MATERIALS AT THE DISTRICT THREE HEADQUARTERS IN ASHLAND, OHIO FOR TRANSPORT TO THE WORK SITE OR TO THE CONTRACTOR'S STORAGE FACILITY. THE RECYCLED RAISED PAVEMENT MARKER (RPM) AUTHORIZATION FORM IS TO BE SIGNED BY THE DISTRICT CONSTRUCTION ENGINEER PRIOR TO PICK UP OF THE RPMS. THE CONTRACTOR SHALL NOTIFY THE DISTRICT AND / OR THE PARTIES LISTED ON THE AUTHORIZATION FORM IN WRITING AT LEAST FIVE (5) CALENDAR DAYS PRIOR TO PICK UP OF THE DEPARTMENT SUPPLIED MATERIALS. THE CONTRACTOR SHALL STORE THE RPMS WITHOUT DAMAGE OR CONTAMINATION WITH FOREIGN MATTER. A DEDUCTION IN THE AMOUNT OF THE ACTUAL COST TO THE DEPARTMENT SHALL BE MADE FOR MATERIALS DAMAGED BY THE CONTRACTOR OR FOR CASTINGS RECEIVED BY THE CONTRACTOR WHICH WERE NOT INSTALLED AND WERE NOT RETURNED TO THE DEPARTMENT.

RETURN OF NON-PERFORMED RAISED PAVEMENT MARKER
MATERIALS SUPPLIED BY THE DEPARTMENT.

RAISED PAVEMENT MARKER MATERIALS SUPPLIED BY THE DEPARTMENT, THAT ARE NON-PERFORMED SHALL BE CAREFULLY REPACKED OR PACKED IN THE BOXES IN THE SAME STYLE AND QUANTITY AS ORIGINALLY RECEIVED FROM THE DEPARTMENT. CASTING STYLES SHALL NOT BE MIXED WITHIN ANY ONE CONTAINER. THE CONTRACTOR SHALL CLEARLY MARK ON THE OUTSIDE OF EACH CONTAINER, THE COLOR OF THE PRISMATIC RETRO-REFLECTOR, AND THE STYLE OF CASTING. BOXES SHALL BE PLACED ON SKIDS OR PALLETS IN THE SAME STYLE (LOW PROFILE OR CONVENTIONAL, REFLECTORISED OR NON REFLECTORISED) AND NO MORE THAN 420 RPMS (OR 21 BOXES) ON ONE SKID.

ONLY USE THE BOXES SUPPLIED BY THE RAISED PAVEMENT MARKER RECYCLER. BOXES MUST BE MARKED WITH THE RECYCLER'S PART OR CATALOG NUMBER AND THE PROJECT NUMBER. BOXES NOT MARKED WITH THE PROPER RECYCLER'S CATALOG OR PART NUMBERS, AND THE DEPARTMENT'S PROJECT NUMBER WILL NOT BE ACCEPTED.

NON PERFORMED MATERIALS WILL BE RETURNED TO THE LOCATION AS SPECIFIED BY THE DISTRICT CONSTRUCTION ENGINEER WITHIN 30 DAYS OF THE COMPLETION OF THE PROJECT.

THE ABOVE WORK INCLUDING ALL LABOR, EQUIPMENT AND MATERIAL NEEDED TO PERFORM THE WORK, SHALL BE CONSIDERED INCIDENTAL TO THE RESPECTIVE PAY ITEM.

IF THE DEPARTMENT HAS TO REPACKAGE THE RPMS CORRECTLY, THE CONTRACTOR WILL BE ASSESSED THE ACTUAL COST FOR REPACKAGING THE MATERIALS BY THE DEPARTMENT'S FORCES.

LOADING OF MATERIALS SUPPLIED BY THE DEPARTMENT

TRUCKS SHALL NOT HAVE ANY OBSTRUCTIONS OR PROTRUSIONS THAT PREVENT THE LOADING BY A STANDARD FORKLIFT OR LIFT TRUCK. SEMI TRUCKS OR 20 FOOT COMMERCIAL TRUCKS ARE THE MOST APPROPRIATE TRUCKS FOR LOADS IN EXCESS OF 4 PALLETS (ONE PALLET = 21 BOXES = 2100 LBS).

STAKE BODY TRUCKS ARE APPROPRIATE TO LOAD LESS LOAD AND THE LOAD CAN BE SAFELY SECURED FOR TRANSPORT BY CHAINING OR STRAPPING DOWN AS NEEDED.

PICKUP TRUCKS ARE APPROPRIATE FOR LOADS OF APPROXIMATELY ONE PALLET, PROVIDED THE PICKUP TRUCK IS RATED FOR THE LOAD AND THE LOAD CAN BE SAFELY SECURED FOR TRANSPORT.

DUMP TRUCKS, TILT BED TRUCKS, AND NON COMMERCIAL MOVING VANS WILL NOT BE LOADED.

THE WAREHOUSE SUPERVISOR WILL REFUSE TO LOAD ANY TRUCK THAT IS UNSAFE TO LOAD OR UNSUITABLE FOR THE LOAD BEING PLACED ON THE TRUCK.

GUARDRAIL

LOCATIONS OF GUARDRAIL

THE GUARDRAIL PROTECTION PROVIDED IN THIS PLAN SHALL BE LOCATED IN THE FIELD TO ASSURE THAT THE INSTALLATION WILL AFFORD THE MAXIMUM PROTECTION FOR TRAFFIC. THIS LOCATION SHALL BE POSITIONED AS FAR AS POSSIBLE FROM THE EDGE OF PAVEMENT WHILE MAINTAINING PROPER GRADE IN FRONT OF GUARDRAIL AS PER STANDARD DRAWINGS AND PLAN DETAILS.

GUARDRAIL REPLACEMENT

NO HAZARD SHALL BE LEFT UNPROTECTED EXCEPT FOR THE ACTUAL TIME NECESSARY TO REMOVE GUARDRAIL, INSTALL EMBANKMENT, GRADE AND REINSTALL GUARDRAIL IN A CONTINUOUS OPERATION. THE REMOVAL OF ALL GUARDRAIL SHALL AT ALL TIMES BE AS DIRECTED BY THE ENGINEER. NO GUARDRAIL SHALL BE REMOVED UNTIL THE REPLACEMENT MATERIAL IS ON SITE, READY FOR INSTALLATION. FAILURE TO COMPLY WITH THIS REQUIREMENT SHALL BE DEEMED SUFFICIENT CAUSE TO ORDER WORK SUSPENDED ON THIS PROJECT UNTIL SUCH TIME THAT THE ENGINEER IS ASSURED OF SAID COMPLIANCE.

EROSION CONTROL

ITEM 659 SEEDING AND MULCHING

THE FOLLOWING QUANTITIES ARE PROVIDED TO PROMOTE GROWTH AND CARE OF PERMANENT SEEDED AREAS:

659, COMMERCIAL FERTILIZER	2.10 TON
659, LIME	1.93 ACRES
659, WATER	51 M GAL.
659, REPAIR SEEDING AND MULCHING	468 SQ. YD.
659, INTER SEEDING	468 SQ. YD.
659, SOIL ANALYSIS TEST	4 EACH

SEEDING AND MULCHING SHALL BE APPLIED TO ALL AREAS OF EXPOSED SOIL. QUANTITY CALCULATIONS FOR SEEDING AND MULCHING ARE BASED ON THESE LIMITS. THE ABOVE QUANTITIES ARE CARRIED TO THE GENERAL SUMMARY.

CALCULATED MJS
CHECKED BAD

GENERAL NOTES

WAY-21-5.74

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WORKSTATION: mschafra DATE: 6/1/2007

GUARDRAIL

ITEM 606 - IMPACT ATTENUATOR, TYPE 1-98 (BIDIRECTIONAL)

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING ANY ONE OF THE FOLLOWING IMPACT ATTENUATORS, OR AN APPROVED EQUAL AS LISTED ON ROADWAY ENGINEERING'S WEB PAGE AT WWW.DOT.STATE.OH.US/DRRC/ UNDER ROADSIDE SAFETY DEVICES FOR APPROVED IMPACT ATTENUATORS:

1) THE C-A-T MANUFACTURED BY TRINITY INDUSTRY, 1170 N. STATE STREET, GIRARD, OHIO 44420 (TELEPHONE: 330-545-4373).

THE LENGTH OF THE C-A-T SYSTEM IS CONSIDERED TO BE 31'-3" [9525 mm] LONG. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AS DETAILED ON THE FOLLOWING PRE-APPROVED SHOP DRAWINGS:

DWG. #	DRAWING NAME	DWG./REV. DATE	ODOT APPROVAL DATE
SS245M	CRASH-CUSHION ATTENUATING TERMINAL PLAN, ELEVATION & SECTIONS FOR USE AS A LONGITUDINAL MEDIAN BARRIER TERMINAL OR CRASH CUSHION ATTENUATOR	04/10/97 Rev. 4	03/06/98
SS224M	C-A-T TRANSITION TO MEDIAN BARRIER GUARDRAIL PLAN, ELEVATION & SECTIONS	04/26/96	03/06/98
SS226M	C-A-T TRANSITION TO VERTICAL WALL OR PIER PLAN, ELEVATION & SECTIONS	04/26/96	03/06/98

2) THE BRAKEMASTER MANUFACTURED BY ENERGY ABSORPTION SYSTEMS, INC., ONE EAST WACKER DRIVE, CHICAGO, IL 60601 (TELEPHONE: 312-467-6750). THE LENGTH OF THE BRAKEMASTER SYSTEM IS CONSIDERED TO BE 32'-8" [9957 mm] LONG. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AS DETAILED ON THE FOLLOWING PRE-APPROVED SHOP DRAWINGS:

DWG. #	DRAWING NAME	DWG./REV. DATE	ODOT APPROVAL DATE
92-00-01	BRAKEMASTER GENERAL ASSEMBLY (UNIDIRECTIONAL SYSTEM)	03/06/97 Rev. K	03/06/98
92-00-81	BRAKEMASTER (UNIDIRECTIONAL) WITH FOUNDATION TUBES	02/09/98	03/06/98
92-00-02	BRAKEMASTER GENERAL ASSEMBLY (BIDIRECTIONAL SYSTEM)	03/10/97 Rev. K	03/06/98
92-00-82	BRAKEMASTER (BIDIRECTIONAL) WITH FOUNDATION TUBES	02/09/98	03/06/98
9202024	ANCHOR ASSEMBLY, FOUNDATION TUBE, 6½FT., BRS	06/12/97 Rev. D	03/06/98

3) THE FLEAT-MT MANUFACTURED BY ROAD SYSTEMS, INC. (RSI), 3616 OLD HOWARD COUNTY AIRPORT ROAD, BIG SPRINGS, TX, 79720 (TELEPHONE 915-263-2435) AND AVAILABLE FROM RSI'S LIST OF APPROVED DISTRIBUTORS.

THE LENGTH OF THE FLEAT-MT SYSTEM IS CONSIDERED TO BE 37'-6" [11430 mm] LONG. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATION AS DETAILED ON THE FOLLOWING PRE-APPROVED SHOP DRAWINGS AND THE MANUFACTURERS INSTALLATION MANUAL.

DWG. #	DRAWING NAME	DWG./REV. DATE	ODOT APPROVAL DATE
MEDFLT-W-US	FLARED ENERGY ABSORBING TERMINAL - FLEAT-MT ASSEMBLY FOR WOOD BREAKAWAY POST SYSTEM	04/10/02 Rev. 5	01/06/03
MEDFLT-S-US	FLARED ENERGY ABSORBING TERMINAL - FLEAT-MT ASSEMBLY FOR STEEL BREAKAWAY POST SYSTEM	04/10/02 Rev. 6	01/06/03
MEDFLT-W-M	FLARED ENERGY ABSORBING TERMINAL - FLEAT-MT (Metric) ASSEMBLY FOR WOOD BREAKAWAY POST SYSTEM	04/10/02 Rev. 5	01/06/03
MEDFLT-S-M	FLARED ENERGY ABSORBING TERMINAL - FLEAT-MT (Metric) ASSEMBLY FOR STEEL BREAKAWAY POST SYSTEM	04/10/02 Rev. 6	01/06/03

THE FACE OF THE TYPE 1-98 IMPACT HEAD SHALL BE COVERED WITH A SHEET OF TYPE G REFLECTIVE SHEETING, PER CMS 730.19, APPROXIMATELY 36" X 12" [915 mm W X 305 mm H] (ONE 9" X 18" [225 mm W X 450 mm H FOR EACH FLEAT-MT IMPACT HEAD). PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 606, IMPACT ATTENUATOR, TYPE 1-98 [(UNIDIRECTIONAL OR BIDIRECTIONAL)], EACH, AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT A COMPLETE AND FUNCTIONAL IMPACT ATTENUATOR SYSTEM, INCLUDING ALL RELATED TRANSITIONS, HARDWARE, REFLECTIVE SHEETING AND GRADING, NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.

ITEM 606 - IMPACT ATTENUATOR, TYPE 2-98 (65 MPH, 28" WIDE), (BIDIRECTIONAL)

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING ANY ONE OF THE FOLLOWING IMPACT ATTENUATORS, OR AN APPROVED EQUAL AS LISTED ON ROADWAY ENGINEERING'S WEB PAGE AT WWW.DOT.STATE.OH.US/DRRC/ UNDER ROADSIDE SAFETY DEVICES FOR APPROVED IMPACT ATTENUATORS:

1) A QUADGUARD IMPACT ATTENUATOR MANUFACTURED BY ENERGY ABSORPTION SYSTEMS, INC., 35 EAST WACKER DRIVE, CHICAGO, IL 60601 (TELEPHONE: 312-467-6750) AND DISTRIBUTED BY BALDWIN AND SOURS, INC. (614-851-8800). INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AS DETAILED ON THE FOLLOWING PRE-APPROVED SHOP DRAWINGS:

DWG. #	DRAWING NAME	DWG./REV. DATE	ODOT APPROVAL DATE
QSTSCVR-U	QUADGUARD SYSTEM WITH TENSION STRUT BACKUP	07/10/96 Rev. A	03/06/98
QSCBCVR-U	QUADGUARD SYSTEM WITH CONCRETE BACKUP	04/28/97 Rev. E	03/06/98
QFTSCVR-U	QUADGUARD SYSTEM W/ 69" & 90" TENSION STRUT BACKUPS	09/05/97 Rev. C	03/06/98
QFCBCVR-U	QUADGUARD SYSTEM W/ 69" & 90" CONCRETE BACKUPS	09/04/97 Rev. D	03/06/98
35-40-20	DEFLECTOR ASSEMBLY, CONCRETE BACKUP RETROFIT, QG	11/14/97 Rev. B	07/31/98
35-40-03	QUADGUARD SYSTEM BACKUP ASSEMBLY, TS, QG	03/19/99 Rev. F	08/27/99
35-40-08 2 SHEETS	QUADGUARD SYSTEM CONCRETE BACKUP, QG ON GRADE & ON EXISTING CONCRETE STRUCTURE	10/14/97 Rev. F 10/14/97 Rev. F	08/27/99 08/27/99
35-40-21 2 SHEETS	TRANSITION ASSEMBLY QUAD-BEAM TO W-BEAM	11/06/97 Rev. B 07/14/97 Rev. A	08/27/99 08/27/99
35-40-22 2 SHEETS	TRANSITION ASSEMBLY QUAD-BEAM TO THRIE-BEAM	07/15/97 Rev. A 07/11/97 Rev. A	08/27/99 08/27/99
35-40-15	QUADGUARD SYSTEM END SHOE ASSEMBLY, QG	09/11/98 Rev. F	08/27/99
3540211 2 SHEETS	QG TRANSITION ASSEMBLY QUAD-BEAM TO W-BEAM-WIDE	08/29/97 Rev. A 08/29/97 Rev. A	08/27/99 08/27/99
3540221 2 SHEETS	QG TRANSITION ASSEMBLY QUAD-BEAM TO THRIE-BEAM-WIDE	08/29/97 Rev. A 08/29/97 Rev. A	08/27/99 08/27/99
3540498	QG SYSTEM NOSE ASSEMBLY, QG, 24, 30, 36, WITH BELTING	12/30/98	08/27/99
3540150	QUADGUARD TRANSITION TO VERTICAL CONCRETE BARRIER	09/96	08/27/99

2) THE BARRIER SYSTEMS, INC. TAU-II IMPACT ATTENUATOR DISTRIBUTED BY ROAD SYSTEMS, INC., SALES SUPPORT, 2183 ELM TRACE, AUSTINTOWN, OH 44515 TELEPHONE: (330) 799-9291. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AS DETAILED ON THE FOLLOWING PRE-APPROVED SHOP DRAWINGS:

DWG. #	DRAWING NAME	DWG./REV. DATE	ODOT APPROVAL DATE
SYSTEM CAPACITY	UNIVERSAL TAU-II CRASH CUSHION SYSTEM CONFIGURATION CHART	10/6/04 V5	10/16/04
A040416	UNIVERSAL TAU-II PARTS LIST	04/22/04	10/16/04
A040420	UNIVERSAL TAU-II FOUNDATION, FLUSH MOUNT BACKSTOP - PCC PAD	04/28/04	10/16/04
A040105	UNIVERSAL TAU-II FOUNDATION, PCB BACKSTOP (Referenced on A040420)	01/07/04	10/16/04
A040108	UNIVERSAL TAU-II FOUNDATION, WIDE FLANGE BACKSTOP	01/07/04	10/16/04
A040113	FOUNDATION SPECIFICATIONS (Referenced on A040420 and A040108)	01/09/04 Rev. A	10/16/04
B010537	COMPACT BACKSTOP, TAU-II	03/25/02	10/16/04
B040219	FLUSH MOUNT BACKSTOP ASSEMBLY	04/19/04	10/16/04
B040239	APPLICATION, FLUSH MOUNT BACKSTOP (Typical for parallel system, 60 & 70 mph, up to 36" wide hazard width, connected to SCD RM-4.6)	04/21/04	10/16/04

ITEM 606 - IMPACT ATTENUATOR, TYPE 2-98 (65 MPH, 28" WIDE), (BIDIRECTIONAL) CONTINUED

B033004	WIDE TAU-II 60 MPH, 60" BACKSTOP (Typical for 60 mph combination system)	12/21/03	10/16/04
B033101	WIDE TAU-II 70 MPH, 66" BACKSTOP (Typical for 70 mph combination system)	02/13/04	10/16/04
B033009	WIDE TAU-II 60 MPH, 90" BACKSTOP (Typical for 60 mph flared system)	11/26/03	10/16/04
B033105	WIDE TAU-II 70 MPH, 90" BACKSTOP (Typical for 70 mph flared system)	02/17/04	10/16/04

3) THE TRINITY INDUSTRIES, INC. TRINITY ATTENUATING CRASH CUSHION DISTRIBUTED BY TRINITY INDUSTRIES, INC 1170 N. STATE ST., GIRARD, OHIO 44420, TELEPHONE: (800) 8321-2755. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AS DETAILED ON THE FOLLOWING SHOP DRAWINGS:

DWG. #	DRAWING NAME	DWG. DATE
SS455	TRACC Transition to W-beam Median Barrier Plan, Elevation, and Sections	11/02/99
SS456	TRACC Transition to Vertical Concrete Wall Plan, Elevation & Sections	09/07/00
SS497	WideTRACC - Double Flare Wing Extensions	11/22/02
SS699	WideTRACC & TRACC Assembled Modular Base Unit	04/02/03
SS1000	Crash Cushion Attenuating TerminalPlan, Elevation, and Section Assembled Unit, Base and Rip Plate Schematic	03/30/05
SS1001	Crash Cushion Attenuating TerminalAssembled Base Unit	04/22/05
SS1002	Crash Cushion Attenuating TerminalPlan, Elevations, & Sections Shop Assembly Details (2 sheets)	05/11/05
SS1003	Crash Cushion Attenuating TerminalPlan, Elevations and Sections Unidirectional, Direct Attachment (2 sheets)	04/25/05
SS1004	ShorTRACC Crash Cushion Attenuating Terminal Assembled Base Unit	05/16/05
SS1005	ShorTRACC Crash Cushion Attenuating Terminal Shop Assembly Details (2 sheets)	05/24/05
SS1006	ShorTRACC Crash Cushion Attenuating Terminal Unidirectional, Direct Attachment	05/24/05
SS1007	FasTRACC Crash Cushion Attenuating Terminal Assembled Base Unit	06/08/05
SS1008	FasTRACC Crash Cushion Attenuating Terminal Shop Assembly Details (2 sheets)	06/09/05
SS1009	FasTRACC Crash Cushion Attenuating Terminal Unidirectional, Direct Attachment	06/10/05
SS1010	TRACC Crash Cushion Attenuating Terminal 22' Concrete Foundation Plan	04/04/05
SS1013	ShorTRACC Crash Cushion Attenuating Terminal 15' Concrete Foundation Plan	04/04/05
SS1018	58" WideTRAC Double Flare Plan, Elevation, & Sections Shop Assembly Details (3 sheets)	08/08/05
SS1019	58" WideTRAC Double Flare Plan, Elevation, & Sections Unidirectional, Direct Attachment	08/12/05

WHEN BI-DIRECTIONAL DESIGNS ARE SPECIFIED, THE CONTRACTOR SHALL SUPPLY APPROPRIATE TRANSITIONS.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 606, IMPACT ATTENUATOR, TYPE 2-98 [(SPEED (IN MPH), HAZARD WIDTH (IN INCHES)), (UNIDIRECTIONAL OR BIDIRECTIONAL)], EACH, AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT A COMPLETE AND FUNCTIONAL IMPACT ATTENUATOR SYSTEM, INCLUDING ALL RELATED BACKUPS/BACKSTOPS, TRANSITIONS, HARDWARE AND GRADING, NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.

CALCULATED MJS
CHECKED BAD

GENERAL NOTES

WAY-21-5.74

DESIGN FILE: I:\projects\81797\roadway\sheets\81797GN003.dgn
WORKSTATION: mschafra DATE: 6/1/2007

MAINTENANCE OF TRAFFIC

CONSTRUCTION EQUIPMENT MEDIAN CROSSING

A MINIMUM OF 1 THROUGH LANE AND ONE LEFT TURN LANE IN EACH DIRECTION SHALL BE MAINTAINED AT ALL TIMES ON SR 21. THE LEFT TURN LANE SHALL BE A MINIMUM OF A 50 FOOT LONG TAPER PLUS A 100 FEET STORAGE LANE. THE RAMP FROM EASTBOUND SR 585 TO SOUTHBOUND SR 21 SHALL REMAIN OPEN TO TRAFFIC AND A "YIELD" SIGN INCLUDING A "YIELD AHEAD" SIGN AND SUPPORTS SHALL BE PROVIDED, MAINTAINED AND REMOVED BY THE CONTRACTOR. THE COST FOR THESE SIGNS SHALL BE INCIDENTAL IN THE LUMP SUM COST OF ITEM 614 MAINTAINING TRAFFIC.

THE EXISTING LANES OF TRAFFIC ON EASTERN ROAD SHALL BE MAINTAINED AT ALL TIMES, WITH THE USE OF FLAGGERS, AS NEEDED.

THE CONTRACTOR IS RESTRICTED TO WORK ON ONLY ONE SIDE OF SR 21 AT ANY TIME IN EACH DIRECTION AND THE WORK IS TO BE ON THE SAME SIDE OF THE ROADWAY IN EACH DIRECTION.

THE LENGTH AND DURATION OF LANE CLOSURES AND RESTRICTIONS SHALL BE AT THE APPROVAL OF THE ENGINEER. IT IS THE INTENT TO MINIMIZE THE IMPACT TO THE TRAVELING PUBLIC. LANE CLOSURES OR RESTRICTIONS OVER SEGMENTS OF THE PROJECT IN WHICH NO WORK IS ANTICIPATED WITHIN A REASONABLE TIME FRAME, AS DETERMINED BY THE ENGINEER, SHALL NOT BE PERMITTED. THE LEVEL OF UTILIZATION OF MAINTENANCE OF TRAFFIC DEVICES SHALL BE COMMENSURATE WITH THE WORK IN PROGRESS.

IMMEDIATELY AFTER THE CONCRETE MEDIAN BARRIER IS CONSTRUCTED, AS DETERMINED BY THE ENGINEER, THE IMPACT ATTENUATOR SHALL BE CONSTRUCTED TO PROTECT THE EXPOSED END. THE INTENT IS TO MAXIMIZE THE SAFETY TO THE TRAVELING PUBLIC.

SHOULD THE CONTRACTOR FAIL TO MEET ANY OF THESE REQUIREMENTS, THE CONTRACTOR SHALL BE ASSESSED LIQUIDATED DAMAGES IN ACCORDANCE WITH CMS 108.07.

ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH CMS 614 AND OTHER APPLICABLE PORTIONS OF THE SPECIFICATIONS, AS WELL AS THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614, MAINTAINING TRAFFIC, UNLESS SEPARATELY ITEMIZED IN THE PLANS.

PLACEMENT OF ASPHALT CONCRETE

TWO-WAY TRAFFIC SHALL BE MAINTAINED AT ALL TIMES IN EACH DIRECTION. TRAFFIC WILL NOT BE PERMITTED ON PAVED SURFACES FOR MINIMUM PERIODS OF TIME CONSISTENT WITH THE REQUIREMENTS OF THE SPECIFICATIONS FOR PROTECTION OF COMPLETED ASPHALT CONCRETE COURSES.

BUTT JOINTS

BUTT JOINTS SHALL NOT BE CUT AND LEFT OPEN TO TRAFFIC. THEY SHALL BE FILLED IN WITH A TEMPORARY ASPHALT CONCRETE WEDGE OF SUFFICIENT LENGTH, AS DIRECTED BY THE ENGINEER.

CONSTRUCTION "BUMP" (W8-1-36) AND "ADVISORY SPEED" (W13-1-24) SIGNS SHALL BE ERECTED AND MAINTAINED DURING THE PERIOD THE BUTT JOINT IS LEFT OPEN. THESE SIGNS SHALL BE PAID FOR UNDER THE LUMP SUM ITEM FOR ITEM 614 MAINTAINING TRAFFIC.

CONSTRUCTION EQUIPMENT MEDIAN CROSSING

CONSTRUCTION EQUIPMENT SHALL CROSS THE MEDIAN ONLY AT THE EXISTING INTERSECTIONS AND U-TURN CROSSOVERS AND AT OTHER ADDITIONAL LOCATIONS APPROVED BY THE ENGINEER. A MAXIMUM OF TWO (2) ADDITIONAL EQUIPMENT CROSSINGS MAY BE ALLOWED. THE CONTRACTOR SHALL BE RESPONSIBLE, AT HIS EXPENSE, FOR THE RESTORATION OF THE ADDITIONAL EQUIPMENT CROSSINGS TO A CONDITION AT LEAST EQUAL TO THAT EXISTING PRIOR TO HIS WORK OPERATIONS. WHEN THE MEDIAN CROSSINGS ARE BEING USED IN THE AREA OF ONE-LANE TRAFFIC OPERATION, THE CONTRACTOR SHALL PROVIDE AT HIS EXPENSE THE SERVICES OF A LAW ENFORCEMENT OFFICER WITH PATROL CAR TO CONTROL TRAFFIC FLOW.

OVERNIGHT TRENCH CLOSING

THE BASE WIDENING SHALL BE COMPLETED TO A DEPTH OF NO MORE THAN 3.00" INCHES BELOW THE EXISTING PAVEMENT BY THE END OF EACH WORK DAY. NO TRENCH SHALL BE LEFT OPEN OVERNIGHT. IN CASE WORK MUST BE SUSPENDED BECAUSE OF INCLEMENT WEATHER OR OTHER REASONS, THE TRENCH FOR THE UNCOMPLETED BASE WIDENING SHALL BE BACKFILLED AT THE DIRECTION OF THE ENGINEER.

ITEM 614, WORK ZONE MARKING SIGN

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER FOR TEMPORARY WORK ZONE MARKING SIGNS PER THE REQUIREMENTS OF THE CONSTRUCTION AND MATERIALS SPECIFICATIONS, 614.04.

WORK ZONE MARKING SIGN: (W8-H13-36) NO EDGE LINE _____ = 4 EACH

TOTAL = 4 EACH

WORKSITE TRAFFIC SUPERVISOR

THE CONTRACTOR SHALL EMPLOY (OTHER THAN THE SUPERINTENDENT) AND SUBJECT TO THE APPROVAL OF THE ENGINEER, A CERTIFIED WORKSITE TRAFFIC SUPERVISOR (WTS). THE WTS MAY BE CERTIFIED FROM ONE OF THE FOLLOWING ORGANIZATIONS:

1). AMERICAN TRAFFIC SAFETY SERVICE ASSOCIATION A.T.S.S.A., PHONE NUMBER 1-800-272-8772, CERTIFIED WORKSITE TRAFFIC SUPERVISOR (WTS)

2). THE NATIONAL SAFETY COUNCIL, TRAFFIC CONTROL ZONES SUPERVISORS COURSE, PHONE NUMBER 1-800-441-5103

3). NATIONAL HIGHWAY INSTITUTE, DESIGN AND OPERATION OF WORK ZONE TRAFFIC CONTROL, PHONE NUMBER 1-703-235-0528

A CERTIFIED WTS SHALL BE PRESENT WHEN THE CONTRACTOR OR SUBCONTRACTOR INSTALLS A TRAFFIC RESTRICTION, LANE CLOSURE, ETC. THE CONTRACTOR OR SUBCONTRACTOR MUST PRESENT A COPY OF CERTIFICATES FOR ALL WTS TO THE ENGINEER. A WTS MUST BE PRESENT WHEN THE WORK ZONE IS BEING SET UP OR REMOVED.

THE WTS POSITION IS ESTABLISHED FOR THE PURPOSE OF MONITORING THE TRAFFIC CONTROL PLAN (TCP) AND CORRECTING ANY TRAFFIC CONTROL DEFICIENCIES IN THE WORK ZONE. THE WTS MUST ALSO COORDINATE WITH ALL LAW ENFORCING AGENCIES RESPONSIBLE FOR THE ROADWAY UNDER CONSTRUCTION AND RETRIEVE ALL CRASH REPORTS (OH-1) THAT OCCUR WHEN TEMPORARY TRAFFIC CONTROL DEVICES ARE IN PLACE. THE WTS SHALL OVERSEE ALL OPERATIONS THAT AFFECT THE MOVEMENT OF VEHICULAR AND PEDESTRIAN TRAFFIC THROUGH THE WORK ZONE. TRAFFIC CONTROL AND CRASH DATA EVALUATION WILL BE THE WTS MAIN RESPONSIBILITY WHEN A WORK ZONE IS IN PLACE.

DAILY, INCLUDING WEEKENDS AND HOLIDAYS, THE WTS SHALL SPEND A MINIMUM OF ONE HOUR REVIEWING THE WORK ZONE AND/OR CRASH DATA FOR DEFICIENCIES AND MAINTAINING THE WORK ZONE.

WEEKLY, THE WTS MUST RETRIEVE/COLLECT ALL CRASH REPORTS (OH-1) FROM ALL LAW ENFORCING AGENCIES, EVALUATE THE CRASHES, AND RECOMMEND SOLUTIONS TO ADDRESS ANY ISSUES WITH THE TCP THAT ARE POTENTIALLY CREATING CRASHES WITHIN THE WORK ZONE. THE WTS MUSTPRESENT THESE SOLUTIONS TO THE ENGINEER FOR APPROVAL WEEKLY. UPON APPROVAL BY THE ENGINEER AND THE DISTRICT WORK ZONE TRAFFIC MANAGER (DWZTM), THE CONTRACTOR MUST IMPLEMENT THE RECOMMENDED SOLUTIONS TO THE WORK ZONE WITHIN ONE WEEK - ADDITIONAL COST TO BE PAID UNDER CONSTRUCTION AND MATERIALS SPECIFICATIONS - 109. THE WTS MUST INSPECT THE WORK ZONE AT THE BEGINNING AND THE END OF EACH WORK DAY AND ONE TIME PER WEEK DURING THE HOURS OF DARKNESS. THE FOLLOWING ITEMS SHALL BE INCLUDED, BUT NOT RESTRICTED TO, IN EACH REVIEW: TRAFFIC CONTROL DEVICE CONDITION; PLACEMENT; VISIBILITY; TRAFFIC FLOW CONDITIONS; INCIDENTS; CONGESTION POINTS; DELAYS; ADEQUACY OF ADVANCED INFORMATIONAL SIGNS BEYOND PROJECT LIMITS; INTERACTION OF WORK VEHICLES AND TRAFFIC; ACCIDENTS; PROPER STORAGE OF MATERIALS AND EQUIPMENT; CONFORMANCE WITH TCP; ADEQUACY OF TCP; CONFLICTING OR NON-CONFORMING PAVEMENT MARKINGS. THE WTS SHALL HAVE THE NECESSARY AUTHORITY TO IMMEDIATELY PERFORM ANY CORRECTIVE WORK. A RECORD OF EACH DAYS REVIEW SHALL BE GIVEN TO THE ENGINEER THE FOLLOWING WORKDAY IN WRITING AND SHALL INCLUDE ALL DEFICIENCIES AND RESOLUTIONS TO THE DEFICIENCIES. THE INSPECTION WILL BE DOCUMENTED ON THE LONG/SHORT TERM WORK ZONE REVIEW FORM PROVIDED BY ODOT. WEEKLY, THE INSPECTION FORM MUST BE ACCOMPANIED BY ALL OF THE OH-1 CRASH REPORTS AND THE PROPOSED SOLUTIONS TO ANY IDENTIFIED CRASH PROBLEMS.

IF THE RESTRICTIONS ARE SHORT TERM, THE WTS SHALL MONITOR THE ZONE FOR COMPLIANCE, DURING LANE CLOSURES; HE SHALL MAKE SURE ALL TRAFFIC CONTROL ITEMS ARE FUNCTIONING PROPERLY. TRAFFIC CONTROL AND CRASH DATA EVALUATION WILL BE THE WTS MAIN RESPONSIBILITY DURING IMPLEMENTATION OF ZONES OR SHORT TERM ZONES. THE WTS SHALL PROVIDE THE DWZTM A SKETCH OF THE TRAFFIC CONTROL PLAN (TCP) EVERYDAY THERE IS TO BE A SHORT TERM TRAFFIC RESTRICTION, LANE CLOSURE, ETC. THIS TCP SHALL SHOW HOW THE WORK ZONES ARE TO BE IMPLEMENTED.

THE WTS SHALL BE ON STANDBY 24-HOUR BASIS TO REPAIR AND/OR REPLACE DAMAGED OR MISSING TRAFFIC CONTROL DEVICES. A 24-HOUR CONTACT NUMBER(S) SHALL BE MADE AVAILABLE TO THE ENGINEER TO CONTACT THE WTS.

FAILURE OF THE CONTRACTOR TO COMPLY WITH ANY OF THE ABOVE, SHALL CONSTITUTE CAUSE FOR THE PROJECT ENGINEER TO DEDUCT $500.00 PER DAY FROM MONEY DUE TO THE CONTRACTOR NOT AS A PENALTY, BUT AS A LIQUIDATION DAMAGE.

PAYMENT FOR THE WTS SHALL BE INCLUDED UNDER THE ITEM "614 - WORKSITE TRAFFIC SUPERVISOR" BY MONTH.

ITEM 614 - WORKSITE TRAFFIC SUPERVISOR _____ _____ 2 MONTHS

ITEM 614, MAINTAINING TRAFFIC (LANES OPEN DURING HOLIDAYS)

NO WORK SHALL BE PERFORMED AND ALL EXISTING LANES SHALL BE OPEN TO TRAFFIC DURING THE FOLLOWING DESIGNATED HOLIDAYS OR EVENTS:

CHRISTMAS	FOURTH OF JULY
NEW YEARS	LABOR DAY
MEMORIAL DAY	THANKSGIVING

THE PERIOD OF TIME THAT THE LANES ARE TO BE OPEN DEPENDS ON THE DAY OF THE WEEK ON WHICH THE HOLIDAY OR EVENT FALLS. THE FOLLOWING SCHEDULE SHALL BE USED TO DETERMINE THIS PERIOD:

DAY OF THE WEEK	TIME ALL LANES MUST BE OPEN TO TRAFFIC
SUNDAY	12:00N FRIDAY THROUGH 6:00 AM MONDAY
MONDAY	12:00N FRIDAY THROUGH 6:00 AM TUESDAY
TUESDAY	12:00N MONDAY THROUGH 6:00 AM WEDNESDAY
WEDNESDAY	12:00N TUESDAY THROUGH 6:00 AM THURSDAY
THURSDAY	12:00N WEDNESDAY THROUGH 6:00 AM MONDAY
FRIDAY	12:00N THURSDAY THROUGH 6:00 AM MONDAY
SATURDAY	12:00N FRIDAY THROUGH 6:00 AM MONDAY

NO EXTENSIONS OF TIME SHALL BE GRANTED FOR DELAYS IN MATERIAL DELIVERIES, UNLESS SUCH DELAYS ARE INDUSTRY-WIDE, OR FOR LABOR STRIKES, UNLESS SUCH STRIKES ARE AREA-WIDE.

SHOULD THE CONTRACTOR FAIL TO MEET ANY OF THESE REQUIREMENTS, THE CONTRACTOR SHALL BE ASSESSED LIQUIDATED DAMAGES IN ACCORDANCE WITH CMS 108.07.

ITEM 614, ASPHALT CONCRETE FOR MAINTAINING TRAFFIC

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY TO CONSTRUCT A TEMPORARY ASPHALT WEDGE FROM THE EXISTING PAVEMENT TO THE PLANED SURFACE AT BUTT JOINTS AND OTHER LOCATIONS THAT RESULT IN A DROP-OFF IN EXCESS OF 1.5 INCHES, AS DIRECTED BY THE ENGINEER. THIS QUANTITY SHALL ALSO BE USED AT PLANED SURFACES WHERE A TEMPORARY ASPHALT WEDGE IS NEEDED AROUND CASTINGS, AS DIRECTED BY THE ENGINEER. BEFORE THE ASPHALT CONCRETE RESURFACING IS PLACED, THE TEMPORARY WEDGE SHALLBE REMOVED AND THE COST SHALL BE CONSIDERED INCIDENTAL TO ITEM 614 ASPHALT CONCRETE FOR MAINTAINING TRAFFIC.

ITEM 614, ASPHALT CONCRETE FOR MAINTAINING TRAFFIC _____ 30 CU YD

ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR

IN ADDITION TO THE REQUIREMENTS OF CMS 614 AND THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (OMUTCD), A UNIFORMED LAW ENFORCEMENT OFFICER (AND OFFICIAL PATROL CAR WITH WORKING TOP-MOUNTED EMERGENCY FLASHING LIGHTS) SHALL BE PROVIDED FOR CONTROLLING TRAFFIC FOR THE FOLLOWING TASKS:

FOR LANE CLOSURES: DURING INITIAL SET-UP PERIODS, TEAR DOWN PERIODS, SUBSTANTIAL SHIFTS OF A CLOSURE POINT OR WHEN NEW LANE CLOSURE ARRANGEMENTS ARE INITIATED.

DURING THE ENTIRE ADVANCE PREPARATION AND CLOSURE SEQUENCE WHERE COMPLETE BLOCKAGE OF TRAFFIC IS REQUIRED.

DURING A TRAFFIC SIGNAL INSTALLATION.

LAW ENFORCEMENT OFFICERS (LEOS) SHOULD NOT BE USED WHERE THE OMUTCD INTENDS THAT FLAGGERS BE USED. THE LEOS ARE CONSIDERED TO BE EMPLOYED BY THE CONTRACTOR AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR THEIR ACTIONS. ALTHOUGH THEY ARE EMPLOYED BY THE CONTRACTOR, THE ENGINEER SHALL HAVE CONTROL OVER THEIR PLACEMENT.THE OFFICIAL PATROL CAR SHALL BE A PUBLIC SAFETY VEHICLE AS REQUIRED BY THE OHIO REVISED CODE. THE CONTRACTOR SHALL MAKE ARRANGEMENTS FOR THESE SERVICES WITH: THE STATE OF OHIO HIGHWAY PATROL.

LAW ENFORCEMENT OFFICERS (WITH PATROL CAR) REQUIRED BY THE TRAFFIC MAINTENANCE TASKS ABOVE SHALL BE PAID FOR ON A UNIT PRICE (HOURLY) BASIS UNDER ITEM 614, LAW ENFORCEMENT OFFICER (WITH PATROL CAR). THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY.

ITEM 614, LAW ENFORCEMENT OFFICE WITH PATROL CAR _____ 80 HOURS

THE HOURS PAID SHALL INCLUDE MINIMUM SHOW-UP TIME REQUIRED BY THE LAW ENFORCEMENT AGENCY INVOLVED.

IF CONTRACTORS WISH TO UTILIZE LEOS FOR FLAGGING AND TRAFFIC CONTROL OTHER THAN FOR THAT REQUIRED IN THESE PLANS, THEY MAY DO SO AT THEIR OWN EXPENSE. PAYMENT FOR THE EXCESS ABOVE THE CONTRACT REQUIREMENTS WILL BE INCLUDED UNDER ITEM 614, MAINTAINING TRAFFIC.

CALCULATED MJS
CHECKED BAD

GENERAL NOTES

WAY-21-5.74

DESIGN FILE: I:\projects\81797\roadway\sheets\81797GN004.dgn
WORKSTATION: mschafra DATE: 6/1/2007

GENERAL NOTES

1. IT IS INTENDED THAT THIS DRAWING BE USED FOR TREATMENT OF DROP-OFFS THAT DEVELOP DURING CONSTRUCTION OPERATONS, AND THAT ARE NOT OTHERWISE PROVIDED FOR IN THE CONSTRUCTION PLANS. THE SUGGESTED TREATMENTS ARE INTENDED FOR HIGH VOLUME PROJECTS THAT WILL LAST AT LEAST SEVEN DAYS AND HAVE AN ACTIVE WORK ZONE 1 MILE (1.6 KM) OR LESS IN LENGTH. FOR GUIDANCE ON THE USE OF THIS SHEET, SEE THE TRAFFIC ENGINEERING MANUAL. WHERE THE PLANS DO NOT PROVIDE SPECIFIC ITEMS FOR LABOR, EQUIPMENT, OR MATERIALS TO IMPLEMENT THE DROP-OFF TREATMENTS SPECIFIED HERON, THEY SHALL BE INCLUDED FOR PAYMENT IN THE LUMP SUM BID FOR ITEM 614-MAINTAINING TRAFFIC.

2. WHILE THE NEED FOR CERTAIN ADVISORY SIGNING IS NOTED HERON, IT IS NOT INTENDED THAT THIS BE INDICATIVE OF ALL SIGNING THAT MAY BE REQUIRED TO ADVISE OR WARN MOTORISTS. ALL REQUIREMENTS OF THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (OMUTCD) MUST BE FULFILLED.

3. IN URBAN OR OTHERWISE HEAVILY DEVELOPED AREAS WHERE PEDESTRIANS AND/OR BICYCLISTS MAY BE PRESENT IN SIGNIFICANT NUMBERS, ADDITIONAL SIGNING AND PROTECTIVE MEASURES OTHER THAN THOSE SHOWN HEREON MAY BE REQUIRED.

4. THE DROP-OFF TREATMENT SELECTED FOR USE AT ANY GIVEN LOCATION SHALL BE AS APPROPRIATE FOR THE PREVAILING CONDITIONS AT THE SITE.

5. WHERE CONCRETE BARRIER IS SPECIFIED, IT SHALL BE IN ACCORDANCE WITH SCD RM-4.2 AND ITEM 622.

6. WHEN DRUMS ARE SPECIFIED FOR A DROP-OFF CONDITION, A MINIMUM NUMBER OF FOUR DRUMS SHALL BE USED. SPACING SHALL BE AS INDICATED IN THE PLANS OR AS SPECIFIED IN THE OMUTCD.

7. WHEN W8-9 (LOW SHOULDER) SIGNS OR W8-9A (SHOULDER DROP-OFF) SIGNS OR W8-1871 (UNEVEN LANES) SIGNS ARE REQUIRED, THEY SHALL BE PLACED 750' (250 M) IN ADVANCE OF THE CONDITION, ON ALL INTERSECTING ENTRANCE RAMPS WITHIN THE LIMITS OF THE CONDITION AND IMMEDIATELY BEYOND ALL INTERSECTING ROADWAYS WITHIN THE LIMITS OF THE CONDITION. WHEN THE DROP-OFF CONDITION EXTENDS MORE THAN 0.5 MILE (800M), ADDITIONAL SIGNS SHOULD BE ERECTED AT INTERVALS OF 1.0 MILE (1600 M) OR LESS.

8. FOR LOCATIONS, SUCH AS AT RAMPS, LANE SHIFTS, LANE CLOSURES, ETC., WHERE TRAFFIC IS REQUIRED TO NEGOTIATE A DIFFERENCE IN ELEVATION BETWEEN PAVEMENTS, A 3:1 SLOPE TREATMENT SIMILAR TO THE OPTIONAL WEDGE TREATMENT SHALL BE PROVIDED.

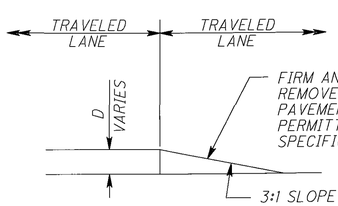
9. PORTABLE CONCRETE BARRIER SHALL BE PLACED ON THE SAME LEVEL AS THE TRAFFIC SURFACE AND SHALL NOT ENCROACH ON LANE WIDTH(S) DESIGNATED AS THE MINIMUM REQUIRED FOR TRAFFIC USE. WHERE DRUMS ARE USED, AND THEIR PRESENCE WOULD REDUCE TRAVELED LANE WIDTHS TO LESS THAN 10' (3.0M), DRUMS MAY BE PLACED ON THE OPPOSITE LEVEL FROM THAT OF TRAFFIC PROVIDED THE DROP-OFF DEPTH DOES NOT EXCEED 5" (125) AND APPROVAL IS GRANTED BY THE PROJECT ENGINEER.

10. PAVEMENT REPAIRS (OR SIMILAR WORK):
    A. LENGTHS GREATER THAN 60' (18 M) - UTILIZE APPROPRIATE TREATMENT FROM CONDITION 1.
    B. LENGTHS OF 60' (18 M) OR LESS - REPAIRS SHALL BE EFFECTED IN ACCORDANCE WITH CMS 255.08. DRUMS MAY BE USED AS A SEPARATOR ADJACENT TO THE TRAVELED LANE.

OPTIONAL WEDGE TREATEMENT

(MILLING OR RESURFACING)

1. THIS TREATMENT MAY BE USED WHEN PERMITTED FOR CONDTION 1 ONLY.
2. W8-9A SIGN REQUIRED



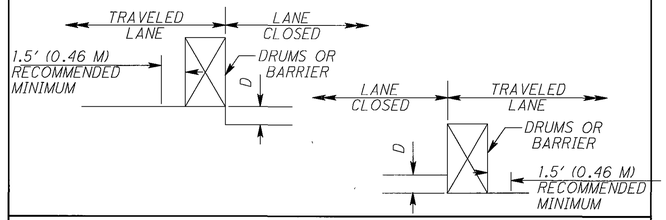
CONDITION I

DROP-OFFS BETWEEN TRAVELED LANES

1. THESE TREATMENTS ARE TO BE USED FOR RESURFACING, PAVEMENT PLANING, EXCAVATION, ETC. BETWEEN OR WITHIN TRAVELED LANES.

D	TREATMENT
≤1½" (≤40)	ERECT W8-11 SIGN
>1½"-3" (40-75)	1. LANE CLOSURE UTILIZING DRUMS* AS SHOWN BELOW OR 2. OPTIONAL WEDGE TREATMENT
>3"-5" (>75-125)	LANE CLOSURE UTILIZING DRUMS AS SHOWN BELOW
>5" (>125)	LANE CLOSURE UTILIZING PORTABLE CONCRETE BARRIER AS SHOWN BELOW

* CONES MAY BE USED FOR DAYTIME ONLY CONDITIONS



CONDITION II

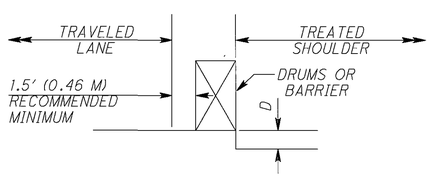
DROP-OFFS WITHIN GRADED SHOULDER AREA

THE TREATMENTS INDICATED BELOW ARE FOR USE IN CONJUNCTION WITH RESURFACING, PLANING, OR EXCAVATIONS WITHIN THE GRADED SHOULDER AREA.

THE GRADED SHOULDER AREA IS THAT FLAT OR GRADUALLY SLOPING AREA BETWEEN THE EDGE OF A NORMALLY TRAVELED LANE AND THE MORE STEEPLY SLOPING DITCH FORESLOPE OR EMBANKMENT SLOPE. ITS SURFACE MAY BE SOIL OR TURF, AND/OR IT MAY BE INCLUSIVE OF A "TREATED" AREA (IMPROVED WITH MAXIMUM WIDTH SHALL BE CONSIDERED TO BE 12' (3.6 M).

D	TREATMENT
<1½" (<40)	ERECT W8-9A SIGNS
>1½"-5" (>40-125)	1. IF MINIMUM LANE WIDTH* REQUIREMENTS CAN BE MET, MAINTAIN LANES UTILZING DRUMS AS SHOWN BELOW OR 2. IF MINIMUM LANE WIDTH* REQUIREMENTS CANNOT BE MET, CLOSE ADJACENT LANE UTILIZING DRUMS OR 3. OPTIONAL SHOULDER TREATMENT
>5"-12" (>125-305) DAYLIGHT ONLY	IF MINIMUM LANE WIDTH* REQUIREMENTS CAN BE MET, MAINTAIN LANES UTILIZING DRUMS AS SHOWN BELOW.
>5"-24" (>125-610)	1. IF MINIMUM LANE WIDTH* REQUIREMENTS CAN BE MET, MAINTAIN LANES UTILIZING PORTABLE CONCRETE BARRIER AS SHOWN BELOW. OR 2. IF MINIMUM LANE WIDTH* REQUIREMENTS CANNOT BE MET, CLOSE ADJACENT LANE UTILIZING DRUMS.
>5"-24" (>125-610)	LANE CLOSURE UTILIZING PORTABLE CONCRETE BARRIER AS SHOWN BELOW

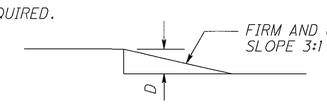
*MINIMUM LANE WIDTHS SHALL BE 10' (3.0 M) UNLESS OTHERWISE SPECIFIED IN THE PLANS.



OPTIONAL SHOULDER TREATMENT

1. THIS TREATMENT MAY NOT BE USED WITHIN A BITUMINOUS SHOULDER WHERE A HOT LONGITUDINAL JOINT PER CMS 401.15 IS REQUIRED.

2. W8-9 SIGNS REQUIRED.



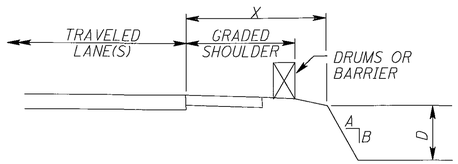
CONDITION III

DROP-OFFS BEYOND GRADED SHOULDER OR BACK OF CURB

1. SEE NOTE 2 UNDER CONDITION II.
2. USE CHART A OR B BELOW, AS APPLICABLE.

CHART A

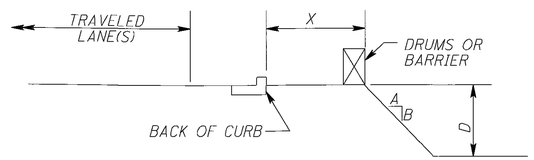
USE FOR: 1. UNCURBED FACILITIES.
2. CURBED FACILITIES, WHERE:
   A. CURBS ARE LESS THAN 6" (150) IN HEIGHT.
   B. CURBS ARE 6" (150) OR GREATER IN HEIGHT AND THE LEGAL SPEED IS GREATER THAN 40 MPH (70 KM/H)



X	D	A/B	Treatment Required	
			Day	Night
0-4' (0-1.2 M)	ANY	ANY	(A)	(A)
4'-30' (1.2 M-9.1 M)	ANY	3:1 OR FLATTER	NONE	NONE
4'-12' (1.2 M-3.6 M)	≤3" (≤75)	STEEPER THAN 3:1	NONE	NONE
4'-12' (1.2 M-3.6 M)	>3"-≤12" (>75-≤305)	STEEPER THAN 3:1	DRUMS	DRUMS
4'-12' (1.2 M-3.6 M)	>12" (>305)	STEEPER THAN 3:1	DRUMS	BARRIER
>12'-20' (>3.6 M-6.1 M)	>12" (>305)	STEEPER THAN 3:1	NONE	NONE
>12'-20' (>3.6 M-6.1 M)	>12"-<24" (>305-<610)	STEEPER THAN 3:1	DRUMS	DRUMS
>12'-20' (>3.6 M-6.1 M)	>24" (>610)	STEEPER THAN 3:1	DRUMS	BARRIER
>20'-30' (>6.1 M-9.1 M)	<24" (<610)	STEEPER THAN 3:1	NONE	NONE
>20'-30' (>6.1 M-9.1 M)	>24" (>610)	STEEPER THAN 3:1	DRUMS	BARRIER
>30' (>9.1 M)	ANY	ANY	NONE	NONE
(A) USE TREATMENT SPECIFIED UNDER CONDITION II				

CHART B

USE FOR: CURBED FACILITIES, WHERE THE CURB IS 6" (150) OR GREATER IN HEIGHT AND THE LEGAL SPEED IS 40 MPH (70 KM/H) OR LESS.



X	D	A/B	TREATMENT REQUIRED	
			DAY	NIGHT
0-10' (0-3.0 M)	<12" (<305)	ANY	NONE	DRUMS
0-10' (0-3.0 M)	>12" (>305)	ANY	DRUMS	DRUMS
>10' (>3.0 M)	ANY	ANY	NONE	NONE

NOTE: ALL METRIC DIMENSIONS (IN BRACKETS ( )) ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.

08-07-01

DROP-OFFS IN WORK ZONES

OFFICE OF TRAFFIC ENGINEERING

WAY-21-5.74

DESIGN FILE: I:\projects\81797\roadway\sheets\81797MM001.dgn
WORKSTATION: mschafra DATE: 6/1/2007

SAFETY											DISTRICT									
CO CO CONTR01 (100% STATE)											CO CO CONTR02 (100% STATE)				ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	REF. SHEET
4	10	16	17	18	19	20	21	22	23	55	9	17	19	22						
																			ROADWAY	
		LUMP													201	11000	LUMP		CLEARING AND GRUBBING	
		185													202	32000	185	FT	CURB REMOVED	
		50													202	35100	50	FT	PIPE REMOVED, 24" AND UNDER	
		1													202	58100	1	EACH	CATCH BASIN REMOVED	
		1													202	98100	1	EACH	REMOVAL MISC.: CONCRETE CATCH BASIN APRON	9
							489			2636					203	10000	3125	CU YD	EXCAVATION	
							28			1505					203	20000	1533	CU YD	EMBANKMENT	
			2630			4423		289							204	10000	7342	SQ YD	SUBGRADE COMPACTION	
				1.3			2.2	0.2							204	45000	4	HOUR	PROOF ROLLING	
		125.0													606	13000	125	FT	GUARDRAIL, TYPE 5	
		112.5													606	15500	112.5	FT	GUARDRAIL, BARRIER DESIGN, TYPE 5	
		2													606	22010	2	EACH	ANCHOR ASSEMBLY, TYPE E-98	
		1													606	25000	1	EACH	ANCHOR ASSEMBLY, TYPE A	
		3													606	26500	3	EACH	ANCHOR ASSEMBLY, TYPE T	
		2													606	35004	2	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 1, BARRIER DESIGN	
		2													606	60010	2	EACH	IMPACT ATTENUATOR, TYPE 1-98 (BIDIRECTIONAL)	
		2													606	60024	2	EACH	IMPACT ATTENUATOR, TYPE 2-98 (BIDIRECTIONAL) (65 MPH / 28" WIDE)	
		550													622	10120	550	FT	CONCRETE BARRIER, SINGLE SLOPE, TYPE C	
		4													622	24840	4	EACH	CONCRETE BARRIER END SECTION, TYPE B	
																			EROSION	
	4														659	00100	4	EACH	SOIL ANALYSIS TEST	
							869			8485					659	10000	9354	SQ YD	SEEDING AND MULCHING	
	468														659	14000	468	SQ YD	REPAIR SEEDING AND MULCHING	
	468														659	15000	468	SQ YD	INTER-SEEDING	
	2.10														659	20000	2.1	TON	COMMERCIAL FERTILIZER	
	1.93														659	31000	1.93	ACRE	LIME	
	51														659	35000	51	M GAL	WATER	
LUMP															832	15000	LUMP		STORM WATER POLLUTION PREVENTION PLAN	
10000															832	30000	10000	EACH	EROSION CONTROL	
																			DRAINAGE	
									72						603	00100	72	FT	4" CONDUIT, TYPE B (707.33)	
									22						603	00410	22	FT	4" CONDUIT, TYPE F FOR UNDERDRAIN OUTLET	
									8						603	01100	8	FT	6" CONDUIT, TYPE C	
									365						603	04400	365	FT	12" CONDUIT, TYPE B	
									578						603	05900	578	FT	15" CONDUIT, TYPE B	
									126						603	07400	126	FT	18" CONDUIT, TYPE B	
									87						603	07600	87	FT	18" CONDUIT, TYPE C	
									1						604	02000	1	EACH	CATCH BASIN, NO. 6	
									1						604	02800	1	EACH	CATCH BASIN, NO. 8	
									1						604	09500	1	EACH	CATCH BASIN RECONSTRUCTED TO GRADE	
									3						604	20520	3	EACH	INLET, NO. 3 FOR SINGLE SLOPE BARRIER, TYPE C	
									1						604	31500	1	EACH	MANHOLE, NO. 3	
									1						604	36600	1	EACH	PRECAST REINFORCED CONCRETE OUTLET	
									1701						605	05110	1701	FT	4" SHALLOW PIPE UNDERDRAINS WITH FABRIC WRAP	
									40						835	10010	40	FT	EXFILTRATION TRENCH, TYPE B	
																			PAVEMENT	
		2924													252	01500	2924	FT	FULL DEPTH PAVEMENT SAWING	
			4941		10368			1729							254	01000	17038	SQ YD	PAVEMENT PLANING, ASPHALT CONCRETE (VARIABLE DEPTH)	
				49			104	17							254	01600	170	SQ YD	PATCHING PLANED SURFACE	
											392				255	10501	392	SQ YD	FULL DEPTH PAVEMENT REMOVAL AND RIGID REPLACEMENT, WITH MATURITY, AS PER PLAN	9
											1512				255	20000	1512	FT	FULL DEPTH PAVEMENT SAWING	
	17		572			959		86							301	46001	1634	CU YD	ASPHALT CONCRETE BASE, PG64-22, AS PER PLAN	9
			437			723		48							304	20000	1208	CU YD	AGGREGATE BASE	
				421			782	49							407	10000	1252	GALLON	TACK COAT	
				318			609	80							407	14000	1007	GALLON	TACK COAT FOR INTERMEDIATE COURSE	
				114			309	17							408	10000	440	GALLON	PRIME COAT	
			331		634			83							442	10000	1048	CU YD	ASPHALT CONCRETE SURFACE COURSE, 12.5MM, TYPE A (446)	
												386	799	97	442	20200	1282	CU YD	ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM, TYPE A (448)	
				12			32	4							617	10101	48	CU YD	COMPACTED AGGREGATE, AS PER PLAN	10
				360			357	98							SPECIAL	69012050	815	SQ YD	REINFORCED MESH FOR TRANSVERSE AND/OR LONGITUDINAL JOINTS AND CRACKS	9

CALCD | CHECKED

GENERAL SUMMARY

WAY-21-5.74

Revised 6-22-07

6/22/2007 13:54

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SAFETY												DISTRICT						
CO CO CONTR01 (100% STATE)												COCOCONTR02 (100% STATE)	ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	REF. SHEET
12	16	56	65	75														
																	TRAFFIC CONTROL	
		190											621	00101	190	EACH	RPM, AS PER PLAN	10
	15												626	00100	15	EACH	BARRIER REFLECTOR, TYPE A	
	18												626	00200	18	EACH	BARRIER REFLECTOR, TYPE B	
			238.0										630	02101	238	FT	GROUND MOUNTED SUPPORT, NO. 2 POST, AS PER PLAN	64
			210.0										630	03101	210	FT	GROUND MOUNTED SUPPORT, NO. 3 POST, AS PER PLAN	64
			2										630	08600	2	EACH	SIGN POST REFLECTOR, RED	
			183.5										630	80100	183.5	SQ FT	SIGN, FLAT SHEET	
			2										630	81020	2	EACH	CONCRETE MEDIAN BARRIER SIGN BRACKET (METHOD A)	
			18										630	84900	18	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	
			4										630	85100	4	EACH	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION	
			24										630	86002	24	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	
			40										630	97700	40	EACH	SIGNING, MISC.: SIGN DATA COLLECTION	64
		1.60											644	00100	1.60	MILE	EDGE LINE	
		0.88											644	00200	0.88	MILE	LANE LINE	
		0.02											644	00300	0.02	MILE	CENTER LINE	
		3412											644	00400	3412	FT	CHANNELIZING LINE	
		404											644	00500	404	FT	STOP LINE	
		1336											644	00700	1336	FT	TRANSVERSE/DIAGONAL LINE	
		18											644	01300	18	EACH	LANE ARROW	
		325											644	01500	325	FT	DOTTED LINE, 4"	
																	TRAFFIC SIGNALS	
				50									603	00400	50	FT	4" CONDUIT, TYPE E	72
				3									625	00600	3	EA	CONNECTOR KIT, TYPE III	
				6									625	01200	6	EA	CONNECTOR KIT, TYPE VIII, CU	
				3									625	14001	3	EA	LIGHT POLE FOUNDATION, 24"X6' DEEP, AS PER PLAN	72, 81
				282									625	25402	282	FT	CONDUIT, 2", 725.05	
				106									625	25900	106	FT	CONDUIT JACKED OR DRILLED UNDER PAVEMENT, 2"	
				282									625	29001	282	FT	TRENCH, AS PER PLAN	72
				2									625	30701	2	EA	PULL BOX. 725.08, 18", AS PER PLAN	72
				4									625	31600	4	EA	PULL BOX, MISC.: PULL BOX REMOVED AND REINSTALLED, AS PER PLAN	72
				4									625	31600	4	EA	PULL BOX, MISC.: PULL BOX ADJUSTED TO GRADE, AS PER PLAN	72
				3									625	32001	3	EA	GROUND ROD, AS PER PLAN	72
				2									630	79001	2	EA	SIGN HANGER ASSEMBLY, SPANWIRE, AS PER PLAN	72
				10									630	80100	10	SQ.FT.	SIGN, FLAT SHEET	
				3									630	87400	3	EA	REMOVAL OF OVERHEAD MOUNTED SIGN AND DISPOSAL	
				9									632	00301	9	EA	VEHICULAR SIGNAL HEAD, 3-SECTION, 12" LENS, 1-WAY, AS PER PLAN	73
				2									632	00501	2	EA	VEHICULAR SIGNAL HEAD, 5-SECTION, 12" LENS, 1-WAY, AS PER PLAN	73
				11									632	25001	11	EA	COVERING OF VEHICULAR SIGNAL HEAD, AS PER PLAN	73
				6									632	26500	6	EA	DETECTOR LOOP	
				13									632	26501	13	EA	DETECTOR LOOP, AS PER PLAN	74
				1									632	27009	1	EA	LOOP DETECTOR UNIT, DELAY AND EXTENSION TYPE, AS PER PLAN	73
				6									632	27201	6	EA	LOOP DETECTOR TIE-IN, AS PER PLAN	73
				339									632	40300	339	FT	SIGNAL CABLE, 3 CONDUCTOR, NO. 14 AWG	
				90									632	40500	90	FT	SIGNAL CABLE, 5 CONDUCTOR, NO. 14 AWG	
				27									632	65300	27	FT	LOOP DETECTOR LEAD-IN CABLE, 2 CONDUCTOR, NO. 14 AWG	
				11									632	90020	11	EA	REMOVAL OF MISCELLANEOUS TRAFFIC SIGNAL ITEM: VEHICULAR SIGNAL SIGNAL HEAD	
				3									632	90400	3	EA	SIGNALIZATION, MISC.: REMOVAL AND REINSTALLATION OF SIGN FLASHER INSTALLATION, AS PER PLAN	72
				407									632	90500	407	FT	SIGNALIZATION, MISC.: REMOVE AND REINSTALL LASHING RODS	73
				70									632	90500	70	FT	SIGNALIZATION, MISC.: REMOVE AND REINSTALL CABLE, AS PER PLAN	73
				1									633	99000	1	EA	CONTROLLER ITEM, MISC.: MODIFICATION OF CONTROLLER CABINET	73
80																	**MAINTENANCE OF TRAFFIC**	
2													614	11100	80	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR	
4													614	11500	2	MONTH	WORKSITE TRAFFIC SUPERVISOR	
30													614	12460	4	EACH	WORK ZONE MARKING SIGN	
													614	13000	30	CU YD	ASPHALT CONCRETE FOR MAINTANING TRAFFIC	
		2.37											614	20100	2.37	MILE	WORK ZONE LANE LINE, CLASS I, 642 PAINT	
		420											614	23200	420	FT	WORK ZONE CHANNELIZING LINE, CLASS I, 642 PAINT	
		216											614	26200	216	FT	WORK ZONE STOP LINE, CLASS I, 642 PAINT	
													614	11000	LUMP		MAINTAINING TRAFFIC	
													619	16010	2	MONTH	FIELD OFFICE, TYPE B	
													623	10000	LUMP		CONSTRUCTION LAYOUT STAKES	15
													624	10000	LUMP		MOBILIZATION	83

Revised 6-22-07

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GENERAL SUMMARY

WAY-21-5.74

6/22/2007 13:54

I:\projects\81797\roadway\sheets\[81797GG001.xls]General Summary (2)

ROADWAY SUB-SUMMARY

CALCD: MAS
CHECKED: SHD

REF. NO.	SHEET NO.	STATION FROM	STATION TO	SIDE	ITEM 201 CLEARING AND GRUBBING LUMP	202 CURB REMOVED FT	202 CATCH BASIN REMOVED EACH	202 PIPE REMOVED, 24" AND UNDER FT	202 REMOVAL MISC.: CONCRETE CATCH BASIN APRON EACH	252 FULL DEPTH PAVEMENT SAWING FT	606 GUARDRAIL, TYPE 5 FT	606 GUARDRAIL, BARRIER DESIGN, TYPE 5 FT	606 ANCHOR ASSEMBLY, TYPE E-98 EACH	606 ANCHOR ASSEMBLY, TYPE A EACH	606 ANCHOR ASSEMBLY, TYPE T EACH	606 BRIDGE TERMINAL ASSEMBLY, TYPE 1, BARRIER DESIGN EACH	606 IMPACT ATTENUATOR, TYPE 2-98 (BIDIRECTIONAL) (65 MPH / 28" WIDE) EACH	606 IMPACT ATTENUATOR, TYPE 1-98 (BIDIRECTIONAL) EACH	622 CONCRETE BARRIER END SECTION, TYPE B EACH	622 CONCRETE BARRIER, SINGLE SLOPE, TYPE C FT	626 BARRIER REFLECTOR, TYPE A EACH	626 BARRIER REFLECTOR, TYPE B EACH
R-1	31	311+43.61	311+66.89	RT		51																
R-2	31	311+42.13	311+62.02	LT		56																
R-3	31, 32	0+13.05	0+45.68	LT		78																
R-4	31	311+16.02	311+16.02	MED					1													
R-5	31	311+19	311+43	RT				50														
R-5	33	7+87.52	8+62.57	MED							12.5		1		1						2	
R-6	30, 31	306+83.30	307+71.00	MED								56.25				1		1			4	
R-7	31	310+80.00	311+06.50	MED													1					
R-8	32	0+73.47	1+00.00	MED													1					
R-9	32, 33	4+61.00	5+48.72	MED								56.25				1		1			4	
R-10	31	307+71.00	310+80.00	MED															2	249		8
R-11	32	1+00.00	4+61.00	MED															2	301		10
R-12	31	311+16.02		MED			1															
R-13	33	5+37.00	7+28.00	LT	LUMP																	
R-14	31	48+49.00	49+28.00	RT							75.0			1	1						3	
R-15	32	0+50.00	1+50.00	LT							37.5		1		1						2	
PS-1	30, 31	303+14.00	311+52.86	MED						840												
PS-2	31	307+71.00	311+52.86	MED						385												
PS-3	31	311+26.15	311+71.06	RT						103												
PS-4	31	310+94.15	311+64.27	LT						152												
PS-5	31, 32	0+08.96	0+53.32	LT						98												
PS-6	32	0+21.81	4+61.00	MED						445												
PS-7	32	0+21.81	9+16.00	MED						901												
TOTAL					**LUMP**	**185**	**1**	**50**	**1**	**2,924**	**125.0**	**112.5**	**2**	**1**	**3**	**2**	**2**	**2**	**4**	**550**	**15**	**18**

SR 21 NORTHBOUND

ITEM 254 PAVEMENT PLANING, ASPHALT CONCRETE (VARIABLE DEPTH)

	STATION	LENGTH	WIDTH (AVG.)	DEPTH (AVG.)	AREA (SQ. YD.)
	303+14.00	36	28.0	2.75	112
	303+50.00	50	28.0	2.75	156
	304+00.00	50	28.0	2.25	154
	304+50.00	50	27.5	2.00	151
	305+00.00	50	27.0	1.75	150
	305+50.00	50	27.0	2.00	147
	306+00.00	50	26.0	2.50	151
	306+50.00	50	28.5	2.25	157
	307+00.00	50	28.0	2.50	136
	307+50.00	50	21.0	2.00	138
	308+00.00	50	28.5	2.25	183
	308+50.00	50	37.5	3.50	228
	309+00.00	50	44.5	3.00	235
	309+50.00	50	40.0	3.00	222
	310+00.00	50	40.0	2.25	228
	310+50.00	50	42.0	3.00	268
	311+00.00	50	54.5	3.25	275
	311+50.00		44.5	4.00	
MEDIAN AREA	311+50.00	50	50.0	1.75	278
	INTERSECTION - SEE CR150 QUANTITIES				
	0+50.00	50	45.0	3.75	236
	1+00.00	50	40.0	3.25	213
	1+50.00	50	36.5	2.75	193
	2+00.00	50	33.0	3.25	181
	2+50.00	50	32.0	2.50	178
	3+00.00	50	32.0	2.50	178
	3+50.00	50	32.0	2.25	178
	4+00.00	50	32.0	2.25	178
	4+50.00	11	32.0	2.25	39
	4+61.00		32.0	2.25	
				TOTAL	4,941.39

ITEM 442 ASPHALT CONCRETE SURFACE COURSE, 12.5MM, TYPE A (446)

	STATION	LENGTH	WIDTH (AVG.)	DEPTH (AVG.)	AREA (SQ. YD.)	VOLUME (CU. YD.)
	303+14.00	36	32.0	1.50	153	6
	303+50.00	14	44.6	1.50	72	3
	303+64.00	36	48.0	1.50	192	8
	304+00.00	50	48.0	1.50	267	11
	304+50.00	50	48.0	1.50	267	11
	305+00.00	50	48.0	1.50	267	11
	305+50.00	50	48.0	1.50	267	11
	306+00.00	50	48.0	1.50	267	11
	306+50.00	9	48.0	1.50	48	2
	306+59.00	41	48.0	1.50	221	9
	307+00.00	50	49.0	1.50	301	13
	307+50.00	50	59.4	1.50	361	15
	308+00.00	27	70.5	1.50	214	9
	308+27.00	23	72.3	1.50	186	8
	308+50.00	50	73.5	1.50	416	17
	309+00.00	50	76.2	1.50	429	18
	309+50.00	50	78.4	1.50	439	18
	310+00.00	50	79.7	1.50	444	18
	310+50.00	50	80.1	1.50	444	18
	311+00.00	50	79.7	1.50	383	16
	311+50.00		58.1	1.50		
MEDIAN AREA	311+50.00	50	58.1	1.50	323	13
	INTERSECTION - SEE CR150 QUANTITIES					
	0+50.00	50	59.4	1.50	285	12
	1+00.00	50	43.1	1.50	238	10
	1+50.00	50	42.5	1.50	236	10
	2+00.00	50	42.5	1.50	236	10
	2+50.00	50	42.5	1.50	236	10
	3+00.00	50	42.5	1.50	236	10
	3+50.00	50	42.5	1.50	236	10
	4+00.00	50	42.5	1.50	236	10
	4+50.00	11	42.5	1.50	52	2
	4+61.00		42.5	1.50		
				TOTAL	7,951	331

ITEM 304 AGGREGATE BASE

STATION	LENGTH	WIDTH (AVG.)	DEPTH (AVG.)	AREA (SQ. YD.)	VOLUME (CU. YD.)
303+14.00	36	4.75	6.00	37	6
303+50.00	14	13.75	6.00	24	4
303+64.00	36	17.08	6.00	68	11
304+00.00	50	17.08	6.00	95	16
304+50.00	50	17.08	6.00	95	16
305+00.00	50	17.08	6.00	95	16
305+50.00	50	17.08	6.00	95	16
306+00.00	50	17.08	6.00	95	16
306+50.00	9	17.08	6.00	17	3
306+59.00	41	17.08	6.00	89	15
307+00.00	50	22.21	6.00	141	23
307+50.00	21	28.46	6.00	76	13
307+71.00	29	37.00	6.00	119	20
308+00.00	27	37.00	6.00	107	18
308+27.00	23	34.61	6.00	87	14
308+50.00	50	33.46	6.00	179	30
309+00.00	50	30.96	6.00	165	28
309+50.00	50	28.44	6.00	151	25
310+00.00	50	25.94	6.00	141	24
310+50.00	50	24.99	6.00	145	24
311+00.00	50	27.19	6.00	101	17
311+50.00		9.02	6.00		
INTERSECTION - NO ITEM 304 QUANTITIES					
0+50.00	50	9.75	6.00	58	10
1+00.00	50	11.00	6.00	61	10
1+50.00	50	11.00	6.00	61	10
2+00.00	50	11.00	6.00	61	10
2+50.00	50	11.00	6.00	61	10
3+00.00	50	11.00	6.00	61	10
3+50.00	50	11.00	6.00	61	10
4+00.00	50	11.00	6.00	61	10
4+50.00	11	11.00	6.00	13	2
4+61.00		11.00	6.00		
			TOTAL	2,622	437

ITEM 442 ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM, TYPE A (448)

	STATION	LENGTH	WIDTH (AVG.)	DEPTH (AVG.)	AREA (SQ. YD.)	VOLUME (CU. YD.)
	303+14.00	36	32.0	1.75	153	7
	303+50.00	14	44.6	1.75	72	4
	303+64.00	36	48.0	1.75	192	9
	304+00.00	50	48.0	1.75	267	13
	304+50.00	50	48.0	1.75	267	13
	305+00.00	50	48.0	1.75	267	13
	305+50.00	50	48.0	1.75	267	13
	306+00.00	50	48.0	1.75	267	13
	306+50.00	9	48.0	1.75	48	2
	306+59.00	41	48.0	1.75	221	11
	307+00.00	50	49.0	1.75	301	15
	307+50.00	50	59.4	1.75	361	18
	308+00.00	27	70.5	1.75	214	10
	308+27.00	23	72.3	1.75	186	9
	308+50.00	50	73.5	1.75	416	20
	309+00.00	50	76.2	1.75	429	21
	309+50.00	50	78.4	1.75	439	21
	310+00.00	50	79.7	1.75	444	22
	310+50.00	50	80.1	1.75	444	22
	311+00.00	50	79.7	1.75	383	19
	311+50.00		58.1	1.75		
MEDIAN AREA	311+50.00	50	58.1	1.75	323	16
	INTERSECTION - SEE CR150 QUANTITIES					
	0+50.00	50	59.4	1.75	285	14
	1+00.00	50	43.1	1.75	238	12
	1+50.00	50	42.5	1.75	236	11
	2+00.00	50	42.5	1.75	236	11
	2+50.00	50	42.5	1.75	236	11
	3+00.00	50	42.5	1.75	236	11
	3+50.00	50	42.5	1.75	236	11
	4+00.00	50	42.5	1.75	236	11
	4+50.00	11	42.5	1.75	52	3
	4+61.00		42.5	1.75		
				TOTAL	7,951	386

ITEM 204 SUBGRADE COMPACTION

STATION	LENGTH	WIDTH (AVG.)	AREA (SQ. YD.)
303+14.00	36	4.9	38
303+50.00	14	13.92	24
303+64.00	36	17.25	69
304+00.00	50	17.25	96
304+50.00	50	17.25	96
305+00.00	50	17.25	96
305+50.00	50	17.25	96
306+00.00	50	17.25	96
306+50.00	9	17.25	17
306+59.00	41	17.25	90
307+00.00	50	22.38	142
307+50.00	21	28.63	77
307+71.00	29	37.00	119
308+00.00	27	37.00	107
308+27.00	23	34.61	87
308+50.00	50	33.46	179
309+00.00	50	30.96	165
309+50.00	50	28.44	151
310+00.00	50	25.94	141
310+50.00	50	24.99	145
311+00.00	50	27.19	101
311+50.00		9.02	
INTERSECTION - NO ITEM 204 QUANTITIES			
0+50.00	50	9.8	58
1+00.00	50	11.0	61
1+50.00	50	11.0	61
2+00.00	50	11.0	61
2+50.00	50	11.0	61
3+00.00	50	11.0	61
3+50.00	50	11.0	61
4+00.00	50	11.0	61
4+50.00	11	11.0	13
4+61.00		11.0	
			2,630

ITEM 301 ASPHALT CONCRETE BASE, PG64-22, AS PER PLAN

STATION	LENGTH	* WIDTH (AVG.)	DEPTH (AVG.)	AREA (SQ. YD.)	VOLUME (CU. YD.)
303+14.00	36	4.25	8.00	35	8
303+50.00	14	13.25	8.00	23	5
303+64.00	36	16.58	8.00	66	15
304+00.00	50	16.58	8.00	92	20
304+50.00	50	16.58	8.00	92	20
305+00.00	50	16.58	8.00	92	20
305+50.00	50	16.58	8.00	92	20
306+00.00	50	16.58	8.00	92	20
306+50.00	9	16.58	8.00	17	4
306+59.00	41	16.58	8.00	87	19
307+00.00	50	21.71	8.00	138	31
307+50.00	21	27.96	8.00	76	17
307+71.00	29	37.00	8.00	119	26
308+00.00	27	37.00	8.00	107	24
308+27.00	23	34.61	8.00	87	19
308+50.00	50	33.46	8.00	179	40
309+00.00	50	30.96	8.00	165	37
309+50.00	50	28.44	8.00	151	34
310+00.00	50	25.94	8.00	141	31
310+50.00	50	24.99	8.00	145	32
311+00.00	50	27.19	8.00	101	22
311+50.00		9.02	8.00		
INTERSECTION - NO ITEM 301 QUANTITIES					
0+50.00	50	9.25	8.00	55	12
1+00.00	50	10.50	8.00	58	13
1+50.00	50	10.50	8.00	58	13
2+00.00	50	10.50	8.00	58	13
2+50.00	50	10.50	8.00	58	13
3+00.00	50	10.50	8.00	58	13
3+50.00	50	10.50	8.00	58	13
4+00.00	50	10.50	8.00	58	13
4+50.00	11	10.50	8.00	13	3
4+61.00		10.50	8.00		
			TOTAL	2,574	572

* ITEM 301 WIDTH AVERAGES INCLUDE AVG WIDTH OF TWO LIFTS DUE TO STEPPED CONSTRUCTION

CALC'D M.J.S. CHECKED BAD

SR 21 NORTHBOUND CALCULATIONS

WAY-21-5.74

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SR 21 NORTHBOUND

ITEM 254 PATCHING PLANED SURFACE

	STATION	LENGTH	WIDTH (AVG.)	AREA (SQ. YD.)	PATCHING AREA (SQ.YD.)
	303+14.00	36	28.0	112	1
	303+50.00	50	28.0	156	2
	304+00.00	50	28.0	154	2
	304+50.00	50	27.5	151	2
	305+00.00	50	27.0	150	2
	305+50.00	50	27.0	147	1
	306+00.00	50	26.0	151	2
	306+50.00	50	28.5	157	2
	307+00.00	50	28.0	136	1
	307+50.00	50	21.0	138	1
	308+00.00	50	28.5	183	2
	308+50.00	50	37.5	228	2
	309+00.00	50	44.5	235	2
	309+50.00	50	40.0	222	2
	310+00.00	50	40.0	228	2
	310+50.00	50	42.0	268	3
	311+00.00	50	54.5	275	3
	311+50.00		44.5		
MEDIAN AREA	311+50.00	50	50.0	278	3
	INTERSECTION - SEE CR150 QUANTITIES				
	0+50.00	50	45.0	236	2
	1+00.00	50	40.0	213	2
	1+50.00	50	36.5	193	2
	2+00.00	50	33.0	181	2
	2+50.00	50	32.0	178	2
	3+00.00	50	32.0	178	2
	3+50.00	50	32.0	178	2
	4+00.00	50	32.0	178	2
	4+50.00	11	32.0	39	0
	4+61.00		32.0		
			TOTAL	4,941	49

ITEM 617 COMPACTED AGGREGATE, AS PER PLAN (1.5" THICK)

	STATION	LENGTH	WIDTH (AVG.)	AREA (SQ. YD.)	VOLUME (CU. YD.)
OUTSIDE SHOULDER	303+14.00 311+50.00	836	1.50	139	6
INSIDE SHOULDER	303+14.00 307+71.00	457	1.50	76	3
	0+50.00 4+61.00	411	1.50	69	3
			TOTAL	284	12

ITEM 408 PRIME COAT

284 SQ. YD. X 0.40 GAL./ SQ. YD. = 114 GALLONS

ITEM SPECIAL REINFORCED MESH FOR TRANSVERSE AND/OR LONGITUDINAL JOINTS AND CRACKS

FROM STATION	TO STATION	LENGTH (FT)	WIDTH (FT)	AREA (SQ. YD.)
303+14.00	311+52.86	840	2.5	233
0+21.81	4+61.00	455	2.5	126
				360

ITEM 204 PROOF ROLLING

$$\frac{\text{SUBGRADE COMPACTION AREA SQ. YD} = 2630}{\text{2000 SQ. YD/HR}} = 1.3 \text{ HRS}$$

ITEM 407 TACK COAT

TACK COAT BETWEEN ITEM 301 LAYERS @ 0.04 GAL/ SQ. YD.
2574 SQ. YD. X 0.04 GAL./ SQ. YD. = 103 GALLONS

TACK COAT BETWEEN ITEM 301 AND INTERMEDIATE COURSE @ 0.04 GAL/ SQ. YD.
7951 SQ. YD. X 0.04 GAL./ SQ. YD. = 318 GALLONS

ITEM 407 TACK COAT FOR INTERMEDIATE COURSE

TACK COAT BETWEEN INTERMEDIATE & SURFACE COURSE @ 0.04 GAL/ SQ. YD.
7951 SQ. YD. X 0.04 GAL./ SQ. YD. = 318 GALLONS

CALCD MJS CHECKED BAD

SR 21 NORTHBOUND CALCULATIONS

WAY-21-5.74

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SR 21 SOUTHBOUND

ITEM 254 PAVEMENT PLANING, ASPHALT CONCRETE (VARIABLE DEPTH)

STATION	LENGTH	WIDTH (AVG.)	DEPTH (AVG.)	AREA (SQ. YD.)
293+00.00	50	27.0	3.25	150
293+50.00	50	27.0	3.25	150
294+00.00	50	27.0	3.25	150
294+50.00	50	27.0	3.25	150
295+00.00	50	27.0	3.25	150
295+50.00	50	27.0	3.25	150
296+00.00	50	27.0	3.25	150
296+50.00	50	27.0	3.25	150
297+00.00	50	27.0	3.25	150
297+50.00	50	27.0	3.25	150
298+00.00	50	27.0	3.25	150
298+50.00	50	27.0	3.25	150
299+00.00	50	27.0	3.25	150
299+50.00	50	27.0	3.25	150
300+00.00	50	27.0	3.25	150
300+50.00	50	27.0	3.25	150
301+00.00	50	27.0	3.25	150
301+50.00	50	27.0	3.25	150
302+00.00	50	27.0	3.25	150
302+50.00	50	27.0	3.25	150
303+00.00	50	27.0	3.25	192
303+50.00	50	42.0	3.50	233
304+00.00	50	42.0	3.50	233
304+50.00	50	42.0	4.00	233
305+00.00	50	42.0	4.25	233
305+50.00	50	42.0	4.25	233
306+00.00	50	42.0	3.75	233
306+50.00	50	42.0	4.00	233
307+00.00	50	42.0	2.75	233
307+50.00	50	42.0	2.50	225
308+00.00	50	39.0	2.25	192
308+50.00	50	30.0	3.00	181
309+00.00	50	35.0	3.25	194
309+50.00	50	35.0	3.25	181
310+00.00	50	30.0	2.50	186
310+50.00	50	37.0	2.00	169
311+00.00	50	24.0	1.75	194
311+50.00		46.0	0.00	
INTERSECTION - SEE CR150 QUANTITIES				
0+50.00	50	54.0	0.00	300
1+00.00	50	54.0	0.00	206
1+50.00	50	20.0	0.50	206
2+00.00	50	54.0	3.00	300
2+50.00	50	54.0	3.00	297
3+00.00	50	53.0	2.50	319
3+50.00	50	62.0	3.00	253
4+00.00	50	29.0	1.75	172
4+50.00	50	33.0	1.75	183
5+00.00	50	33.0	1.75	183
5+50.00	50	33.0	3.25	183
6+00.00	50	33.0	4.00	183
6+50.00	50	33.0	3.50	183
7+00.00	50	33.0	3.00	186
7+50.00	50	34.0	2.00	189
8+00.00	50	34.0	2.00	189
8+50.00	50	34.0	2.75	192
9+00.00	16	35.0	3.00	62
9+16.00		35.0	3.25	
			TOTAL	10,368

ITEM 442 ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM, TYPE A (448)

STATION	LENGTH	WIDTH (AVG.)	DEPTH (AVG.)	AREA (SQ. YD.)	VOLUME (CU. YD.)
293+00.00	50	35.0	1.75	196	10
293+50.00	50	35.6	1.75	199	10
294+00.00	50	36.2	1.75	203	10
294+50.00	50	36.8	1.75	206	10
295+00.00	50	37.3	1.75	209	10
295+50.00	50	37.9	1.75	212	10
296+00.00	50	38.5	1.75	216	10
296+50.00	50	39.1	1.75	219	11
297+00.00	50	39.7	1.75	222	11
297+50.00	50	40.3	1.75	225	11
298+00.00	50	40.8	1.75	228	11
298+50.00	50	41.4	1.75	232	11
299+00.00	50	42.0	1.75	233	11
299+50.00	50	42.0	1.75	233	11
300+00.00	50	42.0	1.75	233	11
300+50.00	50	42.0	1.75	233	11
301+00.00	50	42.0	1.75	233	11
301+50.00	50	42.0	1.75	233	11
302+00.00	50	42.0	1.75	233	11
302+50.00	50	42.0	1.75	233	11
303+00.00	50	42.0	1.75	233	11
303+50.00	50	42.0	1.75	233	11
304+00.00	50	42.0	1.75	233	11
304+50.00	50	42.0	1.75	233	11
305+00.00	50	42.0	1.75	233	11
305+50.00	50	42.0	1.75	233	11
306+00.00	50	42.0	1.75	233	11
306+50.00	50	42.0	1.75	233	11
307+00.00	50	42.0	1.75	233	11
307+50.00	50	42.0	1.75	261	13
308+00.00	50	52.0	1.75	289	14
308+50.00	50	52.0	1.75	289	14
309+00.00	50	52.0	1.75	289	14
309+50.00	50	52.0	1.75	289	14
310+00.00	50	52.0	2.00	289	16
310+50.00	50	52.0	2.00	296	16
311+00.00	50	54.7	2.75	320	24
311+50.00		60.5	3.50		
INTERSECTION - SEE CR150 QUANTITIES					
0+50.00	50	75.1	4.00	436	48
1+00.00	50	81.9	2.75	457	35
1+50.00	50	82.6	2.25	459	29
2+00.00	50	82.8	1.75	464	23
2+50.00	50	84.1	1.75	478	23
3+00.00	50	88.0	1.75	521	25
3+50.00	50	99.6	1.75	477	23
4+00.00	50	72.0	1.75	401	19
4+50.00	11	72.2	1.75	88	4
4+61.00	39	72.2	1.75	282	14
5+00.00	50	57.8	1.75	305	15
5+50.00	21	52.0	1.75	118	6
5+71.00	29	49.5	1.75	160	8
6+00.00	50	49.6	1.75	276	13
6+50.00	50	49.8	1.75	276	13
7+00.00	50	49.7	1.75	277	13
7+50.00	50	49.9	1.75	278	14
8+00.00	50	50.1	1.75	279	14
8+50.00	16	50.5	1.75	90	4
8+66.00	34	50.6	1.75	177	9
9+00.00	16	42.9	1.75	73	4
9+16.00		39.3	1.75		
			TOTAL	15,227	799

ITEM 442 ASPHALT CONCRETE SURFACE COURSE, 12.5MM, TYPE A (446)

STATION	LENGTH	WIDTH (AVG.)	DEPTH (AVG.)	AREA (SQ. YD.)	VOLUME (CU. YD.)
293+00.00	50	35.0	1.50	196	8
293+50.00	50	35.6	1.50	199	8
294+00.00	50	36.2	1.50	203	8
294+50.00	50	36.8	1.50	206	9
295+00.00	50	37.3	1.50	209	9
295+50.00	50	37.9	1.50	212	9
296+00.00	50	38.5	1.50	216	9
296+50.00	50	39.1	1.50	219	9
297+00.00	50	39.7	1.50	222	9
297+50.00	50	40.3	1.50	225	9
298+00.00	50	40.8	1.50	228	10
298+50.00	50	41.4	1.50	232	10
299+00.00	50	42.0	1.50	233	10
299+50.00	50	42.0	1.50	233	10
300+00.00	50	42.0	1.50	233	10
300+50.00	50	42.0	1.50	233	10
301+00.00	50	42.0	1.50	233	10
301+50.00	50	42.0	1.50	233	10
302+00.00	50	42.0	1.50	233	10
302+50.00	50	42.0	1.50	233	10
303+00.00	50	42.0	1.50	233	10
303+50.00	50	42.0	1.50	233	10
304+00.00	50	42.0	1.50	233	10
304+50.00	50	42.0	1.50	233	10
305+00.00	50	42.0	1.50	233	10
305+50.00	50	42.0	1.50	233	10
306+00.00	50	42.0	1.50	233	10
306+50.00	50	42.0	1.50	233	10
307+00.00	50	42.0	1.50	233	10
307+50.00	50	42.0	1.50	261	11
308+00.00	50	52.0	1.50	289	12
308+50.00	50	52.0	1.50	289	12
309+00.00	50	52.0	1.50	289	12
309+50.00	50	52.0	1.50	289	12
310+00.00	50	52.0	1.50	289	12
310+50.00	50	52.0	1.50	296	12
311+00.00	50	54.7	1.50	320	13
311+50.00		60.5	1.50		
INTERSECTION - SEE CR150 QUANTITIES					
0+50.00	50	75.1	1.50	436	18
1+00.00	50	81.9	1.50	457	19
1+50.00	50	82.6	1.50	459	19
2+00.00	50	82.8	1.50	464	19
2+50.00	50	84.1	1.50	478	20
3+00.00	50	88.0	1.50	521	22
3+50.00	50	99.6	1.50	477	20
4+00.00	50	72.0	1.50	401	17
4+50.00	11	72.2	1.50	88	4
4+61.00	39	72.2	1.50	282	12
5+00.00	50	57.8	1.50	305	13
5+50.00	21	52.0	1.50	118	5
5+71.00	29	49.5	1.50	160	7
6+00.00	50	49.6	1.50	276	12
6+50.00	50	49.8	1.50	276	12
7+00.00	50	49.7	1.50	277	12
7+50.00	50	49.9	1.50	278	12
8+00.00	50	50.1	1.50	279	12
8+50.00	16	50.5	1.50	90	4
8+66.00	34	50.6	1.50	177	7
9+00.00	16	42.9	1.50	73	3
9+16.00		39.3	1.50		
			TOTAL	15,227	634

CALC'D | MJS
CHECKED | BAD

SR 21 SOUTHBOUND CALCULATIONS

WAY-21-5.74

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83

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SR 21 SOUTHBOUND

CALC'D MJS CHECKED BAD

SOUTHBOUND CALCULATIONS

ITEM 204 SUBGRADE COMPACTION

STATION	LENGTH	WIDTH (AVG.)	AREA (SQ. YD.)
293+00.00	50	9.25	51
293+50.00	50	9.25	55
294+00.00	50	10.45	60
294+50.00	50	11.05	63
295+00.00	50	11.55	66
295+50.00	50	12.15	69
296+00.00	50	12.75	73
296+50.00	50	13.35	76
297+00.00	50	13.95	79
297+50.00	50	14.55	82
298+00.00	50	15.05	85
298+50.00	50	15.65	89
299+00.00	50	16.25	90
299+50.00	50	16.25	90
300+00.00	50	16.25	90
300+50.00	50	16.25	90
301+00.00	50	16.25	90
301+50.00	50	16.25	90
302+00.00	50	16.25	90
302+50.00	50	16.25	90
303+00.00		16.25	
307+71.00	29	13.00	42
308+00.00	50	13.00	72
308+50.00	50	13.00	72
309+00.00	50	13.00	72
309+50.00	50	13.00	62
310+00.00	50	9.29	41
310+50.00	50	5.64	16
311+00.00	50	0.00	
311+50.00		0.00	
INTERSECTION - NO ITEM 204 QUANTITIES			
0+25.00	25	11.74	48
0+50.00	50	22.80	140
1+00.00	50	27.50	153
1+50.00	50	27.50	157
2+00.00	50	29.17	170
2+50.00	50	31.96	186
3+00.00	50	35.02	200
3+50.00	50	37.05	213
4+00.00	50	39.50	219
4+50.00	11	39.50	48
4+61.00	39	39.50	142
5+00.00	50	26.13	128
5+50.00	21	19.88	43
5+71.00	29	17.25	56
6+00.00	50	17.25	96
6+50.00	50	17.25	96
7+00.00	50	17.25	96
7+50.00	50	17.25	96
8+00.00	50	17.25	96
8+50.00	16	17.25	31
8+66.00	34	17.25	50
9+00.00	16	9.09	13
9+16.00		5.25	
		TOTAL	4,423

ITEM 304 AGGREGATE BASE

STATION	LENGTH	WIDTH (AVG.)	DEPTH (AVG.)	AREA (SQ. YD.)	VOLUME (CU. YD.)
293+00.00	50	9.08	6.00	50	8
293+50.00	50	9.68	6.00	54	9
294+00.00	50	10.28	6.00	57	10
294+50.00	50	10.88	6.00	60	10
295+00.00	50	11.38	6.00	63	11
295+50.00	50	11.98	6.00	67	11
296+00.00	50	12.58	6.00	70	12
296+50.00	50	13.18	6.00	73	12
297+00.00	50	13.78	6.00	77	13
297+50.00	50	14.38	6.00	80	13
298+00.00	50	14.88	6.00	83	14
298+50.00	50	15.48	6.00	86	14
299+00.00	50	16.08	6.00	89	15
299+50.00	50	16.08	6.00	89	15
300+00.00	50	16.08	6.00	89	15
300+50.00	50	16.08	6.00	89	15
301+00.00	50	16.08	6.00	89	15
301+50.00	50	16.08	6.00	89	15
302+00.00	50	16.08	6.00	89	15
302+50.00	50	16.08	6.00	45	7
303+00.00		16.08	6.00		
307+71.00	29	13.00	6.00	57	10
308+00.00	50	13.00	6.00	72	12
308+50.00	50	13.00	6.00	72	12
309+00.00	50	13.00	6.00	72	12
309+50.00	50	13.00	6.00	72	12
310+00.00	50	9.29	6.00	52	9
310+50.00	50	5.64	6.00	16	3
311+00.00		0.00	0.00		
311+50.00		0.00	0.00		
INTERSECTION - SEE CR150 QUANTITIES					
0+25.00	25	11.74	6.00	49	8
0+50.00	50	22.80	6.00	127	21
1+00.00	50	27.50	6.00	153	25
1+50.00	50	27.50	6.00	153	25
2+00.00	50	29.17	6.00	162	27
2+50.00	50	31.96	6.00	178	30
3+00.00	50	35.02	6.00	195	32
3+50.00	50	37.05	6.00	206	34
4+00.00	50	39.50	6.00	134	22
4+50.00	11	39.50	6.00	110	18
4+61.00	39	39.50	6.00	195	33
5+00.00	50	25.96	6.00	102	17
5+50.00	21	19.71	6.00	55	9
5+71.00	29	17.08	6.00	75	12
6+00.00	50	17.08	6.00	95	16
6+50.00	50	17.08	6.00	95	16
7+00.00	50	17.08	6.00	95	16
7+50.00	50	17.08	6.00	95	16
8+00.00	50	17.08	6.00	63	10
8+50.00	16	17.08	6.00	47	8
8+66.00	34	17.08	6.00	47	8
9+00.00	16	8.92	6.00	8	1
9+16.00		5.08	6.00		
				TOTAL	723

ITEM 301 ASPHALT CONCRETE BASE, PG64-22, AS PER PLAN

STATION	LENGTH	* WIDTH (AVG.)	DEPTH (AVG.)	AREA (SQ. YD.)	VOLUME (CU. YD.)
293+00.00	50	8.58	8.00	49	11
293+50.00	50	9.18	8.00	53	12
294+00.00	50	9.78	8.00	56	12
294+50.00	50	10.38	8.00	58	13
295+00.00	50	10.38	8.00	61	13
295+50.00	50	11.48	8.00	65	15
296+00.00	50	12.08	8.00	69	15
296+50.00	50	12.68	8.00	72	16
297+00.00	50	13.28	8.00	75	17
297+50.00	50	13.88	8.00	79	17
298+00.00	50	14.38	8.00	82	18
298+50.00	50	14.98	8.00	85	19
299+00.00	50	15.58	8.00	87	19
299+50.00	50	15.58	8.00	87	19
300+00.00	50	15.58	8.00	87	19
300+50.00	50	15.58	8.00	87	19
301+00.00	50	15.58	8.00	87	19
301+50.00	50	15.58	8.00	87	19
302+00.00	50	15.58	8.00	87	19
302+50.00	50	15.58	8.00	87	19
303+00.00		15.58	8.00		
307+71.00	29	13.00	8.00	42	9
308+00.00	50	13.00	8.00	72	16
308+50.00	50	13.00	8.00	72	16
309+00.00	50	13.00	8.00	72	16
309+50.00	50	13.00	8.00	62	14
310+00.00	50	9.29	8.00	41	9
310+50.00	50	5.64	8.00	16	3
311+00.00	50	0.00	0.00		
311+50.00	50	0.00	0.00		
INTERSECTION - SEE CR150 QUANTITIES					
0+25.00	25	11.74	8.00	48	11
0+50.00	50	22.80	8.00	140	31
1+00.00	50	27.50	8.00	153	34
1+50.00	50	27.50	8.00	157	35
2+00.00	50	29.17	8.00	170	38
2+50.00	50	31.96	8.00	186	41
3+00.00	50	35.02	8.00	200	44
3+50.00	50	37.05	8.00	213	47
4+00.00	50	39.50	8.00	219	49
4+50.00	11	39.50	8.00	48	11
4+61.00	39	39.50	8.00	141	31
5+00.00	50	25.46	8.00	124	28
5+50.00	21	19.21	8.00	42	9
5+71.00	29	16.58	8.00	53	12
6+00.00	50	16.58	8.00	92	20
6+50.00	50	16.58	8.00	92	20
7+00.00	50	16.58	8.00	92	20
7+50.00	50	16.58	8.00	92	20
8+00.00	50	16.58	8.00	92	20
8+50.00	16	16.58	8.00	29	7
8+66.00	34	16.58	8.00	47	10
9+00.00	16	8.42	8.00	12	3
9+16.00		4.58	8.00		
			TOTAL	4,316	959

* ITEM 301 WIDTH AVERAGES INCLUDE AVG WIDTH OF TWO LIFTS DUE TO STEPPED CONSTRUCTION

6/1/2007 7:26

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WAY-21-5.74

SR 21 SOUTHBOUND

CALC'D MJS CHECKED BAD

6/1/2007 7:26

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ITEM 254 PATCHING PLANED SURFACE

STATION	LENGTH	WIDTH (AVG.)	AREA (SQ. YD.)	PATCHING AREA (SQ.YD.)
293+00.00	50	27.0	150	2
293+50.00	50	27.0	150	2
294+00.00	50	27.0	150	2
294+50.00	50	27.0	150	2
295+00.00	50	27.0	150	2
295+50.00	50	27.0	150	2
296+00.00	50	27.0	150	2
296+50.00	50	27.0	150	2
297+00.00	50	27.0	150	2
297+50.00	50	27.0	150	2
298+00.00	50	27.0	150	2
298+50.00	50	27.0	150	2
299+00.00	50	27.0	150	2
299+50.00	50	27.0	150	2
300+00.00	50	27.0	150	2
300+50.00	50	27.0	150	2
301+00.00	50	27.0	150	2
301+50.00	50	27.0	150	2
302+00.00	50	27.0	150	2
302+50.00	50	27.0	150	2
303+00.00	50	27.0	192	2
303+50.00	50	42.0	233	2
304+00.00	50	42.0	233	2
304+50.00	50	42.0	233	2
305+00.00	50	42.0	233	2
305+50.00	50	42.0	233	2
306+00.00	50	42.0	233	2
306+50.00	50	42.0	233	2
307+00.00	50	42.0	233	2
307+50.00	50	42.0	225	2
308+00.00	50	39.0	192	2
308+50.00	50	30.0	181	2
309+00.00	50	35.0	194	2
309+50.00	50	35.0	181	2
310+00.00	50	30.0	186	2
310+50.00	50	37.0	169	2
311+00.00	50	24.0	194	2
311+50.00		46.0		
INTERSECTION - SEE CR150 QUANTITIES				
0+50.00	50	54.0	300	3
1+00.00	50	54.0	206	2
1+50.00	50	20.0	206	2
2+00.00	50	54.0	300	3
2+50.00	50	54.0	297	3
3+00.00	50	53.0	319	3
3+50.00	50	62.0	253	3
4+00.00	50	29.0	172	2
4+50.00	50	33.0	183	2
5+00.00	50	33.0	183	2
5+50.00	50	33.0	183	2
6+00.00	50	33.0	183	2
6+50.00	50	33.0	183	2
7+00.00	50	33.0	186	2
7+50.00	50	34.0	189	2
8+00.00	50	34.0	189	2
8+50.00	50	34.0	192	2
9+00.00	16	35.0	62	1
9+16.00		35.0		
		TOTAL	10,368	104

ITEM 407 TACK COAT

TACK COAT BETWEEN ITEM 301 LAYERS @ 0.04 GAL/ SQ. YD.
4316 SQ. YD. X 0.04 GAL./ SQ. YD. = 173 GALLONS

TACK COAT BETWEEN ITEM 301 AND INTERMEDIATE COURSE @ 0.04 GAL/ SQ. YD.
15227 SQ. YD. X 0.04 GAL./ SQ. YD. = 609 GALLONS

ITEM 407 TACK COAT FOR INTERMEDIATE COURSE

TACK COAT BETWEEN INTERMEDIATE & SURFACE COURSE @ 0.04 GAL/ SQ. YD.
15227 SQ. YD. X 0.04 GAL./ SQ. YD. = 609 GALLONS

ITEM SPECIAL REINFORCED MESH FOR TRANSVERSE AND/OR LONGITUDINAL JOINTS AND CRACKS

FROM STATION	TO STATION	LENGTH (FT)	WIDTH (FT)	AREA (SQ. YD.)
307+71.00	311+52.86	385	2.5	107
0+21.81	9+16.00	901	2.5	250
				357

ITEM 204 PROOF ROLLING

SUBGRADE COMPACTION AREA SQ. YD = 4423 / 2000 SQ. YD/HR = 2.2 HRS

ITEM 659 SEEDING AND MULCHING

THIS IS AN ESTIMATED QUANTITY FOR THE MERGE LANE BEYOND THE LIMITS OF OUR CROSS SECTION SHEETS.

STATION	LENGTH	WIDTH (AVG.)	AREA (SQ. YD.)
293+00.00	50	7	38.9
293+50.00	50	7	38.9
294+00.00	50	7	38.9
294+50.00	50	7	41.7
295+00.00	50	8	47.2
295+50.00	50	9	52.8
296+00.00	50	10	58.3
296+50.00	50	11	63.9
297+00.00	50	12	69.4
297+50.00	50	13	75.0
298+00.00	50	14	80.6
298+50.00	50	15	86.1
299+00.00	50	16	88.9
299+50.00	50	16	88.9
300+00.00		16	
		TOTAL	869

ITEM 408 PRIME COAT

773 SQ. YD. X 0.40 GAL./ SQ. YD. = 309 GALLONS

ITEM 203 EXCAVATION

THIS IS AN ESTIMATED QUANTITY FOR THE MERGE LANE BEYOND THE LIMITS OF OUR CROSS SECTION SHEETS.

STATION	LENGTH	WIDTH (AVG.)	AREA (SQ. YD.)	DEPTH (FT.)	VOLUME (CU. YD.)
293+00.00	50	9.08	52.1	1.44	25
293+50.00	50	9.68	55.4	1.44	27
294+00.00	50	10.28	58.8	1.44	28
294+50.00	50	10.88	61.8	1.44	30
295+00.00	50	11.38	64.9	1.44	31
295+50.00	50	11.98	68.2	1.44	33
296+00.00	50	12.58	71.6	1.44	34
296+50.00	50	13.18	74.9	1.44	36
297+00.00	50	13.78	78.2	1.44	38
297+50.00	50	14.38	81.3	1.44	39
298+00.00	50	14.88	84.3	1.44	40
298+50.00	50	15.48	87.7	1.44	42
299+00.00	50	16.08	89.3	1.44	43
299+50.00	50	16.08	89.3	1.44	43
300+00.00		16.08			
				TOTAL	489

ITEM 203 EMBANKMENT

THIS IS AN ESTIMATED QUANTITY FOR THE MERGE LANE BEYOND THE LIMITS OF OUR CROSS SECTION SHEETS.

STATION	VOLUME
293+00.00	2
293+50.00	2
294+00.00	2
294+50.00	2
295+00.00	2
295+50.00	2
296+00.00	2
296+50.00	2
297+00.00	2
297+50.00	2
298+00.00	2
298+50.00	2
299+00.00	2
299+50.00	2
300+00.00	
TOTAL	28

ITEM 617 COMPACTED AGGREGATE, AS PER PLAN (1.5" THICK)

STATION		LENGTH	WIDTH (AVG.)	AREA (SQ. YD.)	VOLUME (CU. YD.)
293+00.00 311+50.00	OUTSIDE SHOULDER	1850	1.5	308	13
293+00.00 307+71.00	INSIDE SHOULDER	1471	1.5	245	10
0+50.00 9+16.00	OUTSIDE SHOULDER	866	1.5	144	6
4+61.00 9+16.00	INSIDE SHOULDER	455	1.5	76	3
			TOTAL	773	32

SR 21 SOUTHBOUND CALCULATIONS

WAY-21-5.74

CR 150

ITEM 254 PAVEMENT PLANING, ASPHALT CONCRETE (VARIABLE DEPTH)

STATION	LENGTH	WIDTH (AVG.)	DEPTH (AVG.)	AREA (SQ. YD.)
48+65.00	10	24	3.25	27
48+75.00	25	24	2.75	71
49+00.00	25	27	0.00	108
49+25.00	25	51	0.00	181
49+50.00	50	79	0.00	439
50+00.00	50	79	1.75	439
50+50.00	25	79	5.00	194
50+75.00	25	61	2.75	133
51+00.00	25	35	3.25	89
51+25.00	15	29	2.50	48
51+40.00		29	3.25	
			TOTAL	1,729

ITEM 442 ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM, TYPE A (448)

STATION	LENGTH	WIDTH (AVG.)	DEPTH (AVG.)	AREA (SQ. YD.)	VOLUME CU. YD.)
48+65.00	10	29.6	1.75	35	2
48+75.00	25	32.9	1.75	105	5
49+00.00	25	42.5	1.75	176	9
49+25.00	25	84.2	1.75	227	11
49+50.00	50	79.0	1.75	439	21
50+00.00	50	79.0	1.75	439	21
50+50.00	25	79.0	1.75	214	10
50+75.00	25	74.9	1.75	169	8
51+00.00	25	46.8	1.75	120	6
51+25.00	15	39.3	1.75	64	3
51+40.00		37.9	1.75		
			TOTAL	1,987	97

ITEM 442 ASPHALT CONCRETE SURFACE COURSE, 12.5MM, TYPE A (446)

STATION	LENGTH	WIDTH (AVG.)	DEPTH (AVG.)	AREA (SQ. YD.)	VOLUME CU. YD.)
48+65.00	10	29.6	1.50	35	1
48+75.00	25	32.9	1.50	105	4
49+00.00	25	42.5	1.50	176	7
49+25.00	25	84.2	1.50	227	9
49+50.00	50	79.0	1.50	439	18
50+00.00	50	79.0	1.50	439	18
50+50.00	25	79.0	1.50	214	9
50+75.00	25	74.9	1.50	169	7
51+00.00	25	46.8	1.50	120	5
51+25.00	15	39.3	1.50	64	3
51+40.00		37.9	1.50		
			TOTAL	1,987	83

ITEM 254 PATCHING PLANED SURFACE

STATION	LENGTH	WIDTH (AVG.)	AREA (SQ. YD.)	PATCHING AREA (SQ.YD.)
48+65.00	10	24	27	0.3
48+75.00	25	24	71	0.7
49+00.00	25	27	108	1.1
49+25.00	25	51	181	1.8
49+50.00	50	79	439	4.4
50+00.00	50	79	439	4.4
50+50.00	25	79	194	1.9
50+75.00	25	61	133	1.3
51+00.00	25	35	89	0.9
51+25.00	15	29	48	0.5
51+40.00		29		
		TOTAL	1,729	17

ITEM 617 COMPACTED AGGREGATE, AS PER PLAN (1.5" THICK)

STATION	LENGTH	WIDTH (AVG.)	AREA (SQ. YD.)	VOLUME (CU. YD.)
48+65.00 RT.	48	1.5	8	1
49+13.00 RT.				
50+85.00 RT.	60	1.5	10	1
51+40.00 RT.				
48+72.00 LT.	74	1.5	12	1
49+33.00 LT.				
50+70.00 LT.	79	1.5	13	1
51+40.00 LT.				
		TOTAL	43	4

ITEM 408 PRIME COAT

43 SQ. YD. X 0.40 GAL./ SQ. YD. = 17 GALLONS

ITEM 301 ASPHALT CONCRETE BASE, PG64-22, AS PER PLAN

SR 21/ CR150 S.W. CORNER RADIUS IMPROVEMENT

STATION	LENGTH	** WIDTH (AVG.)	DEPTH (AVG.)	AREA (SQ. YD.)	VOLUME (CU. YD.)
48+67.00	33.11	3.58	8.00	18	4
49+00.00	30.22	6.10	8.00	30	7
49+25.00	16.22	11.72	8.00	19	4
311+30.00	36.60	9.49	8.00	23	5
310+94.00		1.58	8.00		
			TOTAL	89	20

SR 21/ CR150 N.W. CORNER RADIUS IMPROVEMENT

STATION	LENGTH	** WIDTH (AVG.)	DEPTH (AVG.)	AREA (SQ. YD.)	VOLUME (CU. YD.)
48+72.00	29.87	5.79	8.00	27	6
49+00.00	30.26	10.43	8.00	29	6
49+25.00	23.68	6.64	8.00	16	4
0+53.00		5.64	8.00		
			TOTAL	72	16

SR 21/ CR150 S.E. CORNER RADIUS IMPROVEMENT

STATION	LENGTH	** WIDTH (AVG.)	DEPTH (AVG.)	AREA (SQ. YD.)	VOLUME (CU. YD.)
311+26.00	27.32	5.35	8.00	24	5
311+47.00	26.53	10.54	8.00	33	7
51+00.00	19.84	12.00	8.00	23	5
51+18.00	22.08	8.94	8.00	18	4
51+40.00		5.50	8.00		
			TOTAL	98	22

CR150

STATION	LENGTH	* WIDTH (AVG.)	DEPTH (AVG.)	AREA (SQ. YD.)	VOLUME (CU. YD.)
49+00.00	25	0.00	0.00	71	0
49+25.00	25	51.43	3.75	181	19
49+50.00	25	79.00	3.00	110	9
49+75.00	25	0.00	0.00	0	0
			TOTAL	362	28

* ITEM 301 WIDTH AVERAGES INCLUDE AVG WIDTH OF TWO LIFTS DUE TO STEPPED CONSTRUCTION

** ITEM 301 WIDTH AVERAGES INCLUDE AVG WIDTH OF TWO LIFTS DUE TO STEPPED CONSTRUCTION. WIDTH MEASURED PERPENDICULAR TO SAW CUT

ITEM 407 TACK COAT

TACK COAT BETWEEN EXISTING PAVEMENT AND ITEM 301 @ 0.08 GAL/ SQ. YD.
362 SQ. YD. X 0.08 GAL./ SQ. YD. = 29 GALLONS

TACK COAT BETWEEN ITEM 301 LAYERS @ 0.04 GAL/ SQ. YD.
89 SQ. YD. + 72 SQ. YD. + 98 SQ.YD. = 259 SQ. YD.
259 SQ. YD. X 0.04 GAL./ SQ. YD. = 10 GALLONS

TACK COAT BETWEEN ITEM 301 AND INTERMEDIATE COURSE @ 0.04 GAL/ SQ. YD.
89 SQ. YD. + 72 SQ. YD. + 98 SQ.YD. = 259 SQ. YD.
259 SQ. YD. X 0.04 GAL./ SQ. YD. = 10 GALLONS

ITEM 407 TACK COAT FOR INTERMEDIATE COURSE

TACK COAT BETWEEN INTERMEDIATE & SURFACE COURSE @ 0.04 GAL/ SQ. YD.
1987 SQ. YD. X 0.04 GAL./ SQ. YD. = 80 GALLONS

ITEM SPECIAL REINFORCED MESH FOR TRANSVERSE AND/OR LONGITUDINAL JOINTS AND CRACKS

SR 21/ CR150 S.W. CORNER RADIUS IMPROVEMENT

FROM STATION	TO STATION	LENGTH (FT)	WIDTH (FT)	AREA (SQ. YD.)
310+94.15	311+64.27	152	2.5	42

SR 21/ CR150 N.W. CORNER RADIUS IMPROVEMENT

FROM STATION	TO STATION	LENGTH (FT)	WIDTH (FT)	AREA (SQ. YD.)
0+08.96	0+53.32	98	2.5	27

SR 21/ CR150 S.E. CORNER RADIUS IMPROVEMENT

FROM STATION	TO STATION	LENGTH (FT)	WIDTH (FT)	AREA (SQ. YD.)
311+26.15	311+71.06	103	2.5	29

ITEM 304 AGGREGATE BASE

SR 21/ CR150 S.W. CORNER RADIUS IMPROVEMENT

STATION	LENGTH	WIDTH (AVG.)	DEPTH (AVG.)	AREA (SQ. YD.)	VOLUME (CU. YD.)
48+67.00	33.11	4.33	6.00	21	3
49+00.00	30.22	6.85	6.00	32	5
49+25.00	16.22	12.47	6.00	20	3
311+30.00	36.60	10.24	6.00	26	4
310+94.00		2.33	6.00		
				TOTAL	17

SR 21/ CR150 N.W. CORNER RADIUS IMPROVEMENT

STATION	LENGTH	WIDTH (AVG.)	DEPTH (AVG.)	AREA (SQ. YD.)	VOLUME (CU. YD.)
48+72.00	29.87	6.54	6.00	29	5
49+00.00	30.26	11.18	6.00	31	5
49+25.00	23.68	7.39	6.00	18	3
0+53.00		6.39	6.00		
				TOTAL	13

SR 21/ CR150 S.E. CORNER RADIUS IMPROVEMENT

STATION	LENGTH	WIDTH (AVG.)	DEPTH (AVG.)	AREA (SQ. YD.)	VOLUME (CU. YD.)
311+26.00	27.32	6.10	6.00	26	4
311+47.00	26.53	11.29	6.00	35	6
51+00.00	19.84	12.75	6.00	25	4
51+18.00	22.08	9.69	6.00	20	3
51+40.00		6.25	6.00		
				TOTAL	18

ITEM 204 SUBGRADE COMPACTION

SR 21/ CR150 S.W. CORNER RADIUS IMPROVEMENT

STATION	LENGTH	WIDTH (AVG.)	AREA (SQ. YD.)
48+67.00	33.11	4.50	21
49+00.00	30.22	7.02	33
49+25.00	16.22	12.64	21
311+30.00	36.60	10.41	26
310+94.00		2.50	
		TOTAL	101

SR 21/ CR150 N.W. CORNER RADIUS IMPROVEMENT

STATION	LENGTH	WIDTH (AVG.)	AREA (SQ. YD.)
48+72.00	29.87	6.71	30
49+00.00	30.26	11.35	32
49+25.00	23.68	7.56	19
0+53.00		6.56	
		TOTAL	80

SR 21/ CR150 S.E. CORNER RADIUS IMPROVEMENT

STATION	LENGTH	WIDTH (AVG.)	AREA (SQ. YD.)
311+26.00	27.32	6.27	27
311+47.00	26.53	11.46	36
51+00.00	19.84	12.92	25
51+18.00	22.08	9.86	20
51+40.00		6.42	
		TOTAL	108

ITEM 204 PROOF ROLLING

SUBGRADE COMPACTION AREA SQ. YD = 289 / 2000 SQ. YD/HR = 0.2 HRS

CALC'D MJS CHECKED BAD

CR 150 CALCULATIONS

WAY-21-5.74

I:\projects\81797\roadway\sheets\[81797GC001.xls]CALCULATIONS CR150 6/1/2007 7:26

REF. NO.	SHEET NO.	STATION FROM	STATION TO	SIDE	ITEM 603 4" CONDUIT, TYPE B (707.33) FT	603 4" CONDUIT, TYPE F FOR UNDERDRAIN OUTLET FT	603 6" CONDUIT, TYPE C FT	603 12" CONDUIT, TYPE B FT	603 15" CONDUIT, TYPE B FT	603 18" CONDUIT, TYPE B FT	603 18" CONDUIT, TYPE C FT	604 CATCH BASIN, NO. 6 EACH	604 CATCH BASIN, NO. 8 EACH	604 CATCH BASIN RECONSTRUCTED TO GRADE EACH	604 INLET, NO. 3 FOR SINGLE SLOPE BARRIER, TYPE C EACH		604 MANHOLE, NO. 3 EACH	604 PRECAST REINFORCED CONCRETE OUTLET EACH	605 4" SHALLOW PIPE UNDERDRAINS WITH FABRIC WRAP FT		835 EXFILTRATION TRENCH, TYPE B FT
D-1	31	310+55.00		MED											1						
D-2	32	2+50.00		MED											1						
D-3	32	4+35.00		MED											1						
D-4	31	310+55.00		MED/RT						126							1				
D-5	32	0+70.00		MED								1									
D-6	30	306+50.00		MED									1								
D-7	32	0+70.00	4+35.00	MED				365													
D-8	32,33	4+35.00	5+99.51	MED					165												
D-9	30,31	306+50.00	310+55.00	MED					405												
D-10	33	5+99.51		MED										1							
D-11	31	310+55.00	311+43.00	RT							87										
D-12	33	5+99.51		MED					8												
D-13	33	5+99.51		MED			8														
D-14	30,31	303+14.00	311+25.00	MED		7													811		
D-15	32,33	0+50.00	9+00.00	MED		15												1	850		
WQ-1	31	310+18.00	310+54.97	MED	24														12	12	
WQ-2	32	2+10.00	2+50.00	MED	24														16	16	
WQ-3	32	3+99.00	4+35.00	MED	24														12	12	
TOTAL					**72**	**22**	**8**	**365**	**578**	**126**	**87**	**1**	**1**	**1**	**3**		**1**	**1**	**1701**	**40**	

CALC'D MJS
CHECKED BAD

DRAINAGE SUB-SUMMARY

WAY-21-5.74

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6/1/2007 7:47 I:\projects\81797\roadway\sheets\81797TS001.xls]Traffic Control

Curve C7
P.I. N 482,746.4639 E 2,199,537.8464
Delta = 10° 56' 33.00" (RT)
Degree = 38° 11' 49.87"
Tangent = 14.3674
Length = 28.6474
Radius = 150.0000
External = 0.6865
Long Chord = 28.6039
Mid. Ord. = 0.6834
P.C. N 482,746.3323 E 2,199,523.4796
P.T. N 482,743.8659 E 2,199,551.9770
C.C. N 482,596.3386 E 2,199,524.8530
Back = N 89° 28' 31.48" E
Ahead = S 79° 34' 55.53" E
Chord Bear = S 85° 03' 12.03" E

Curve C9
P.I. N 482,683.9061 E 2,199,594.5683
Delta = 19° 32' 25.80" (RT)
Degree = 27° 17' 01.34"
Tangent = 36.1610
Length = 71.6197
Radius = 210.0000
External = 3.0906
Long Chord = 71.2731
Mid. Ord. = 3.0458
P.C. N 482,717.9649 E 2,199,582.4185
P.T. N 482,647.7451 E 2,199,594.6265
C.C. N 482,647.4070 E 2,199,384.6267
Back = S 19° 37' 57.85" E
Ahead = S 0° 05' 32.05" E
Chord Bear = S 9° 51' 44.95" E

Curve C2
P.I. N 482,790.6740 E 2,199,588.0041
Delta = 55° 01' 10.03" (RT)
Degree = 143° 14' 22.02"
Tangent = 20.8313
Length = 38.4108
Radius = 40.0000
External = 5.0993
Long Chord = 36.9519
Mid. Ord. = 4.5227
P.C. N 482,810.8784 E 2,199,593.0760
P.T. N 482,783.2465 E 2,199,568.5419
C.C. N 482,820.6175 E 2,199,554.2797
Back = S 14° 05' 30.56" W
Ahead = S 69° 06' 40.59" W
Chord Bear = S 41° 36' 05.58" W

Curve C4
P.I. N 482,746.6183 E 2,199,550.0659
Delta = 10° 56' 33.00" (RT)
Degree = 38° 11' 49.87"
Tangent = 14.3674
Length = 28.6474
Radius = 150.0000
External = 0.6865
Long Chord = 28.6039
Mid. Ord. = 0.6834
P.C. N 482,746.5717 E 2,199,535.6985
P.T. N 482,743.9369 E 2,199,564.1808
C.C. N 482,596.5724 E 2,199,536.1857
Back = N 89° 48' 50.11" E
Ahead = S 79° 14' 36.89" E
Chord Bear = S 84° 42' 53.39" E

Curve C8
P.I. N 482,739.6941 E 2,199,574.6671
Delta = 59° 56' 57.68" (RT)
Degree = 143° 14' 22.02"
Tangent = 23.0704
Length = 41.8525
Radius = 40.0000
External = 6.1762
Long Chord = 39.9694
Mid. Ord. = 5.3501
P.C. N 482,743.8659 E 2,199,551.9770
P.T. N 482,717.9649 E 2,199,582.4185
C.C. N 482,704.5253 E 2,199,544.7439
Back = S 79° 34' 55.53" E
Ahead = S 19° 37' 57.85" E
Chord Bear = S 49° 36' 26.69" E

Curve C6
P.I. N 482,683.3268 E 2,199,606.5363
Delta = 19° 44' 59.72" (RT)
Degree = 27° 17' 01.34"
Tangent = 36.5563
Length = 72.3872
Radius = 210.0000
External = 3.1581
Long Chord = 72.0294
Mid. Ord. = 3.1113
P.C. N 482,717.8363 E 2,199,594.4759
P.T. N 482,646.7718 E 2,199,606.2261
C.C. N 482,648.5541 E 2,199,396.2336
Back = S 19° 15' 49.04" E
Ahead = S 0° 29' 10.68" W
Chord Bear = S 9° 23' 19.18" E

Curve C12
P.I.N 482,748.6629 E 2,199,778.0120
Delta = 20° 21' 50.89" (RT)
Degree = 28° 38' 52.40"
Tangent = 35.9211
Length = 71.0842
Radius = 200.0000
External = 3.2002
Long Chord = 70.7107
Mid. Ord. = 3.1498
P.C. N 482,735.8551 E 2,199,744.4519
P.T. N 482,748.9917 E 2,199,813.9316
C.C. N 482,549.0001 E 2,199,815.7627
Back = N 69° 06' 40.59" E
Ahead = N 89° 28' 31.48" E
Chord Bear = N 79° 17' 36.03" E

Curve C10
P.I. N 482,694.3024 E 2,199,716.6813
Delta = 12° 54' 24.01" (RT)
Degree = 47° 44' 47.34"
Tangent = 13.5733
Length = 27.0317
Radius = 120.0000
External = 0.7652
Long Chord = 26.9745
Mid. Ord. = 0.7604
P.C. N 482,680.7292 E 2,199,716.6445
P.T. N 482,707.5245 E 2,199,719.7490
C.C. N 482,680.4032 E 2,199,836.6440
Back = N 0° 09' 20.35" E
Ahead = N 13° 03' 44.36" E
Chord Bear = N 6° 36' 32.35" E

Curve C11
P.I. N 482,728.2639 E 2,199,724.5609
Delta = 56° 02' 56.23" (RT)
Degree = 143° 14' 22.02"
Tangent = 21.2903
Length = 39.1296
Radius = 40.0000
External = 5.3131
Long Chord = 37.5879
Mid. Ord.= 4.6901
P.C. N 482,707.5245 E 2,199,719.7490
P.T. N 482,735.8551 E 2,199,744.4519
C.C. N 482,698.4841 E 2,199,758.7140
Back = N 13° 03' 44.36" E
Ahead = N 69° 06' 40.59" E
Chord Bear = N 41° 05' 12.48" E

P.I. STA. 309+89.71
D = 2° 50' 21" (RT)
Dc = 0° 45' 00"
R = 7,639.44'
T = 189.32'
L = 378.57'
E = 2.35'

Curve C15
P.I.N 482,836.9614 E 2,199,706.5862
Delta = 19° 58' 18.15" (RT)
Degree = 27° 17' 01.34"
Tangent = 36.9752
Length = 73.2001
Radius = 210.0000
External = 3.2303
Long Chord = 72.8301
Mid. Ord.= 3.1814
P.C. N 482,801.8679 E 2,199,718.2315
P.T. N 482,873.9219 E 2,199,707.6276
C.C. N 482,868.0074 E 2,199,917.5443
Back = N 18° 21' 28.05" W
Ahead = N 1° 36' 50.10" E
Chord Bear = N 8° 22' 18.97" W

Curve C14
P.I. N 482,779.4050 E 2,199,725.6856
Delta = 61° 13' 27.48" (RT)
Degree = 143° 14' 22.02"
Tangent = 23.6674
Length = 42.7426
Radius = 40.0000
External = 6.4774
Long Chord = 40.7379
Mid. Ord.= 5.5746
P.C. N 482,775.1253 E 2,199,748.9628
P.T. N 482,801.8679 E 2,199,718.2315
C.C. N 482,814.4659 E 2,199,756.1959
Back = N 79° 34' 55.53" W
Ahead = N 18° 21' 28.05" W
Chord Bear = N 48° 58' 11.79" W

Curve C13
P.I. N 482,772.5273 E 2,199,763.0934
Delta = 10° 56' 33.00" (RT)
Degree = 38° 11' 49.87"
Tangent = 14.3674
Length = 28.6474
Radius = 150.0000
External = 0.6865
Long Chord = 28.6039
Mid. Ord.= 0.6834
P.C. N 482,772.6588 E 2,199,777.4602
P.T. N 482,775.1253 E 2,199,748.9628
C.C. N 482,922.6525 E 2,199,776.0868
Back = S 89° 28' 31.48" W
Ahead = N 79° 34' 55.53" W
Chord Bear = N 85° 03' 12.03" W

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED SJD
CHECKED BAD

INTERSECTION DETAIL
ELEVATION & RADII INFORMATION

WAY-21-5.74

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DESIGN FILE: I:\projects\81797\roadway\sheets\81797GI001.dgn
WORKSTATION: mschafra DATE: 6/1/2007

CALC BY MJS
CHKD BY BAD

LEFT EDGE OF PAVEMENT (LEFT TURN LANE)					LEFT EDGE OF PAVEMENT (PASSING LANE)					CENTERLINE		RIGHT EDGE OF PAVEMENT (DRIVING LANE)					RIGHT EDGE OF PAVEMENT (RIGHT TURN LANE)					RIGHT EDGE OF PAVEMENT AT RADIUS				
EDGE ELEVATION	TRANSITION RATE	ELEVATION CORRECTION	CROSS SLOPE	WIDTH FROM EDGE OF PAVEMENT (PASSING LANE)	EDGE ELEVATION	TRANSITION RATE	ELEVATION CORRECTION	CROSS SLOPE	WIDTH FROM CENTERLINE	STATION	PROFILE GRADE	WIDTH FROM CENTERLINE	CROSS SLOPE	ELEVATION CORRECTION	TRANSITION RATE	EDGE ELEVATION	WIDTH FROM EDGE OF PAVEMENT (DRIVING LANE)	CROSS SLOPE	ELEVATION CORRECTION	TRANSITION RATE	EDGE ELEVATION	WIDTH FROM EDGE OF RIGHT TURN LANE	CROSS SLOPE	ELEVATION CORRECTION	TRANSITION RATE	EDGE ELEVATION
				0	1,182.42		-0.192	-0.016	12	303+14.00	1182.61	12	-0.016	-0.192		1,182.42										
1,182.27	260.4	-0.04224	-0.016	2.64	1,182.31		-0.192	-0.016	12	303+25.00	1182.50	12	-0.016	-0.192		1,182.31										
1,181.91	260.4	-0.13824	-0.016	8.64	1,182.05		-0.192	-0.016	12	303+50.00	1182.24	12	-0.016	-0.192		1,182.05										
1,181.71	260.4	-0.192	-0.016	12	1,181.90		-0.192	-0.016	12	303+64.00	1182.09	12	-0.016	-0.192		1,181.90										
1,181.59		-0.192	-0.016	12	1,181.78		-0.192	-0.016	12	303+75.00	1181.97	12	-0.016	-0.192		1,181.78										
1,181.33		-0.192	-0.016	12	1,181.52		-0.192	-0.016	12	304+00.00	1181.71	12	-0.016	-0.192		1,181.52										
1,181.07		-0.192	-0.016	12	1,181.26		-0.192	-0.016	12	304+25.00	1181.45	12	-0.016	-0.192		1,181.26										
1,180.81		-0.192	-0.016	12	1,181.00		-0.192	-0.016	12	304+50.00	1181.19	12	-0.016	-0.192		1,181.00										
1,180.54		-0.192	-0.016	12	1,180.73		-0.192	-0.016	12	304+75.00	1180.92	12	-0.016	-0.192		1,180.73										
1,180.28		-0.192	-0.016	12	1,180.47		-0.192	-0.016	12	305+00.00	1180.66	12	-0.016	-0.192		1,180.47										
1,180.02		-0.192	-0.016	12	1,180.21		-0.192	-0.016	12	305+25.00	1180.40	12	-0.016	-0.192		1,180.21										
1,179.75		-0.192	-0.016	12	1,179.94		-0.192	-0.016	12	305+50.00	1180.13	12	-0.016	-0.192		1,179.94										
1,179.49		-0.192	-0.016	12	1,179.68		-0.192	-0.016	12	305+75.00	1179.87	12	-0.016	-0.192		1,179.68										
1,179.23		-0.192	-0.016	12	1,179.42		-0.192	-0.016	12	306+00.00	1179.61	12	-0.016	-0.192		1,179.42										
1,178.97		-0.192	-0.016	12	1,179.16		-0.192	-0.016	12	306+25.00	1179.35	12	-0.016	-0.192		1,179.16										
1,178.85		-0.192	-0.016	12	1,179.04		-0.192	-0.016	12	306+36.39	1179.23	12	-0.016	-0.192		1,179.04										
1,178.75	736.5	-0.173519	-0.014460	12	1,178.92	445.2	-0.161428	-0.013452	12	306+50.00	1179.08	12	-0.016	-0.192		1,178.89										
1,178.69	736.5	-0.161299	-0.013442	12	1,178.85	445.2	-0.141211	-0.011768	12	306+59.00	1178.99	12	-0.016	-0.192		1,178.80										
1,178.53	645.2	-0.186097	-0.011631	16	1,178.71	445.2	-0.10527	-0.008773	12	306+75.00	1178.82	12	-0.016	-0.192		1,178.63										
1,178.36	707.9	-0.150781	-0.008802	17.13	1,178.51	445.2	-0.049113	-0.004093	12	307+00.00	1178.56	12	-0.016	-0.192		1,178.37										
1,178.18	838.3	-0.120959	-0.005973	20.25	1,178.30	445.2	0.007045	0.000587	12	307+25.00	1178.29	12	-0.016	-0.192		1,178.10										
1,178.02	526.9	-0.073517	-0.003144	23.38	1,178.09	445.2	0.063203	0.005267	12	307+50.00	1178.03	12	-0.016	-0.192		1,177.84										
1,177.88	383.7	-0.008362	-0.000316	26.50	1,177.89	445.2	0.11936	0.009947	12	307+75.00	1177.77	12	-0.016	-0.192		1,177.58										
1,177.86	331.6	0.00364	0.000135	27.00	1,177.86	445.2	0.128301	0.010692	12	307+78.98	1177.73	12	-0.016	-0.192		1,177.54	0	-0.016	0		1,177.54	0	-0.016	0		1,177.54
1,177.76	296.8	0.074471	0.002513	29.63	1,177.69	445.2	0.175518	0.014627	12	308+00.00	1177.51	12	-0.016	-0.192		1,177.32	1.48	-0.016	-0.02368	887.7	1,177.29	0	-0.016	0		1,177.29
1,177.72	265.4	0.102123	0.003344	30.54	1,177.62	445.2	0.192006	0.016000	12	308+07.34	1177.43	12	-0.016	-0.192		1,177.24	2.02	-0.016	-0.03232	849.5	1,177.21	0	-0.016	0		1,177.21
1,177.65	242.5	0.174958	0.005342	32.75	1,177.47	445.2	0.231676	0.019306	12	308+25.00	1177.24	12	-0.01931	-0.231673	445.1	1,177.01	3.34	-0.01931	-0.064482	549.1	1,176.94	0	-0.01931	0		1,176.94
1,177.64	227.2	0.183762	0.005569	33	1,177.46	445.2	0.236168	0.019681	12	308+27.00	1177.22	12	-0.01968	-0.236166	445.1	1,176.98	3.49	-0.01968	-0.068685	475.9	1,176.92	0	-0.01968	0		1,176.92
1,177.58	267.8	0.230028	0.006971	33	1,177.35	445.2	0.264	0.022	12	308+39.39	1177.09	12	-0.022	-0.264	445.1	1,176.83	4.44	-0.022	-0.09768	427.3	1,176.73	0	-0.022	0		1,176.73
1,177.51	267.8	0.269647	0.008171	33	1,177.24		0.264	0.022	12	308+50.00	1176.98	12	-0.022	-0.264		1,176.72	5.26	-0.022	-0.11572	588.1	1,176.60	0	-0.022	0		1,176.60
1,177.35	267.8	0.363	0.011	33	1,176.98		0.264	0.022	12	308+75.00	1176.72	12	-0.022	-0.264		1,176.46	7.25	-0.022	-0.1595	571.0	1,176.30	0	-0.022	0		1,176.30
1,177.00	290.9	0.277063	0.008396	33	1,176.72		0.264	0.022	12	309+00.00	1176.46	12	-0.022	-0.264		1,176.20	8.70	-0.022	-0.1914	783.7	1,176.00	0.00	-0.022	0		1,176.00
1,176.65	290.9	0.191125	0.005792	33	1,176.45		0.264	0.022	12	309+25.00	1176.19	12	-0.022	-0.264		1,175.93	9.89	-0.022	-0.21758	954.9	1,175.71	0	-0.022	0		1,175.71
1,176.30	290.9	0.105188	0.003188	33	1,176.19		0.264	0.022	12	309+50.00	1175.93	12	-0.022	-0.264		1,175.67	10.70	-0.022	-0.2354	1402.9	1,175.43	0.00	-0.022	0		1,175.43
1,175.95	290.9	0.01925	0.000583	33	1,175.93		0.264	0.022	12	309+75.00	1175.67	12	-0.022	-0.264		1,175.41	11.38	-0.022	-0.25036	1671.1	1,175.16	0	-0.022	0		1,175.16
1,175.60	290.9	-0.066688	-0.002021	33	1,175.66		0.264	0.022	12	310+00.00	1175.40	12	-0.022	-0.264		1,175.14	11.81	-0.022	-0.25982	2642.7	1,174.88	0	-0.022	0		1,174.88
1,175.25	290.9	-0.152625	-0.004625	33	1,175.40		0.264	0.022	12	310+25.00	1175.14	12	-0.022	-0.264		1,174.88	12	-0.02070	-0.248348	2179.2	1,174.63	0	-0.02070	0		1,174.63
1,174.91	290.9	-0.238563	-0.007229	33	1,175.14		0.264	0.022	12	310+50.00	1174.88	12	-0.022	-0.264		1,174.62	12	-0.01939	-0.232696	1597.2	1,174.38	0	-0.01939	0		1,174.38
1,174.52	290.9	-0.3245	-0.009833	33	1,174.84		0.264	0.022	12	310+75.00	1174.58	12	-0.022	-0.264		1,174.32	12	-0.01809	-0.217043	1597.2	1,174.10	0	-0.01809	0		1,174.10
1,174.12	290.9	-0.410438	-0.012438	33	1,174.53		0.264	0.022	12	311+00.00	1174.27	12	-0.022	-0.264		1,174.01	12	-0.01678	-0.201391	1597.2	1,173.80	0	-0.01678	0		1,173.80
										311+00.30	1174.27	12	-0.022	-0.264		1,174.01	12	-0.01677	-0.201203	1597.2	1,173.80	0	-0.01677	0		1,173.80
										311+10.37	1174.15	12	-0.022	-0.264		1,173.89	12	-0.01624	-0.194899	1597.2	1,173.69	0.41	-0.01624	-0.00666	1512.2	1,173.68
1,173.89	290.9	-0.462	-0.014	33	1,174.35		0.264	0.022	12	311+15.00	1174.09	12	-0.022	-0.264		1,173.83	12	-0.016	-0.192	1597.2	1,173.63	0.87	-0.016	-0.01392	637.7	1,173.62
										311+20.38	1174.03	12	-0.022	-0.264		1,173.77	12	-0.016	-0.192		1,173.57	1.64	-0.016	-0.02624	436.7	1,173.55
1,173.90	75.8	-0.33	-0.010	33	1,174.23		0.264	0.022	12	311+25.00	1173.97	12	-0.022	-0.264		1,173.71	12	-0.016	-0.192		1,173.51	2.49	-0.016	-0.03984	339.7	1,173.47
										311+30.39	1173.91	12	-0.022	-0.264		1,173.65	12	-0.016	-0.192		1,173.45	3.74	-0.016	-0.05984	261.5	1,173.39
										311+39.41	1173.8	12	-0.022	-0.264		1,173.54	12	-0.016	-0.192		1,173.34	7.81	-0.016	-0.12496	141.0	1,173.22
										311+47.31	1173.7	12	-0.022	-0.264		1,173.44	12	-0.016	-0.192		1,173.24	13.99	-0.016	-0.22384	79.9	1,173.02
					1,173.93		0.264	0.022	12	311+50.00	1173.67	12	-0.022	-0.264		1,173.41	12	-0.016	-0.192		1,173.21	16.98	-0.016	-0.27168	56.2	1,172.94
										311+53.44	1173.63	12	-0.022	-0.264		1,173.37	12	-0.0167	-0.2004	409.5	1,173.17	21.92	-0.0167	-0.36606	36.4	1,172.80
										311+57.54	1173.58	12	-0.022	-0.264		1,173.32	12	-0.0189	-0.2268	155.3	1,173.09	31.04	-0.0189	-0.58666	18.6	1,172.50
										311+60.83	1173.54	12	-0.022	-0.264		1,173.28	12	-0.0205	-0.246	171.4	1,173.03	40.50	-0.0205	-0.83025	13.5	1,172.20
										311+63.64	1173.51	12	-0.022	-0.264		1,173.25	12	-0.020	-0.24	468.3	1,173.01	50.10	-0.020	-1.002	16.4	1,172.00
										311+65.97	1173.48	12	-0.022	-0.264		1,173.22	12	-0.0189	-0.2268	176.5	1,172.99	59.84	-0.0189	-1.13098	18.1	1,171.86
										311+67.81	1173.46	12	-0.022	-0.264		1,173.20	12	-0.0171	-0.2052	85.2	1,172.99	69.67	-0.0171	-1.19136	30.5	1,171.80
										311+69.11	1173.44	12	-0.022	-0.264		1,173.18	12	-0.0163	-0.1956	135.4	1,172.98	79.23	-0.0153	-1.21222	62.3	1,171.77
					1,173.59		0.264	0.022	12	0+00.00	1173.33	12	-0.022	-0.264		1,173.07	12									
										0+15.38	1173.18	12	-0.022	-0.264		1,172.92	12	-0.013	-0.156	786710.4	1,172.76	78.68	-0.0124	-0.97563	131679.8	1,171.78
										0+15.39	1173.18	12	-0.022	-0.264		1,172.92	12	-0.0128	-0.1536	33.3	1,172.76	75.41	-0.0128	-0.96525	7.7	1,171.80
										0+15.05	1173.18	12	-0.022	-0.264		1,172.92	12	-0.0139	-0.1668	18.9	1,172.75	65.41	-0.0139	-0.9092	4.5	1,171.84
										0+14.88	1173.18	12	-0.022	-0.264		1,172.92	12	-0.0149	-0.1788	14.2	1,172.74	55.41	-0.0149	-0.82561	2.0	1,171.91
										0+15.29	1173.18	12	-0.022	-0.264		1,172.92	12	-0.015	-0.18	341.7	1,172.74	45.42	-0.015	-0.6813	2.8	1,172.05
										0+16.36	1173.17	12	-0.022	-0.264		1,172.91	12	-0.0153	-0.1836	297.2	1,172.72	35.48	-0.0153	-0.54284	7.7	1,172.18
										0+18.42	1173.15	12	-0.022	-0.264		1,172.89	12	-0.0135	-0.162	95.4	1,172.72	25.70	-0.0135	-0.34695	10.5	1,172.38
										0+22.71	1173.11	12	-0.022	-0.264		1,172.85	12	-0.0125	-0.15	357.5	1,172.70	16.68	-0.0125	-0.2085	31.0	1,172.49
					1,173.34		0.264	0.022	12	0+25.00	1173.08	12	-0.022	-0.264		1,172.82	12	-0.0111	-0.1332	136.3	1,172.68	13.46	-0.0111	-0.14941	38.8	1,172.53
										0+29.11	1173.04	12	-0.022	-0.264		1,172.78	12	-0.00840	-0.1008	126.9	1,172.68	8.98	-0.00840	-0.07543	55.6	1,172.60
										0+37.23	1172.97	12	-0.022	-0.264		1,172.71	12	-0.00600	-0.072	281.9	1,172.63	3.08	-0.00600	-0.01848	142.6	1,172.62
										0+46.52	1172.88	12	-0.022	-0.264		1,172.62	11.25	-0.00600	-0.0675	2064.4	1,172.55	0	-0.00600	0	502.7	1,172.55
					1,173.11		0.264	0.022	12	0+50.00	1172.85	12	-0.022	-0.264		1,172.59	10.12	-0.00850	-0.08602	187.9	1,172.50	0	-0.00850	0		1,172.50
										0+56.14	1172.79	12	-0.022	-0.264		1,172.53	8.14	-0.01300	-0.10582	310.1	1,172.42	0	-0.01300	0		1,172.42
										0+65.89	1172.70	12	-0.022	-0.264		1,172.44	5.76	-0.02000	-0.1152	1039.4	1,172.32	0	-0.02000	0		1,172.32
					1,172.87		0.264	0.022	12	0+75.00	1172.61	12	-0.022	-0.264		1,172.35	3.83	-0.02000	-0.0766	236.0	1,172.27	0	-0.02000	0		1,172.27
										0+75.74	1172.6	12	-0.022	-0.264		1,172.34	3.69	-0.02000	-0.0738	264.3	1,172.26	0	-0.02000	0		1,172.26
										0+85.68	1172.49	12	-0.022	-0.264		1,172.23	2.08	-0.02100	-0.04368	330.0	1,172.18	0	-0.02100	0		1,172.18
										0+95.65	1172.38	12	-0.022	-0.264		1,172.12	0.93	-0.02140	-0.019902	420.6	1,172.10	0	-0.02140	0		1,172.10
					1,172.59		0.264	0.022	12	1+00.00	1172.33	12	-0.022	-0.264		1,172.07	0.57	-0.022	-0.01254	586.8	1,172.05	0	-0.022	0		1,172.05
										1+05.72	1172.26	12	-0.022	-0.264		1,172.00	0.23	-0.022	-0.00506	764.7	1,171.99	0	-0.022	0		1,171.99
										1+15.79	1172.15	12	-0.022	-0.264		1,171.89	0	-0.022	0	1988.1	1,171.89	0	-0.022	0		1,171.89
					1,172.30		0.264	0.022	12	1+25.00	1172.04	12	-0.022	-0.264		1,171.78										
					1,172.02		0.264	0.022	12	1+50.00	1171.76	12	-0.022	-0.264		1,171.50										
					1,171.74		0.264	0.022	12	1+75.00	1171.48	12	-0.022	-0.264		1,171.22										
					1,171.45		0.264	0.022	12	2+00.00	1171.19	12	-0.022	-0.264		1,170.93										
					1,171.17		0.264	0.022	12	2+25.00	1170.91	12	-0.022	-0.264		1,170.65										
					1,170.89		0.264	0.022	12	2+50.00	1170.63	12	-0.022	-0.264		1,170.37										
					1,170.60		0.264	0.022	12	2+75.00	1170.34	12	-0.022	-0.264		1,170.08										
					1,170.32		0.264	0.022	12	3+00.00	1170.06	12	-0.022	-0.264		1,169.80										
					1,170.03		0.264	0.022	12	3+25.00	1169.77	12	-0.022	-0.264		1,169.51										
					1,169.75		0.264	0.022	12	3+50.00	1169.49	12	-0.022	-0.264		1,169.23										
					1,169.47		0.264	0.022	12	3+75.00	1169.21	12	-0.022	-0.264		1,168.95										
					1,169.18		0.264	0.022	12	4+00.00	1168.92	12	-0.022	-0.264		1,168.66										
					1,168.90		0.264	0.022	12	4+25.00	1168.64	12	-0.022	-0.264		1,168.38										
					1,168.62		0.264	0.022	12	4+50.00	1168.36	12	-0.022	-0.264		1,168.10										
					1,168.49		0.264	0.022	12	4+61.00	1168.23	12	-0.022	-0.264		1,167.97										

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SUPER ELEVATIONS - SR21 NORTHBOUND LANES

WAY-21-5.74

25
83

CALC BY MJS
CHKD BY BAD

LEFT EDGE OF PAVEMENT AT RADIUS					LEFT EDGE OF PAVEMENT (RIGHT/THRU LANE)					LEFT EDGE OF PAVEMENT (DRIVING LANE)					CENTERLINE		RIGHT EDGE OF PAVEMENT (PASSING LANE)					RIGHT EDGE OF PAVEMENT (LEFT TURN LANE)				
EDGE ELEVATION	TRANSITION RATE	ELEVATION CORRECTION	CROSS SLOPE	WIDTH FROM EDGE OF PAVEMENT AT RADIUS	EDGE ELEVATION	TRANSITION RATE	ELEVATION CORRECTION	CROSS SLOPE	WIDTH FROM EDGE OF DRIVING LANE	EDGE ELEVATION	TRANSITION RATE	ELEVATION CORRECTION	CROSS SLOPE	WIDTH FROM CENTERLINE	STATION	PROFILE GRADE	WIDTH FROM CENTERLINE	CROSS SLOPE	ELEVATION CORRECTION	TRANSITION RATE	EDGE ELEVATION	WIDTH FROM EDGE OF PAVEMENT (PASSING LANE)	CROSS SLOPE	ELEVATION CORRECTION	TRANSITION RATE	EDGE ELEVATION
					1,182.47		-0.192	-0.016	12	1,182.66		-0.192	-0.016	12	303+00.00	1182.85	12	-0.016	-0.192		1,182.66					
					1,182.33		-0.192	-0.016	12	1,182.52		-0.192	-0.016	12	303+14.00	1182.71	12	-0.016	-0.192		1,182.52					
					1,182.22		-0.192	-0.016	12	1,182.41		-0.192	-0.016	12	303+25.00	1182.60	12	-0.016	-0.192		1,182.41					
					1,182.02	347.2	-0.12	-0.01	12	1,182.14	833.3	-0.162	-0.0135	12	303+50.00	1182.30	12	-0.016	-0.192		1,182.11					
					1,181.78	297.6	-0.036	-0.003	12	1,181.82		-0.162	-0.0135	12	303+75.00	1181.98	12	-0.016	-0.192		1,181.79					
					1,181.48		-0.036	-0.003	12	1,181.52		-0.162	-0.0135	12	304+00.00	1181.68	12	-0.016	-0.192		1,181.49					
					1,181.18		-0.036	-0.003	12	1,181.22		-0.162	-0.0135	12	304+25.00	1181.38	12	-0.016	-0.192		1,181.19					
					1,180.91		-0.036	-0.003	12	1,180.95		-0.162	-0.0135	12	304+50.00	1181.11	12	-0.016	-0.192		1,180.92					
					1,180.64		-0.036	-0.003	12	1,180.68		-0.162	-0.0135	12	304+75.00	1180.84	12	-0.016	-0.192		1,180.65					
					1,180.37		-0.036	-0.003	12	1,180.41		-0.162	-0.0135	12	305+00.00	1180.57	12	-0.016	-0.192		1,180.38					
					1,180.10		-0.036	-0.003	12	1,180.14		-0.162	-0.0135	12	305+25.00	1180.30	12	-0.016	-0.192		1,180.11					
					1,179.88		-0.036	-0.003	12	1,179.92		-0.162	-0.0135	12	305+50.00	1180.08	12	-0.016	-0.192		1,179.89					
					1,179.67		-0.036	-0.003	12	1,179.71		-0.162	-0.0135	12	305+75.00	1179.87	12	-0.016	-0.192		1,179.68					
					1,179.39		-0.036	-0.003	12	1,179.43		-0.162	-0.0135	12	306+00.00	1179.59	12	-0.016	-0.192		1,179.40					
					1,179.10		-0.036	-0.003	12	1,179.14		-0.162	-0.0135	12	306+25.00	1179.30	12	-0.016	-0.192		1,179.11					
					1,178.97		-0.036	-0.003	12	1,179.01		-0.162	-0.0135	12	306+36.39	1179.17	12	-0.016	-0.192		1,178.98					
					1,178.81		-0.036	-0.003	12	1,178.85	23628.5	-0.161424	-0.013452	12	306+50.00	1179.01	12	-0.016	-0.192		1,178.82					
					1,178.58		-0.036	-0.003	12	1,178.61	445.3	-0.105276	-0.008773	12	306+75.00	1178.72	12	-0.016	-0.192		1,178.53					
					1,178.36		-0.036	-0.003	12	1,178.40	445.2	-0.049116	-0.004093	12	307+00.00	1178.45	12	-0.016	-0.192		1,178.26					
					1,178.20	580.8	0.007044	0.000587	12	1,178.20	445.2	0.007044	0.000587	12	307+25.00	1178.19	12	-0.016	-0.192		1,178.00					
					1,178.08	445.2	0.063204	0.005267	12	1,178.01	445.2	0.063204	0.005267	12	307+50.00	1177.95	12	-0.016	-0.192		1,177.76					
					1,177.98	445.2	0.110376	0.009198	12	1,177.87	445.2	0.110376	0.009198	12	307+71.00	1177.76	12	-0.016	-0.192		1,177.57					
					1,177.96	445.0	0.119364	0.009947	12	1,177.84	445.0	0.119364	0.009947	12	307+75.00	1177.72	12	-0.016	-0.192		1,177.53					
					1,177.81	445.2	0.175524	0.014627	12	1,177.64	445.2	0.175524	0.014627	12	308+00.00	1177.46	12	-0.016	-0.192		1,177.27					
					1,177.77	445.5	0.192	0.016000	12	1,177.58	445.5	0.192	0.016000	12	308+07.34	1177.39	12	-0.016	-0.192		1,177.20					
					1,177.67	443.8	0.231792	0.019316	12	1,177.44	443.8	0.231792	0.019316	12	308+25.00	1177.21	12	-0.01931	-0.231673	445.1	1,176.98					
					1,177.59	448.8	0.264	0.022	12	1,177.32	446.8	0.264	0.022	12	308+39.39	1177.06	12	-0.022	-0.264	445.1	1,176.80					
					1,177.48		0.264	0.022	12	1,177.21		0.264	0.022	12	308+50.00	1176.95	12	-0.022	-0.264		1,176.69					
					1,177.22		0.264	0.022	12	1,176.95		0.264	0.022	12	308+75.00	1176.69	12	-0.022	-0.264		1,176.43					
					1,176.97		0.264	0.022	12	1,176.70		0.264	0.022	12	309+00.00	1176.44	12	-0.022	-0.264		1,176.18					
					1,176.71		0.264	0.022	12	1,176.44		0.264	0.022	12	309+25.00	1176.18	12	-0.022	-0.264		1,175.92					
					1,176.46		0.264	0.022	12	1,176.19		0.264	0.022	12	309+50.00	1175.93	12	-0.022	-0.264		1,175.67					
					1,176.20		0.264	0.022	12	1,175.93		0.264	0.022	12	309+75.00	1175.67	12	-0.022	-0.264		1,175.41					
					1,175.95		0.264	0.022	12	1,175.68		0.264	0.022	12	310+00.00	1175.42	12	-0.022	-0.264		1,175.16					
					1,175.73		0.264	0.022	12	1,175.46		0.264	0.022	12	310+25.00	1175.20	12	-0.022	-0.264		1,174.94					
					1,175.51		0.264	0.022	12	1,175.24		0.264	0.022	12	310+50.00	1174.98	12	-0.022	-0.264		1,174.72					
1,175.36		0.00	0.022	0.00	1,175.36		0.264	0.022	12	1,175.09		0.264	0.022	12	310+67.25	1174.83										
1,175.29	2348.5	0.0033	0.022	0.15	1,175.29		0.264	0.022	12	1,175.02		0.264	0.022	12	310+75.00	1174.76	12	-0.022	-0.264		1,174.50					
1,175.27	1096.0	0.00528	0.022	0.24	1,175.27		0.264	0.022	12	1,175.00		0.264	0.022	12	310+77.12	1174.74										
1,175.20	607.5	0.02156	0.022	0.98	1,175.18		0.264	0.022	12	1,174.91		0.264	0.022	12	310+87.08	1174.65										
1,175.15	366.8	0.0484	0.022	2.20	1,175.10		0.264	0.022	12	1,174.83		0.264	0.022	12	310+98.90	1174.57										
1,175.13	293.6	0.06896	0.022	2.88	1,175.07		0.264	0.022	12	1,174.80		0.264	0.022	12	311+00.00	1174.54	12	-0.022	-0.264		1,174.28					
1,175.09	248.9	0.0858	0.022	3.90	1,175.01		0.264	0.022	12	1,174.74		0.264	0.022	12	311+06.68	1174.48										
1,175.06	204.4	0.1265	0.022	5.75	1,174.94		0.264	0.022	12	1,174.67		0.264	0.022	12	311+15.00	1174.41	12	-0.022	-0.264		1,174.15					
1,175.06	186.0	0.13376	0.022	6.08	1,174.93		0.264	0.022	12	1,174.66		0.264	0.022	12	311+16.35	1174.40										
1,175.03	164.5	0.18634	0.022	8.47	1,174.85		0.264	0.022	12	1,174.58		0.264	0.022	12	311+25.00	1174.32	12	-0.022	-0.264		1,174.06					
1,175.03	151.5	0.19228	0.022	8.74	1,174.84		0.264	0.022	12	1,174.57		0.264	0.022	12	311+26.90	1174.31										
1,175.02	135.6	0.26092	0.022	11.86	1,174.76		0.264	0.022	12	1,174.49		0.264	0.022	12	311+35.21	1174.23										
1,175.02	117.6	0.33789	0.021	16.09	1,174.68		0.264	0.022	12	1,174.41		0.264	0.022	12	311+44.28	1174.15										
1,175.03	92.2	0.40014	0.0195	20.52	1,174.63		0.264	0.022	12	1,174.36		0.264	0.022	12	311+50.00	1174.10	12	-0.022	-0.264		1,173.84					
1,175.03	74.1	0.42579	0.019	22.41	1,174.61		0.264	0.022	12	1,174.34		0.264	0.022	12	311+61.90	1174.08										
1,175.05	95.1	0.4872	0.016	30.45	1,174.56		0.264	0.022	12	1,174.29		0.264	0.022	12	311+67.74	1174.03										
1,175.11	38.2	0.58359	0.0147	39.70	1,174.53		0.264	0.022	12	1,174.26		0.264	0.022	12	311+81.42	1174.00										
1,175.21	14.7	0.698655	0.0141	49.55	1,174.51		0.264	0.022	12	1,174.24		0.264	0.022	12	311+83.11	1173.98										
1,175.32	8.3	0.8092	0.0136	59.50	1,174.51		0.264	0.022	12	1,174.24		0.264	0.022	12	311+91.09	1173.98										
1,175.42	2.5	0.917268	0.0132	69.49	1,174.50		0.264	0.022	12	1,174.23		0.264	0.022	12	311+94.30	1173.97										
1,175.46	0.7	0.959574	0.0134	71.61	1,174.50		0.264	0.022	12	1,174.23		0.264	0.022	12	311+94.27	1173.97										
					1,174.36		0.264	0.022	12	1,174.09		0.264	0.022	12	0+00.00	1173.83	12	-0.022	-0.264		1,173.57					
1,175.20	10042930.4	0.962676	0.0143	67.32	1,174.24		0.264	0.022	12	1,173.97		0.264	0.022	12	0+11.70	1173.71										
1,175.06	10.0	0.833106	0.0138	60.37	1,174.23		0.264	0.022	12	1,173.96		0.264	0.022	12	0+12.36	1173.70										
1,174.84	11.8	0.643001	0.0127	50.63	1,174.20		0.264	0.022	12	1,173.93		0.264	0.022	12	0+14.66	1173.67										
1,174.65	17.2	0.484036	0.0118	41.02	1,174.17		0.264	0.022	12	1,173.90		0.264	0.022	12	0+17.37	1173.64										
1,174.46	19.8	0.322014	0.0102	31.57	1,174.14		0.264	0.022	12	1,173.87		0.264	0.022	12	0+20.58	1173.61										
1,174.25	24.3	0.16128	0.0072	22.40	1,174.09		0.264	0.022	12	1,173.82		0.264	0.022	12	0+24.48	1173.56										
1,174.24	47.6	0.15057	0.007	21.51	1,174.09		0.264	0.022	12	1,173.82		0.264	0.022	12	0+25.00	1173.56	12	-0.022	-0.264		1,173.30					
1,174.14	188.2	0.122145	0.0085	14.37	1,174.02		0.264	0.022	12	1,173.75		0.264	0.022	12	0+30.36	1173.49										
1,174.02	301.3	0.09672	0.012	8.06	1,173.93		0.264	0.022	12	1,173.66		0.264	0.022	12	0+38.01	1173.40										
1,173.90	386.8	0.07353	0.019	3.87	1,173.83		0.264	0.022	12	1,173.56		0.264	0.022	12	0+46.95	1173.30										
1,173.85	454.1	0.06688	0.022	3.04	1,173.79		0.264	0.022	12	1,173.52		0.264	0.022	12	0+50.00	1173.26	12	-0.022	-0.264		1,173.00	33	0.00000	0		1,173.00
1,173.75	223.9	0.03718	0.022	1.69	1,173.71		0.264	0.022	12	1,173.44		0.264	0.022	12	0+58.85	1173.18										
1,173.60	352.2	0.00924	0.022	0.42	1,173.59		0.264	0.022	12	1,173.32		0.264	0.022	12	0+66.48	1173.06										
1,173.48	943.5	0.00022	0.022	0.01	1,173.48		0.264	0.022	12	1,173.21		0.264	0.022	12	0+75.00	1172.95	12	-0.022	-0.264		1,172.69	33	0.00000	0		1,172.69
1,173.46	6318.2	0.00000	0.022	0.00	1,173.46		0.264	0.022	12	1,173.19		0.264	0.022	12	0+76.39	1172.93										
					1,173.13		0.264	0.022	12	1,172.86		0.264	0.022	12	1+00.00	1172.60	12	-0.022	-0.264		1,172.34	33	0.00000	0		1,172.34
					1,172.79		0.264	0.022	12	1,172.52		0.264	0.022	12	1+25.00	1172.26	12	-0.022	-0.264		1,172.00	33	-0.00267	-0.088	284.1	1,171.91
					1,172.44		0.264	0.022	12	1,172.17		0.264	0.022	12	1+50.00	1171.91	12	-0.022	-0.264		1,171.65	33	-0.00533	-0.176	284.1	1,171.47
										1,171.82		0.264	0.022	12	1+75.00	1171.56	12	-0.022	-0.264		1,171.30	33	-0.00800	-0.264	284.1	1,171.03
					1,171.35		-0.1321	-0.01	13.21	1,171.48		0.264	0.022	12	2+00.00	1171.22	12	-0.022	-0.264		1,170.96	33	-0.01067	-0.352	284.1	1,170.60
										1,171.20		0.264	0.022	12	2+25.00	1170.94	12	-0.022	-0.264		1,170.68	33	-0.01333	-0.44	284.1	1,170.24
					1,170.57				15.82	1,170.93		0.264	0.022	12	2+50.00	1170.67	12	-0.022	-0.264		1,170.41	33	-0.016	-0.528	284.1	1,169.88
										1,170.65		0.264	0.022	12	2+75.00	1170.39	12	-0.022	-0.264		1,170.13	33	-0.016	-0.528		1,169.60
					1,169.48					1,170.37		0.264	0.022	12	3+00.00	1170.11	12	-0.022	-0.264		1,169.85	33	-0.016	-0.528		1,169.32
										1,170.10		0.264	0.022	12	3+25.00	1169.84	12	-0.022	-0.264		1,169.58	33	-0.016	-0.528		1,169.05
										1,169.82		0.264	0.022	12	3+50.00	1169.56	12	-0.022	-0.264		1,169.30	33	-0.016	-0.528		1,168.77
										1,169.54		0.264	0.022	12	3+75.00	1169.28	12	-0.022	-0.264		1,169.02	33	-0.016	-0 528		1,168.49
										1,169.27		0.264	0.022	12	4+00.00	1169.01	12	-0.022	-0.264		1,168.75	33	-0.016	-0.528		1,168.22
										1,169.24		0.264	0.022	12	4+03.00	1168.98	12	-0.022	-0.264		1,168.72	33	-0.016	-0.528		1,168.19
										1,168.99		0.264	0.022	12	4+25.00	1168.73	12	-0.022	-0.264		1,168.47	30.25	-0.01679	-0.507788	1087.4	1,167.96
										1,168.72		0.264	0.022	12	4+50.00	1168.46	12	-0.022	-0.264		1,168.20	27.13	-0.01788	-0.47982	888.2	1,167.72
										1,168.44		0.264	0.022	12	4+75.00	1168.18	12	-0.022	-0.264		1,167.92	24	-0.01857	-0.445714	737.3	1,167.47
										1,168.16		0.264	0.022	12	5+00.00	1167.90	12	-0.022	-0.264		1,167.64	20.88	-0.01946	-0.406414	636.1	1,167.23
										1,167.89		0.264	0.022	12	5+25.00	1167.63	12	-0.022	-0.264		1,167.37	17.75	-0.02036	-0.361339	554.6	1,167.00
										1,167.61		0.264	0.022	12	5+50.00	1167.35	12	-0.022	-0.264		1,167.09	14.63	-0.02125	-0.310888	495.5	1,166.78
										1,167.39		0.264	0.022	12	5+71.00	1167.13	12	-0.022	-0.264		1,166.87	12	-0.022	-0.264	447.9	1,166.60
										1,167.35		0.264	0.022	12	5+75.00	1167.09	12	-0.022	-0.264		1,166.83	12	-0.022	-0.264		1,166.56
										1,167.12		0.264	0.022	12	6+00.00	1166.86	12	-0.022	-0.264		1,166.60	12	-0.022	-0.264		1,166.33
										1,166.94		0.264	0.022	12	6+25.00	1166.68	12	-0.022	-0.264		1,166.42	12	-0.022	-0.264		1,166.15
										1,166.79		0.264	0.022	12	6+50.00	1166.53	12	-0.022	-0.264		1,166.27	12	-0.022	-0.264		1,166.00
										1,166.66		0.264	0.022	12	6+75.00	1166.40	12	-0.022	-0.264		1,166.14	12	-0.022	-0.264		1,165.87
										1,166.53		0.264	0.022	12	7+00.00	1166.27	12	-0.022	-0.264		1,166.01	12	-0.022	-0.264		1,165.74
										1,166.39		0.264	0.022	12	7+25.00	1166.13	12	-0.022	-0.264		1,165.87	12	-0.022	-0.264		1,165.60
										1,166.26		0.264	0.022	12	7+50.00	1166.00	12	-0.022	-0.264		1,165.74	12	-0.022	-0.264		1,165.47
										1,166.13		0.264	0.022	12	7+75.00	1165.87	12	-0.022	-0.264		1,165.61	12	-0.022	-0.264		1,165.34
										1,166.00		0.264	0.022	12	8+00.00	1165.74	12	-0.022	-0.264		1,165.48	12	-0.022	-0.264		1,165.21
										1,165.86		0.264	0.022	12	8+25.00	1165.60	12	-0.022	-0.264		1,165.34	12	-0.022	-0.264		1,165.07
										1,165.73		0.264	0.022	12	8+50.00	1165.47	12	-0.022	-0.264		1,165.21	12	-0.022	-0.264		1,164.94
										1,165.64		0.264	0.022	12	8+66.00	1165.38	12	-0.022	-0.264		1,165.12	12	-0.022	-0.264		1,164.85
										1,165.60		0.264	0.022	12	8+75.00	1165.34	12	-0.022	-0.264		1,165.08	9.84	-0.022	-0.21648	189.4	1,164.86
										1,165.46		0.264	0.022	12	9+00.00	1165.20	12	-0.022	-0.264		1,164.94	3.84	-0.022	-0.08448	189.4	1,164.85
										1,165.38		0.264	0.022	12	9+16.00	1165.12	12	-0.022	-0.264		1,164.86	0				

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SUPER ELEVATIONS - SR21 SOUTHBOUND LANES

WAY-21-5.74

CALC BY MJS
CHKD BY BAD

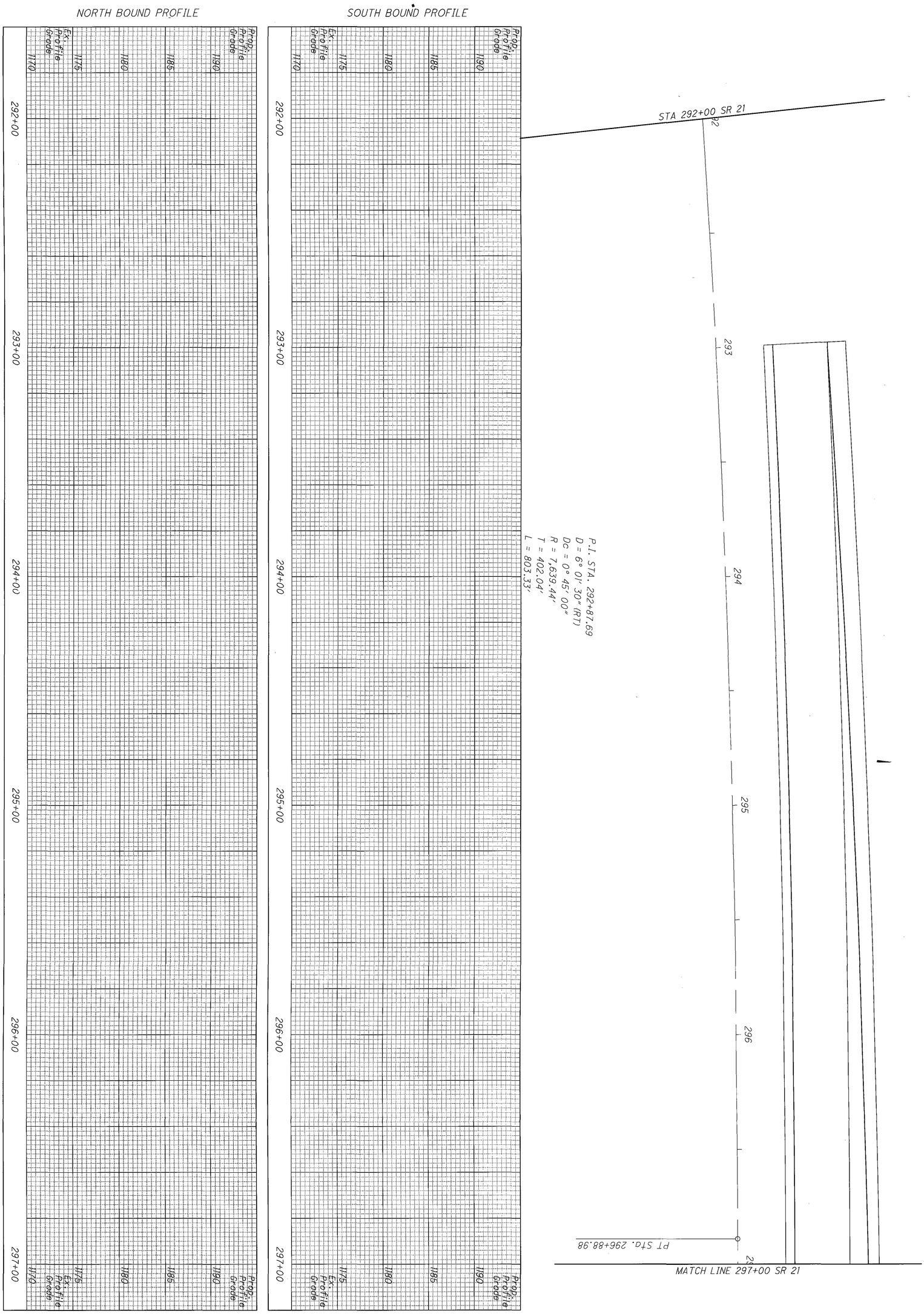
LEFT EDGE OF DRIVING LANE					LEFT EDGE OF PAVEMENT					CENTERLINE		RIGHT EDGE OF DRIVING LANE					RIGHT EDGE OF PAVEMENT				
EDGE ELEVATION	TRANSITION RATE	ELEVATION CORRECTION	CROSS SLOPE	WIDTH FROM DRIVING LANE	EDGE ELEVATION	TRANSITION RATE	ELEVATION CORRECTION	CROSS SLOPE	WIDTH FROM CENTERLINE	STATION	PROFILE GRADE	WIDTH FROM CENTERLINE	CROSS SLOPE	ELEVATION CORRECTION	TRANSITION RATE	EDGE OF DRIVING LANE ELEVATION	WIDTH FROM DRIVING LANE	CROSS SLOPE	ELEVATION CORRECTION	TRANSITION RATE	EDGE ELEVATION
1,175.20		-0.03392	-0.016	2.12	1,175.24		-0.192	-0.016	12	48+71.97	1175.43										
1,175.09	402.9	-0.04144	-0.016	2.59	1,175.13		-0.192	-0.016	12	48+75.00	1175.32										
1,175.06	357.8	-0.05248	-0.016	3.28	1,175.11		-0.192	-0.016	12	48+78.95	1175.30										
1,174.84	299.9	-0.08512	-0.016	5.32	1,174.93		-0.192	-0.016	12	48+88.74	1175.12										
1,174.65	237.9	-0.12576	-0.016	7.86	1,174.78		-0.192	-0.016	12	48+98.41	1174.97										
1,174.61	216.0	-0.13312	-0.016	8.32	1,174.75		-0.192	-0.016	12	49+00.00	1174.94										
1,174.46	194.6	-0.17392	-0.016	10.87	1,174.64		-0.192	-0.016	12	49+07.94	1174.83										
1,174.25	155.3	-0.2336	-0.016	14.60	1,174.49		-0.192	-0.016	12	49+17.21	1174.68										
1,174.09	90.7	-0.31952	-0.016	19.97	1,174.41		-0.192	-0.016	12	49+25.00	1174.60										
1,174.14	5.8	-0.251844	-0.0124	20.31	1,174.39	9.0	-0.1488	-0.0124	12	49+25.39	1174.54										
1,174.02	352.0	-0.270339	-0.0097	27.87	1,174.29	200.9	-0.1164	-0.0097	12	49+31.90	1174.41										
1,173.90	96.2	-0.31648	-0.0086	36.80	1,174.22	336.4	-0.1032	-0.0086	12	49+36.34	1174.32										
1,173.75	25.3	-0.413672	-0.0089	46.48	1,174.16	683.3	-0.1068	-0.0089	12	49+38.80	1174.27										
1,173.60	12.9	-0.53542	-0.0095	56.36	1,174.14	218.1	-0.114	-0.0095	12	49+40.37	1174.25										
1,173.46	5.8	-0.6633	-0.0100	66.33	1,174.12	123.3	-0.12	-0.0100	12	49+41.11	1174.24										
										48+67.10	1175.46	12.00	0	0		1,175.46	0.00	0	0.00		1,175.46
										48+69.22	1175.42	12.00	0	0		1,175.42	0.01	0	0		1,175.42
										48+75.00	1175.32	12.00	0.003	0.036	160.6	1,175.36	0.21	0.003	0.00063	9174.6	1,175.36
										48+79.21	1175.25	12.00	0.006	0.072	116.9	1,175.32	0.49	0.006	0.00294	1822.5	1,175.32
										48+89.14	1175.09	12.00	0.009	0.108	275.8	1,175.20	1.63	0.009	0.01467	846.5	1,175.21
										48+98.95	1174.95	12.00	0.009	0.108		1,175.06	3.53	0.014	0.04942	282.3	1,175.11
										49+00.00	1174.94	12.00	0.009	0.108		1,175.05	3.85	0.009	0.03465	71.1	1,175.08
										49+08.13	1174.83	12.00	0.0112	0.1344	308.0	1,174.96	7.44	0.0112	0.083328	167.0	1,175.05
										49+16.05	1174.73	12.00	0.0116	0.1392	1650.0	1,174.87	13.50	0.0116	0.1566	108.1	1,175.03
										49+22.23	1174.64	12.00	0.0116	0.1392		1,174.78	21.33	0.0115	0.245295	69.7	1,175.02
										49+25.00	1174.60	12.00	0.011	0.13200	384.7	1,174.73	26.85	0.0108	0.28998	62.0	1,175.02
										49+26.30	1174.58	12.00	0.011	0.132		1,174.71	30.44	0.01	0.3044	90.2	1,175.02
										49+29.28	1174.54	12.00	0.01	0.12	248.3	1,174.66	39.98	0.0093	0.371814	44.2	1,175.03
										49+31.79	1174.50	12.00	0.01	0.12		1,174.62	49.66	0.0088	0.437008	38.5	1,175.06
										49+33.84	1174.47	12.00	0.009	0.108	170.8	1,174.58	59.45	0.0086	0.51127	27.6	1,175.09
										49+35.43	1174.44	12.00	0.009	0.108		1,174.55	69.32	0.0087	0.603084	17.3	1,175.15
										49+36.54	1174.42	12.00	0.009	0.108		1,174.53	79.26	0.0085	0.67371	15.7	1,175.20
										49+37.18	1174.41	12.00	0.009	0.108		1,174.52	89.24	0.0084	0.749616	8.4	1,175.27
										49+37.34	1174.41	12.00	0.009	0.108		1,174.52	99.23	0.0085	0.843455	1.7	1,175.36
1,171.89	115.2	-0.99862	-0.0098	101.90	1,172.89		-0.1176	-0.0098	12	50+52.41	1173.01										
1,171.99	1.4	-0.90062	-0.0098	91.90	1,172.89		-0.1176	-0.0098	12	50+52.27	1173.01										
1,172.10	3.3	-0.794527	-0.0097	81.91	1,172.89	291.7	-0.1164	-0.0097	12	50+52.62	1173.01										
1,172.18	7.8	-0.690624	-0.0096	71.94	1,172.87	675.0	-0.1152	-0.0096	12	50+53.43	1172.99										
1,172.26	13.6	-0.595488	-0.0096	62.03	1,172.85		-0.1152	-0.0096	12	50+54.72	1172.97										
1,172.32	18.6	-0.500928	-0.0096	52.18	1,172.82		-0.1152	-0.0096	12	50+56.48	1172.94										
1,172.42	18.7	-0.38187	-0.0090	42.43	1,172.80	309.7	-0.108	-0.0090	12	50+58.71	1172.91										
1,172.55	18.5	-0.23616	-0.0072	32.80	1,172.78	124.5	-0.0864	-0.0072	12	50+61.40	1172.87										
1,172.62	33.4	-0.12914	-0.0055	23.48	1,172.75	175.0	-0.066	-0.0055	12	50+64.97	1172.82										
1,172.60	108.0	-0.07645	-0.0050	15.29	1,172.68	948.3	-0.06	-0.0050	12	50+70.66	1172.74										
1,172.53	1057.2	-0.072345	-0.0065	11.13	1,172.60	241.1	-0.08	-0.0065	12	50+75.00	1172.68										
1,172.49	420.0	-0.06475	-0.0074	8.75	1,172.55	295.4	-0.0888	-0.0074	12	50+78.19	1172.64										
1,172.38	292.4	-0.03424	-0.0080	4.28	1,172.41	1238.9	-0.096	-0.0080	12	50+87.11	1172.51										
1,172.18	1907.8	-0.029145	-0.0145	2.01	1,172.21	124.6	-0.174	-0.0145	12	50+96.83	1172.38										
1,172.11	657.0	-0.02432	-0.016	1.52	1,172.14	176.1	-0.192	-0.016	12	51+00.00	1172.33										
1,172.05	520.1	-0.01136	-0.016	0.71	1,172.06		-0.192	-0.016	12	51+06.74	1172.25										
1,171.91	974.6	-0.00112	-0.016	0.07	1,171.91		-0.192	-0.016	12	51+16.72	1172.10										
1,171.84	8928.6	0	-0.016	0	1,171.84		-0.192	-0.016	12	51+26.72	1172.03										
1,171.80		0	-0.016	0	1,171.80		-0.192	-0.016	12	51+36.72	1171.99										
1,171.78		0	-0.016	0	1,171.78		-0.192	-0.016	12	51+40.00	1171.97										
										50+59.66	1172.89	12	0.0115	0.138	582.2	1,173.03	67.37	0.0115	0.774755	103.7	1,173.80
										50+60.19	1172.89	12	0.01140	0.1368	441.7	1,173.03	57.39	0.01140	0.654246	4.4	1,173.68
										50+61.56	1172.86	12	0.01160	0.1392	570.8	1,173.00	47.48	0.01160	0.550768	13.2	1,173.55
										50+63.81	1172.83	12	0.01120	0.1344	468.8	1,172.96	37.75	0.01120	0.4228	17.6	1,173.39
										50+68.03	1172.78	12	0.01080	0.1296	879.2	1,172.91	28.71	0.01080	0.310068	37.4	1,173.22
										50+74.35	1172.69	12	0.00990	0.1188	585.2	1,172.81	20.99	0.00990	0.207801	61.8	1,173.02
										50+75.00	1172.68	12	0.00900	0.11	60.2	1,172.79	20.38	0.00900	0.18342	26.7	1,172.97
										50+82.38	1172.58	12	0.00800	0.10	615.0	1,172.68	15.08	0.00800	0.12064	117.6	1,172.80
										50+91.58	1172.45	12	0.00200	0.02	127.8	1,172.47	11.20	0.00200	0.0224	93.6	1,172.50
										51+00.00	1172.33	12	-0.005	-0.06	100.2	1,172.27	8.46	-0.005	-0.0423	130.1	1,172.23
										51+01.10	1172.32	12	-0.006	-0.072	91.7	1,172.25	8.14	-0.006	-0.04884	168.2	1,172.20
										51+10.76	1172.19	12	-0.011	-0.132	161.0	1,172.06	5.56	-0.011	-0.06116	784.1	1,172.00
										51+20.53	1172.04	12	-0.0114	-0.1368	2035.4	1,171.90	3.46	-0.0114	-0.039444	449.9	1,171.86
										51+30.40	1172.02	12	-0.016	-0.192	178.8	1,171.83	1.85	-0.016	-0.0296	1002.6	1,171.80
										51+39.99	1171.97	12	-0.016	-0.192		1,171.78	0.77	-0.016	-0.01232	555.0	1,171.77

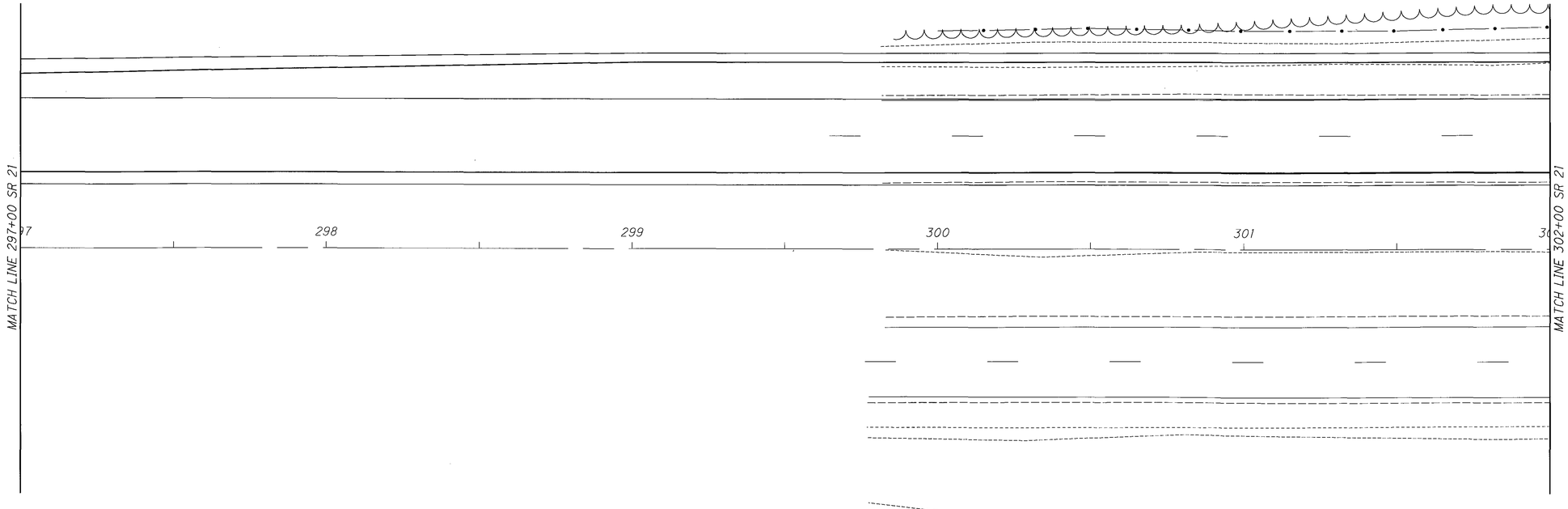
SUPER ELEVATIONS - CR150

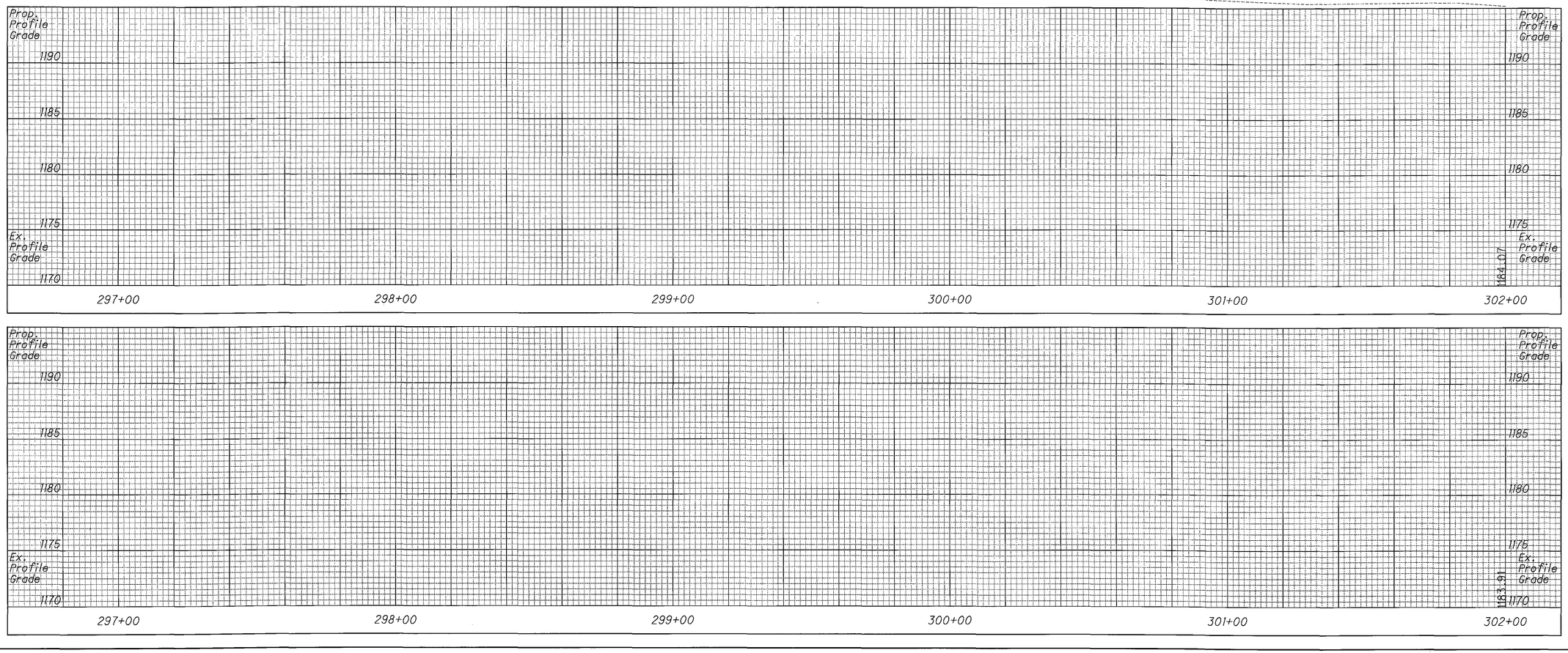
WAY-21-5.74

I:\projects\81797\roadway\sheets\[81797GE001.xls]CR150 (RADII) 6/1/2007 7:28

DESIGN FILE: I:\projects\81797\roadway\sheets\81797GP001.dgn
WORKSTATION: mschafra DATE: 6/1/2007







N

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED

CHECKED BAD

PLAN AND PROFILE SR 21

WAY-21-5.74

29
83

DESIGN FILE: I:\projects\81797\roadway\sheets\81797GP002.dgn
WORKSTATION: mschafra DATE: 6/1/2007

DESIGN FILE: I:\projects\81797\roadway\sheets\81797GP003.dgn
WORKSTATION: mschafra DATE: 6/1/2007

N

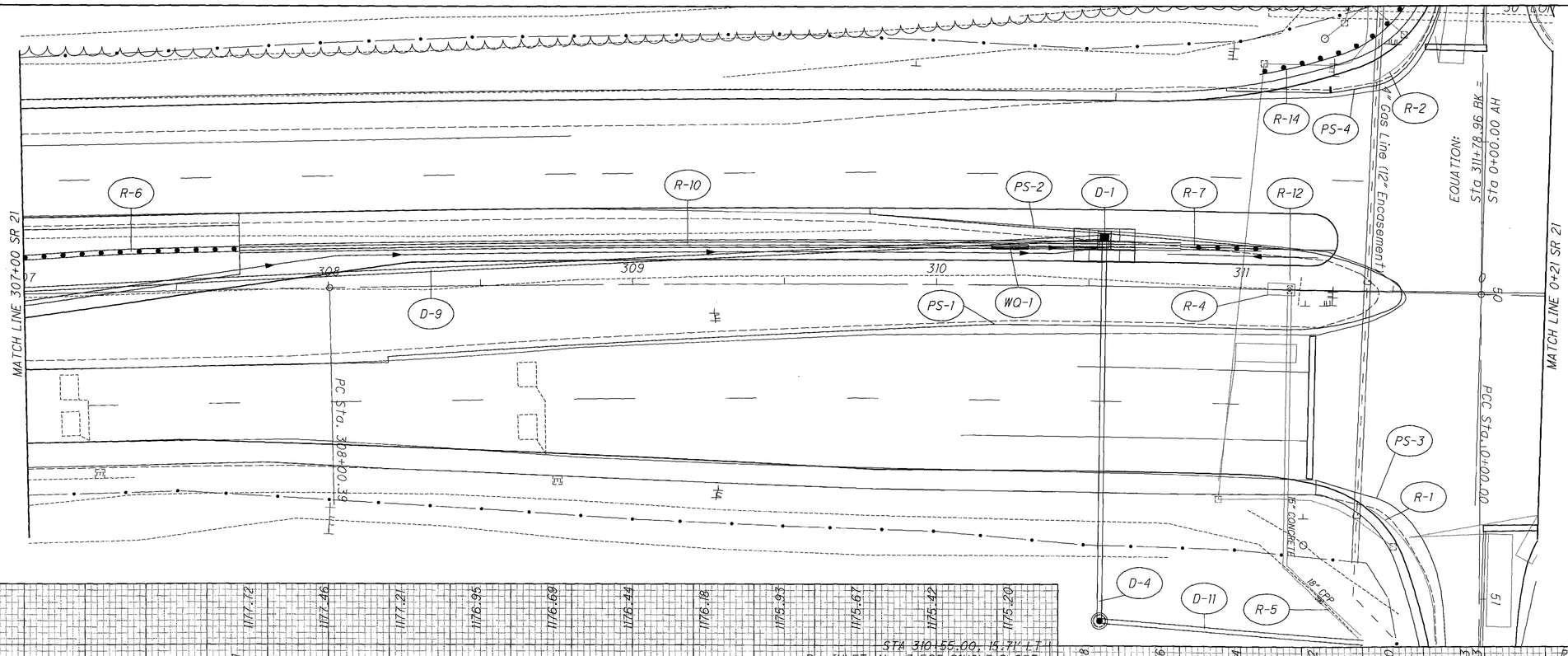
0 10 20 40
HORIZONTAL SCALE IN FEET

CALCULATED

CHECKED BAD

PLAN AND PROFILE SR 21

WAY-21-5.74



N

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED

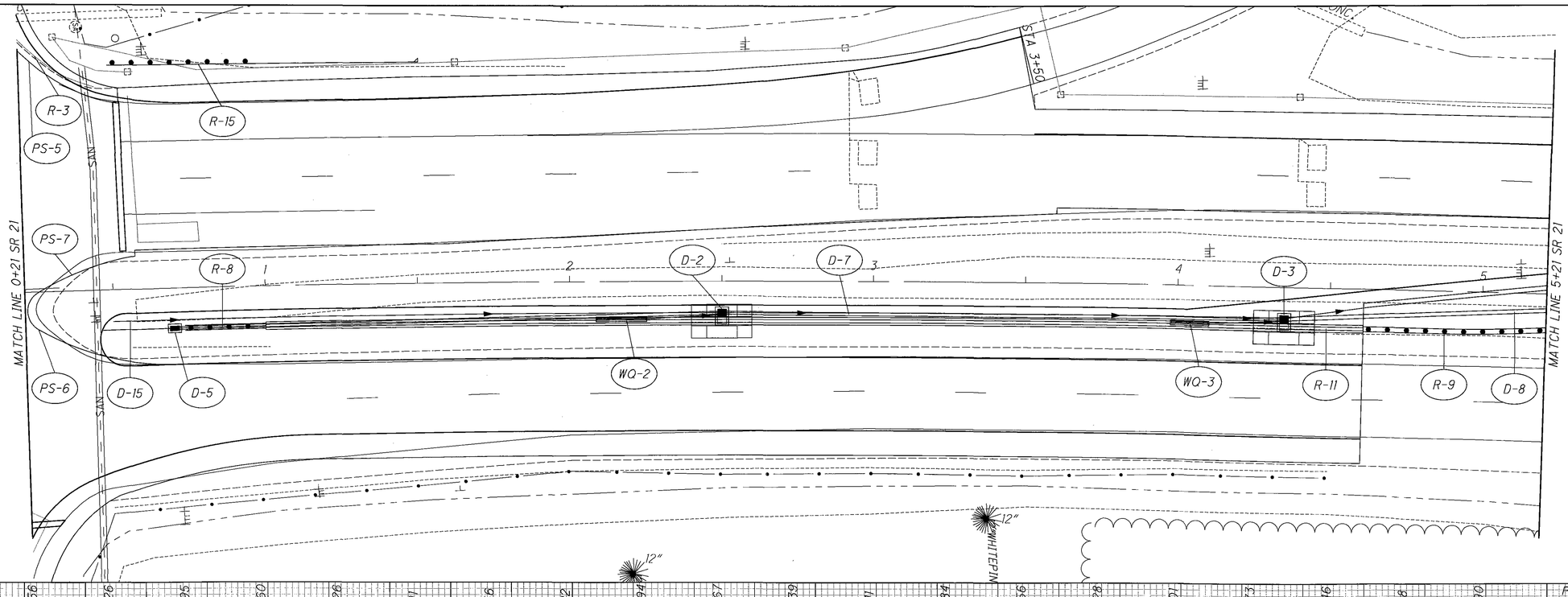
CHECKED BAD

PROFILE SR21

PLAN AND PROFILE

WAY-21-5.74

DESIGN FILE: I:\projects\81797\roadway\sheets\81797GP004.dgn
WORKSTATION: mschafra DATE: 6/1/2007



HORIZONTAL SCALE IN FEET
0 10 20 40

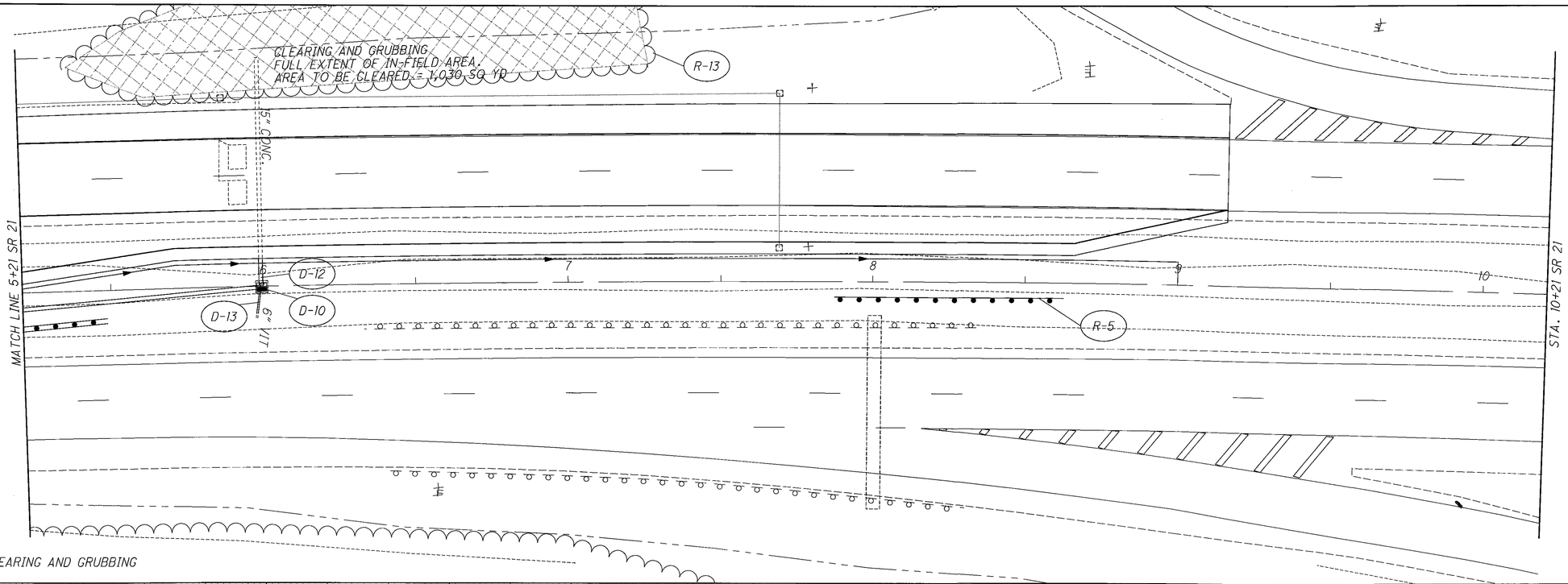
CALCULATED
CHECKED BAD

PLAN AND PROFILE SR 21

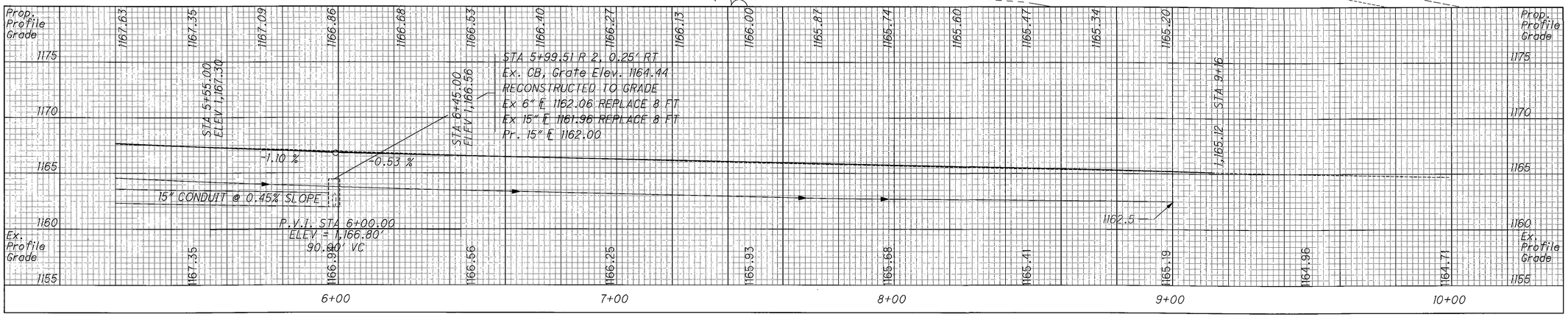
WAY-21-5.74

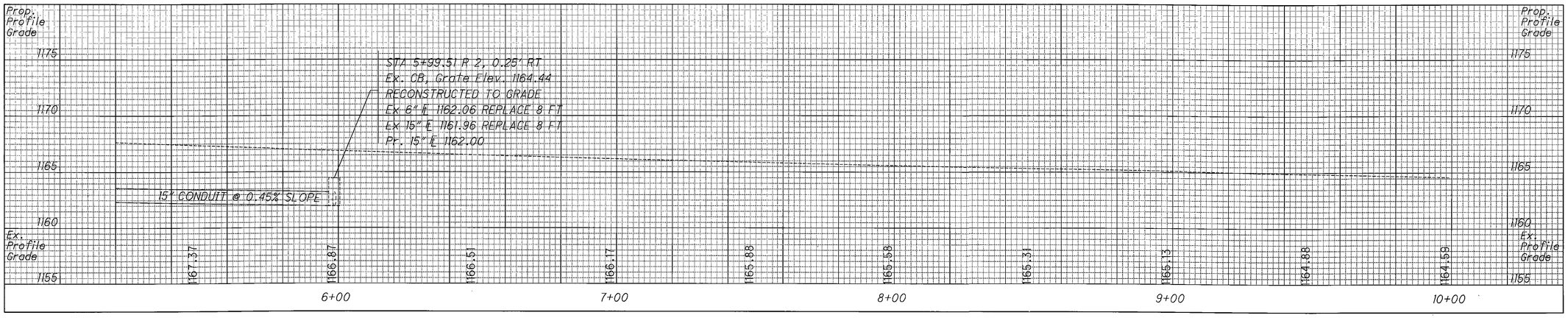
32
83

DESIGN FILE: I:\projects\81797\roadway\sheets\81797GP005.dgn
WORKSTATION: mschafra DATE: 6/1/2007



CLEARING AND GRUBBING





DESIGN FILE: I:\projects\81797\roadway\sheets\81797GP006.dgn
WORKSTATION: mschafra DATE: 6/1/2007

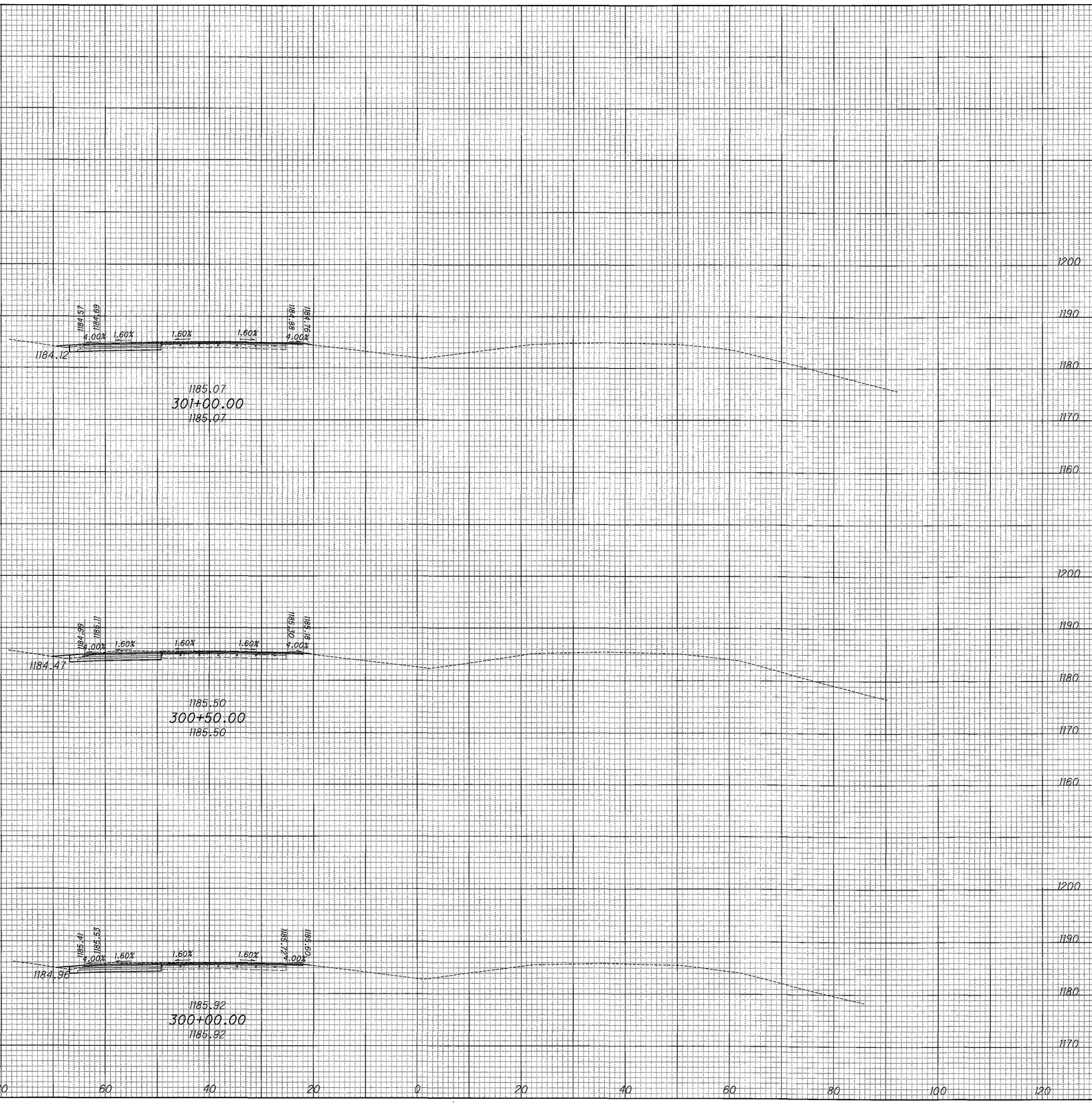
HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED
CHECKED BAD

PLAN AND PROFILE SR 21

WAY-21-5.74

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
	95	32	1		
17.1				61	2
	97	34	1		
17.9				62	2
	97	34	1		
16.8				0	0
	289			123	4



DESIGN FILE: I: \projects\81797\roadway\sheets\81797XS001.dgn
WORKSTATION:mschafra DATE: 6/1/2007

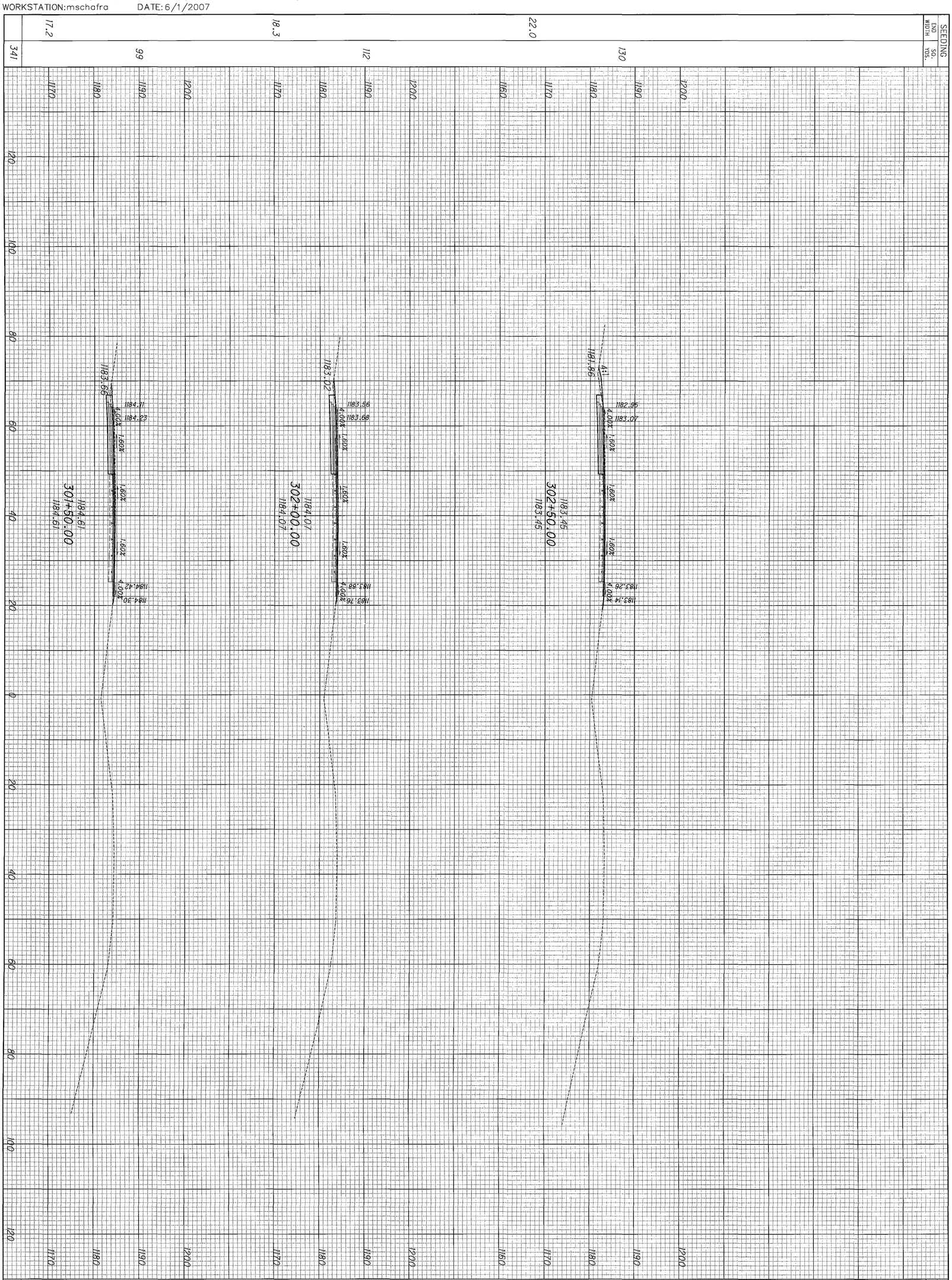
CALCULATED MJS
CHECKED BAD

CROSS SECTIONS STA 300+00 TO 301+00

WAY-21-5.74

34
83

DESIGN FILE: I:\projects\81797\roadway\sheets\81797XS001.dgn
WORKSTATION:mschafra DATE: 6/1/2007



35/83

WAY-21-5.74

CROSS SECTIONS 301+50 TO 302+50

CALCULATED MJS
CHECKED BAD

SEEDING	
END WIDTH	SQ. YDS.
	241
41.5	
	236
43.2	
	237
41.8	
	185
24.8	
	899

END AREA		VOLUME	
CUT	FILL	CUT	FILL
29	13		
		54	32
29	21		
		55	35
31	17		
		60	20
34	5		
		63	8
		232	95

CALCULATED MJS
CHECKED BAD

CROSS SECTIONS 303+00 TO 304+50

WAY-21-5.74

36
83

1180.79 1180.91 4.00% 0.30% 1.35% 1.60% 1180.35 1180.21 4.00% 4:1 1179.31 1181.11 304+50.00 1181.11
1180.64 1180.81 4.00% 1.60% 1.60% 1.60% 1181.00 1180.67 4.00% 3:1 1178.57 1181.19 304+50.00 1181.11
1181.36 1181.48 4.00% 0.30% 1.35% 1.60% 1181.18 1181.37 4.00% 4:1 1179.45 1181.68 304+00.00 1181.68
1181.17 1181.33 4.00% 1.60% 1.60% 1.60% 1181.52 1181.20 4.00% 3:1 1179.02 1181.71 304+00.00 1181.67
1181.90 1182.02 4.00% 1.00% 1.35% 1.60% 1182.11 1182.29 4.00% 4:1 1179.92 1182.30 303+50.00 1182.30
1181.75 1181.91 5.89% 1.60% 1.60% 1.60% 1182.05 1181.72 4.00% 3:1 1179.61 1182.24 303+50.00 1182.22
1182.35 1182.47 4.00% 1.60% 1.60% 1.60% 1182.28 1182.54 4.00% 4:1 1180.22 1182.85 303+00.00 1182.85
STA 302+89.50, 0.16' RT
CB, GRATE ELEV 1180.15'
1182.79 303+00.00 1182.79

1190 1180 1170 1160 1200 120 100 80 60 40 20 0 20 40 60 80 100 120

DESIGN FILE: I: \projects\81797\roadway\sheets\81797XS001.dgn
WORKSTATION:mschafra DATE:6/1/2007

SEEDING	
END WIDTH	SQ. YDS.
	273
43.1	
	237
41.9	
	239
43.9	
	247
45.2	
	996

END AREA		VOLUME	
CUT	FILL	CUT	FILL
27	20		
		51	33
28	17		
		52	33
28	19		
		53	31
29	14		
		54	25
		210	122

CALCULATED MJS
CHECKED BAD

CROSS SECTIONS 305+00 TO 306+50

WAY-21-5.74

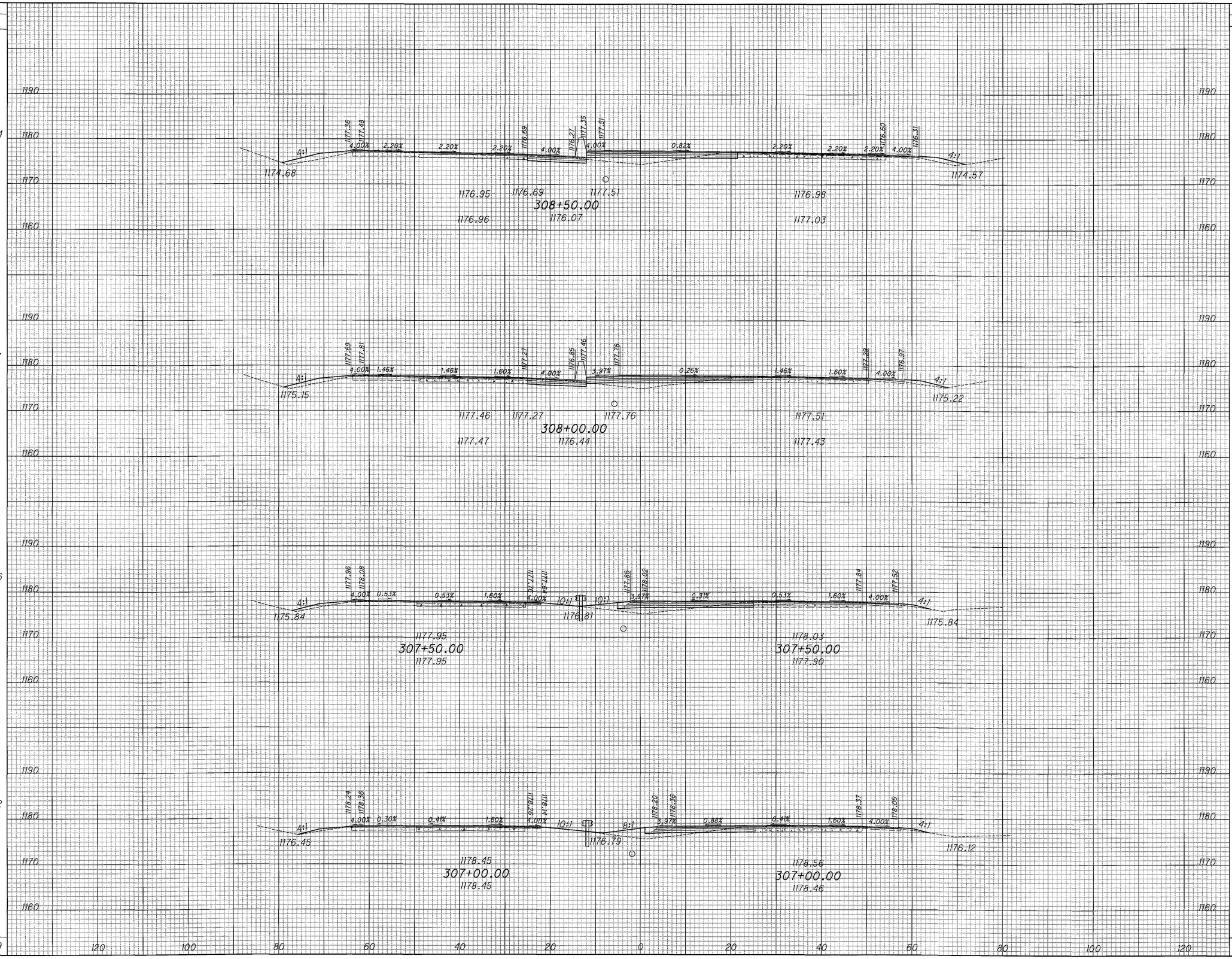
37
83

STA 306+50.00, 0.00' LT
Pr. CB, No. 8
GRATE ELEV 1176.31
15" ℄ = 1172.00

1176.94 | 1179.01 | 306+50.00 | 1179.01
1176.31 | 1179.08 | 306+50.00 | 1178.99
1177.40 | 1179.59 | 306+00.00 | 1179.59
1176.78 | 1179.61 | 306+00.00 | 1179.53
1177.85 | 1180.08 | 305+50.00 | 1180.08
1177.36 | 1180.13 | 305+50.00 | 1180.04
1178.37 | 1180.57 | 305+00.00 | 1180.57
1177.98 | 1180.66 | 305+00.00 | 1180.56

DESIGN FILE: i:\projects\81797\roadway\sheets\81797XS001.dgn
WORKSTATION:mschafra DATE:6/1/2007

SEEDING	
END WIDTH	SQ. YDS.
	204
35.9	
	197
34.8	
	236
50.1	
	292
55.2	
	929



END AREA		VOLUME	
CUT	FILL	CUT	FILL
40	47		
		71	78
36	38		
		51	72
19	40		
		38	66
23	32		
		46	48
		206	264

CALCULATED MJS
CHECKED BAD

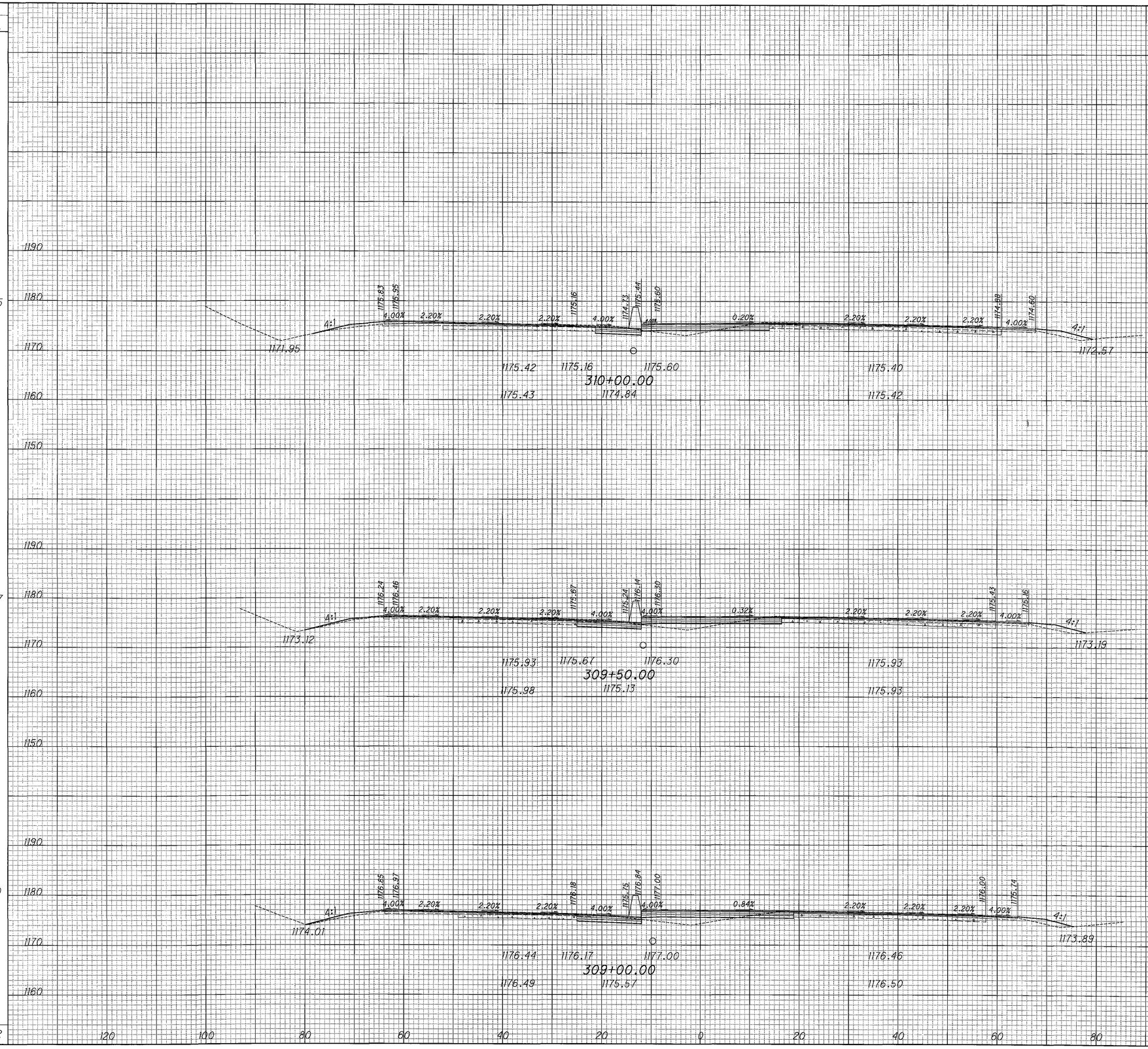
CROSS SECTIONS 307+00 TO 308+50

WAY-21-5.74

38
83

DESIGN FILE: i:\projects\81797\roadway\sheets\81797XS001.dgn
WORKSTATION:mschafra DATE: 6/1/2007

SEEDING	
END WIDTH	SQ. YDS.
36.4	205
38.1	207
37.6	210
	622



END AREA		VOLUME	
CUT	FILL	CUT	FILL
39	22		
43	23		
43	36		
		232	173
		76	42
		79	55
		77	76

CALCULATED MJS
CHECKED BAD

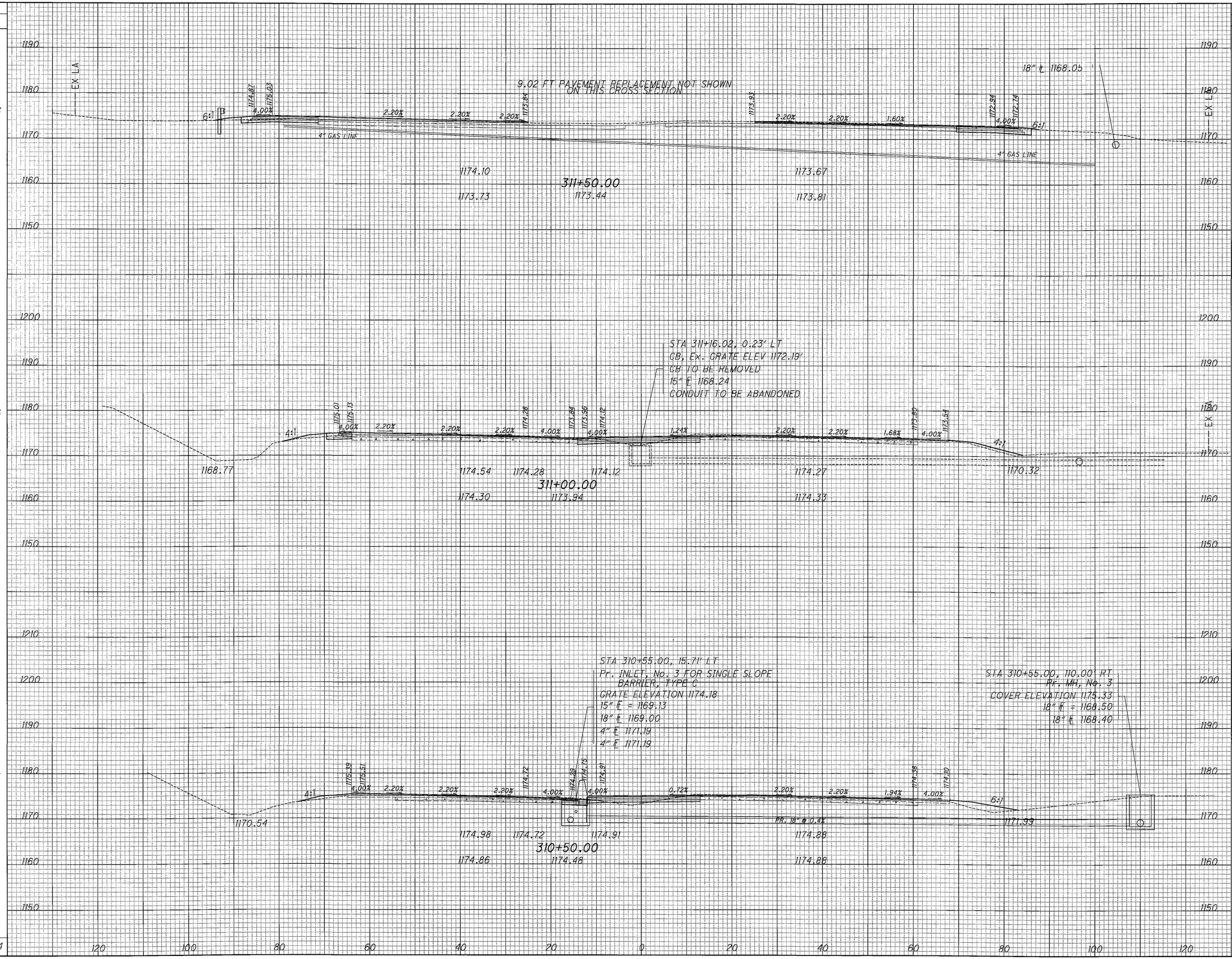
CROSS SECTIONS STA 309+00 TO 310+00

WAY-21-5.74

39
83

DESIGN FILE: I: \projects\81797\roadway\sheets\817797XS001.dgn
WORKSTATION:mschafra DATE:6/1/2007

SEEDING	
END WIDTH	SQ. YDS.
	213
23.5	
	176
39.8	
	215
37.4	
	604



END AREA		VOLUME	
CUT	FILL	CUT	FILL
47	6		
		83	18
43	13		
		72	34
35	23		
		69	42
		224	94

CALCULATED MJS
CHECKED BAD

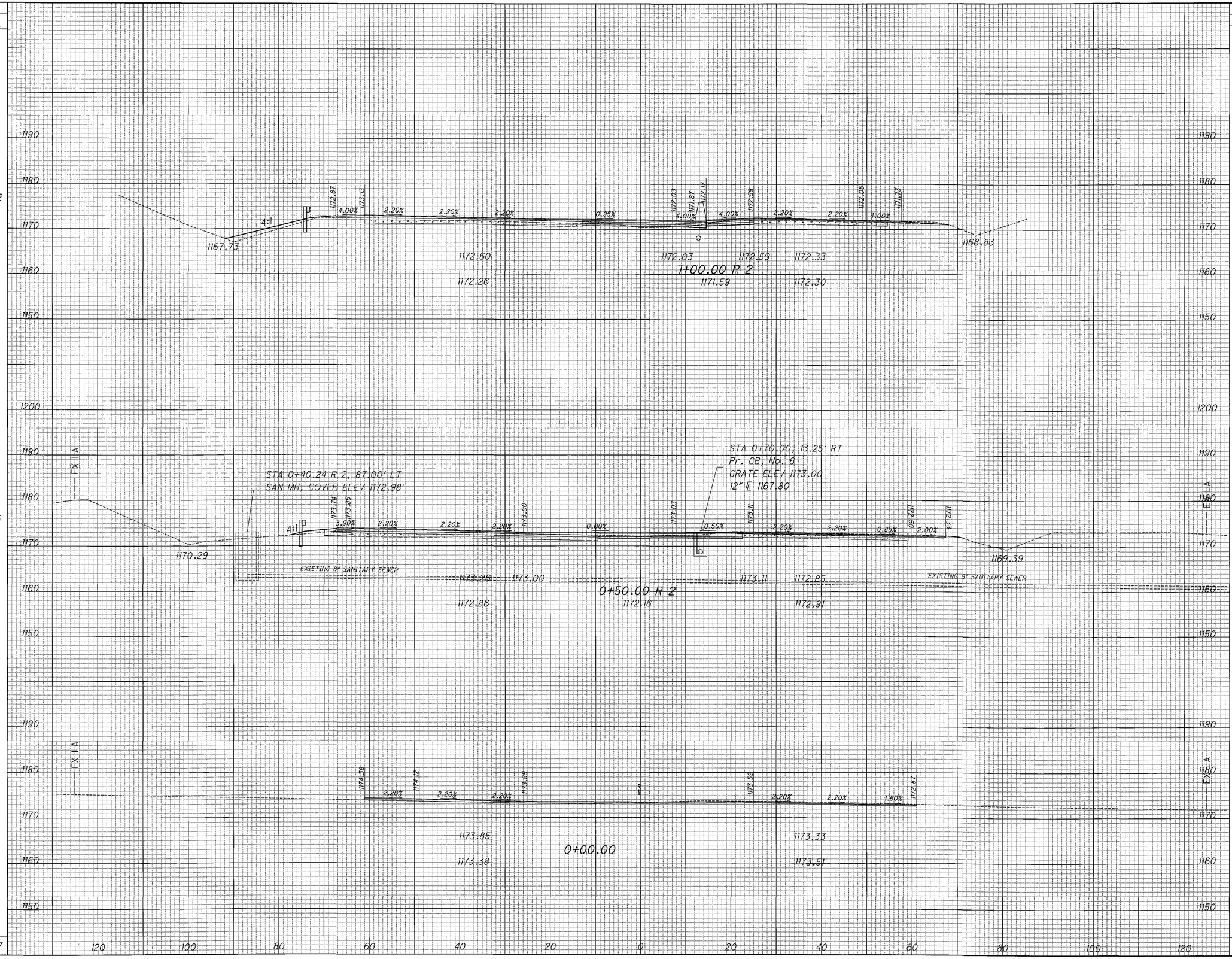
CROSS SECTIONS STA 310+50 TO 311+50

WAY-21-5.74

40
83

DESIGN FILE: I: \projects\81797\roadway\sheets\81797XS001.dgn
WORKSTATION:mschafra DATE: 6/1/2007

SEEDING	
END WIDTH	SQ. YDS.
	242
45.4	
	195
24.7	
	437



END AREA		VOLUME	
CUT	FILL	CUT	FILL
29	19		
		70	21
47	4		
		59	4
		129	25

CALCULATED MJS
CHECKED BAD

CROSS SECTIONS STA 0+00 TO 1+00

WAY-21-5.74

41
83

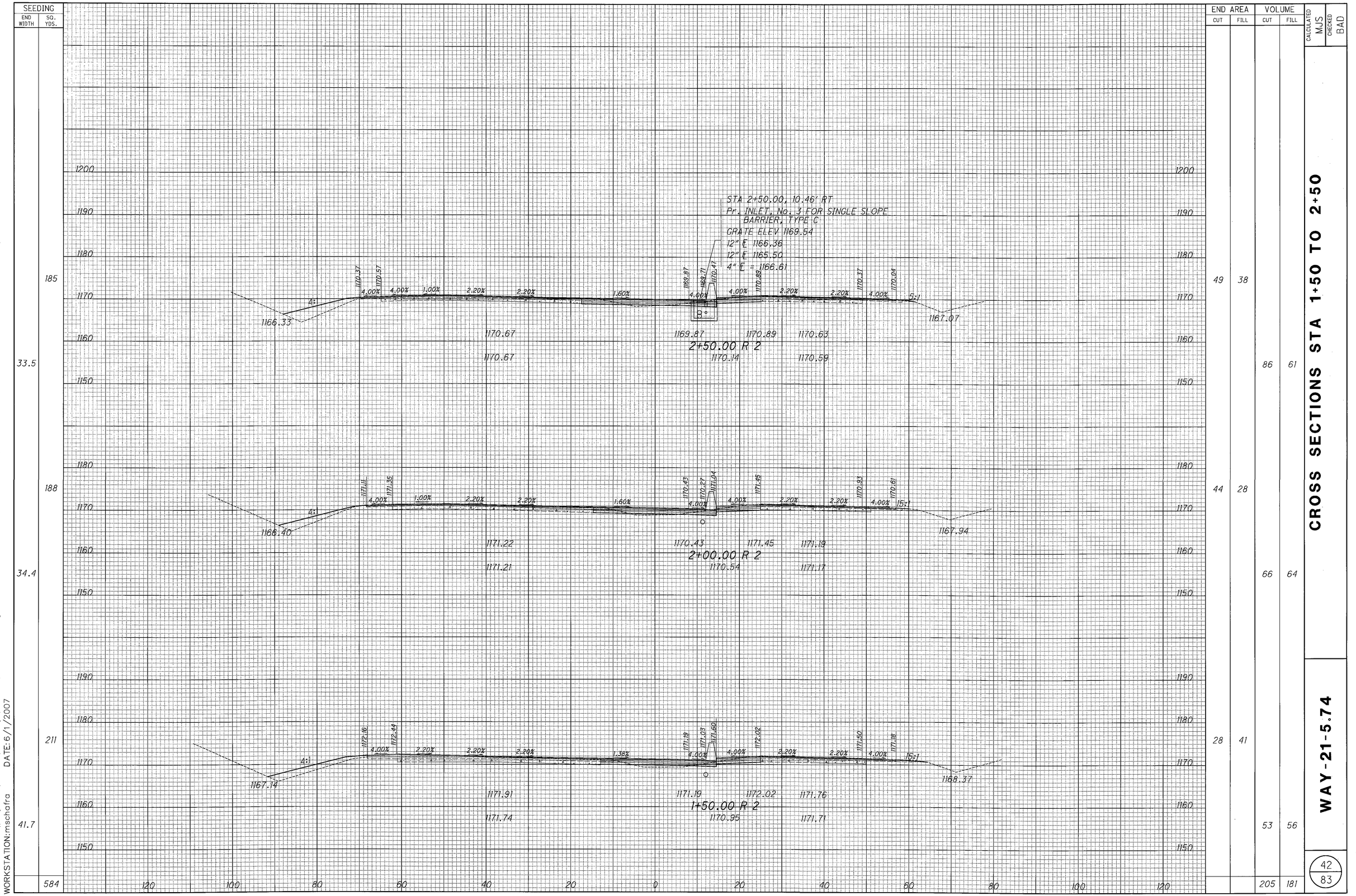
DESIGN FILE: I: \projects\81797\roadway\sheets\81797XS001.dgn
WORKSTATION:mschafra DATE:6/1/2007

SEEDING END WIDTH	SEEDING SQ. YDS.	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
	185	49	38		
33.5				86	61
	188	44	28		
34.4				66	64
	211	28	41		
41.7				53	56
	584			205	181

CALCULATED MJS
CHECKED BAD

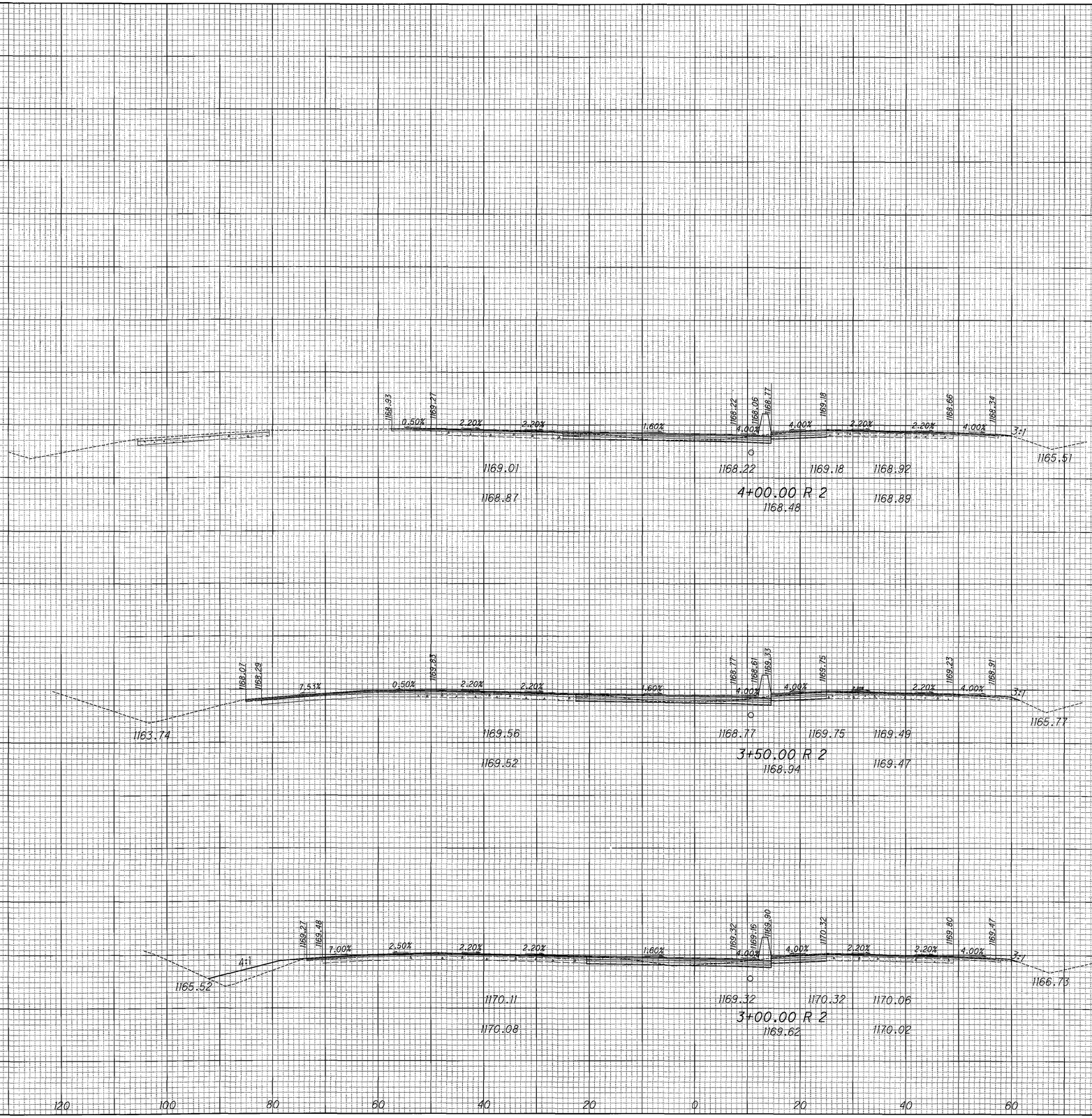
CROSS SECTIONS STA 1+50 TO 2+50

WAY-21-5.74



DESIGN FILE: I: \projects\81797\roadway\sheets\817797XS001.dgn
WORKSTATION:mschafra DATE:6/1/2007

SEEDING	
END WIDTH	SQ. YDS.
	82
13.1	
	77
14.6	
	133
33.2	
	292



END AREA		VOLUME	
CUT	FILL	CUT	FILL
49	0		
		95	2
54	1		
		99	30
54	31		
		95	64
		289	96

CALCULATED MJS
CHECKED BAD

CROSS SECTIONS STA 3+00 TO 4+00

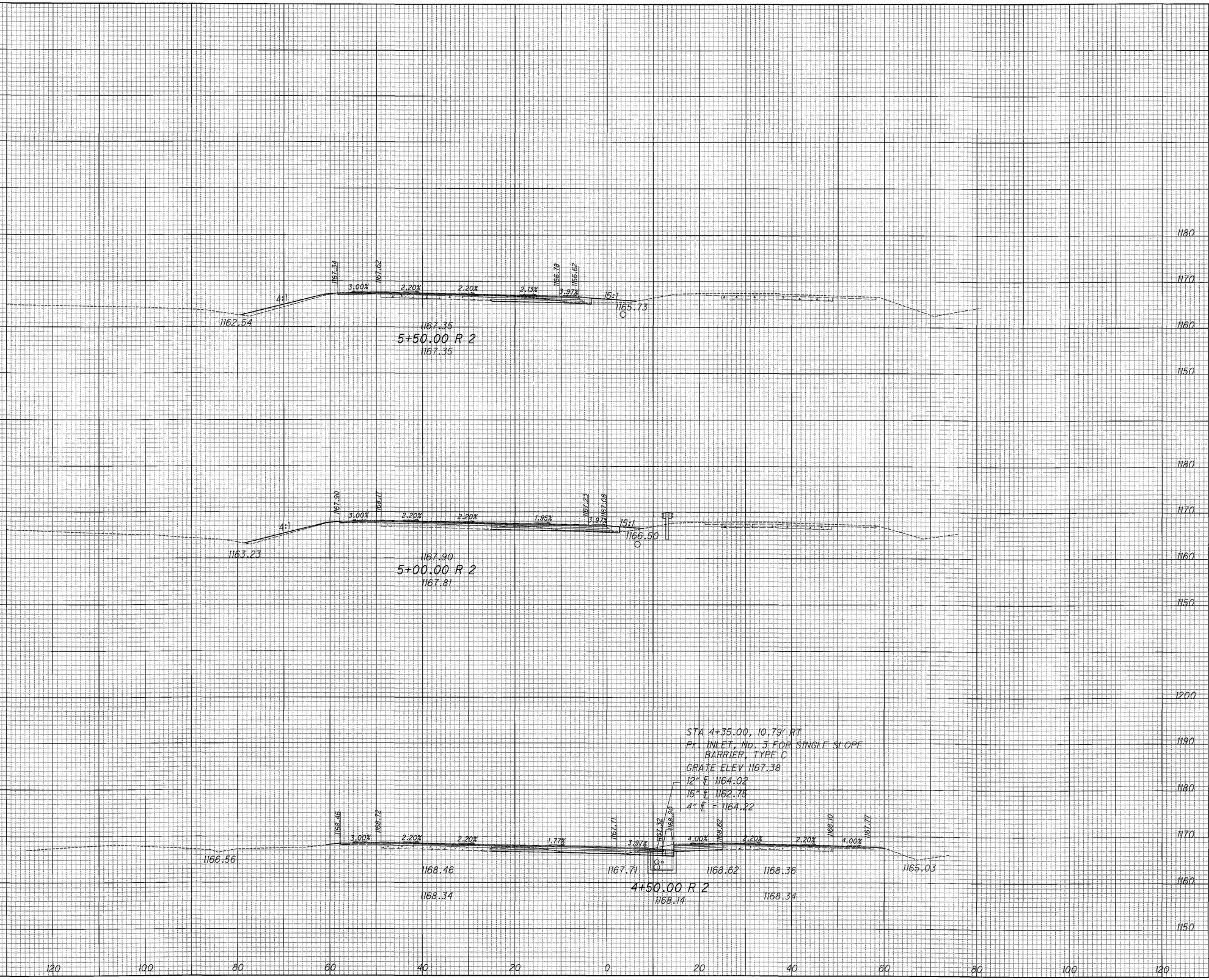
WAY-21-5.74

DESIGN FILE: I: \projects\81797\roadway\sheets\81797XS001.dgn
WORKSTATION:mschafra DATE:6/1/2007

SEEDING	
END WIDTH	SQ. YDS.
44.5	242
39.3	233
16.3	155
	630

END AREA		VOLUME	
CUT	FILL	CUT	FILL
24	19		
19	14	40	30
54	9	68	21
		96	9
		204	60

CALCULATED MJS
CHECKED BAD

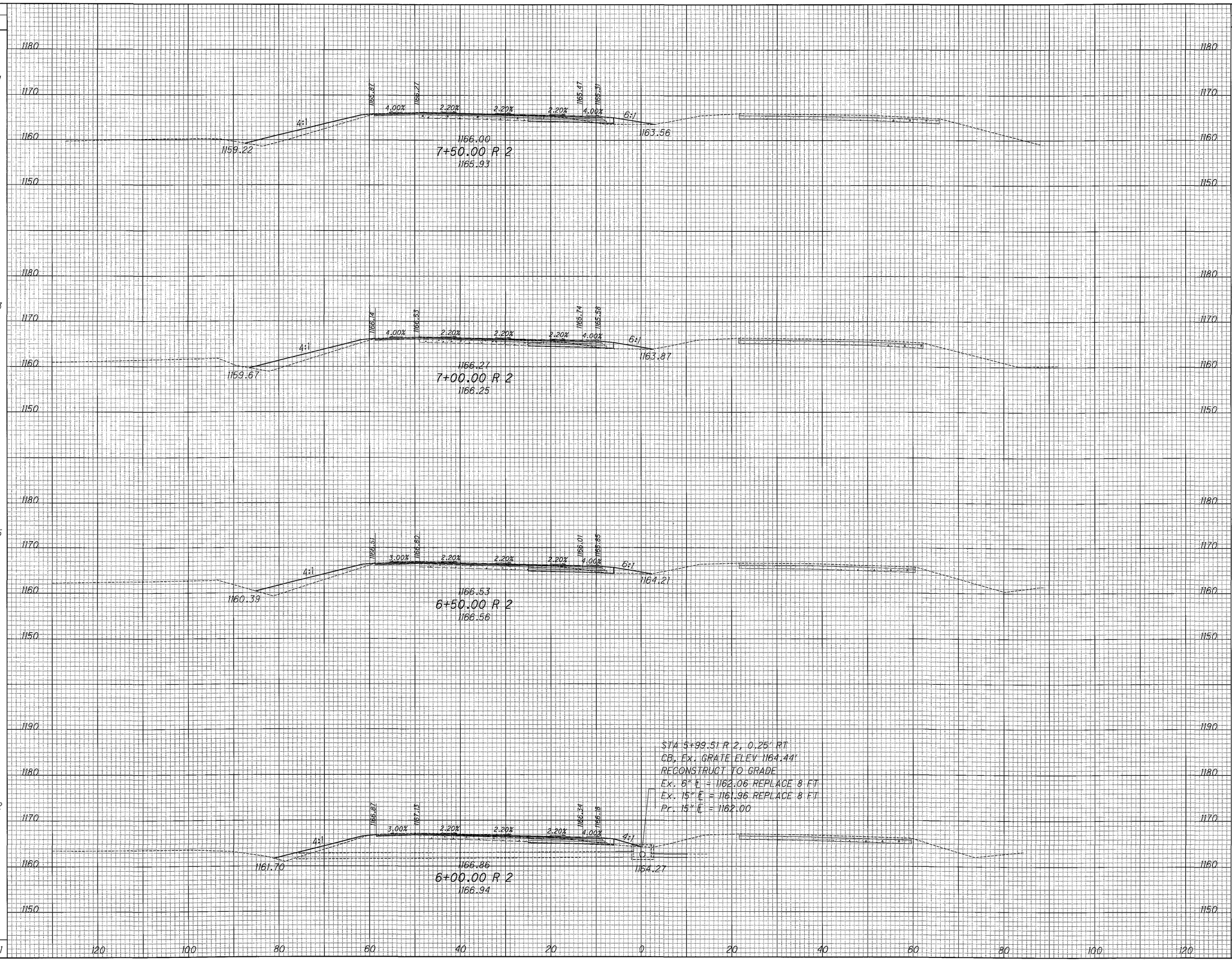


CROSS SECTIONS STA 4+50 TO 5+50

WAY-21-5.74

DESIGN FILE: I: \projects\81797\roadway\sheets\81797XS001.dgn
WORKSTATION:mschafra DATE: 6/1/2007

SEEDING	
END WIDTH	SQ. YDS.
	281
51.5	
	283
50.5	
	275
48.5	
	252
42.3	
	1091



END AREA		VOLUME	
CUT	FILL	CUT	FILL
19	41		
		37	75
21	40		
		41	74
24	40		
		48	57
27	21		
		48	37
		174	243

CALCULATED MJS
CHECKED BAD

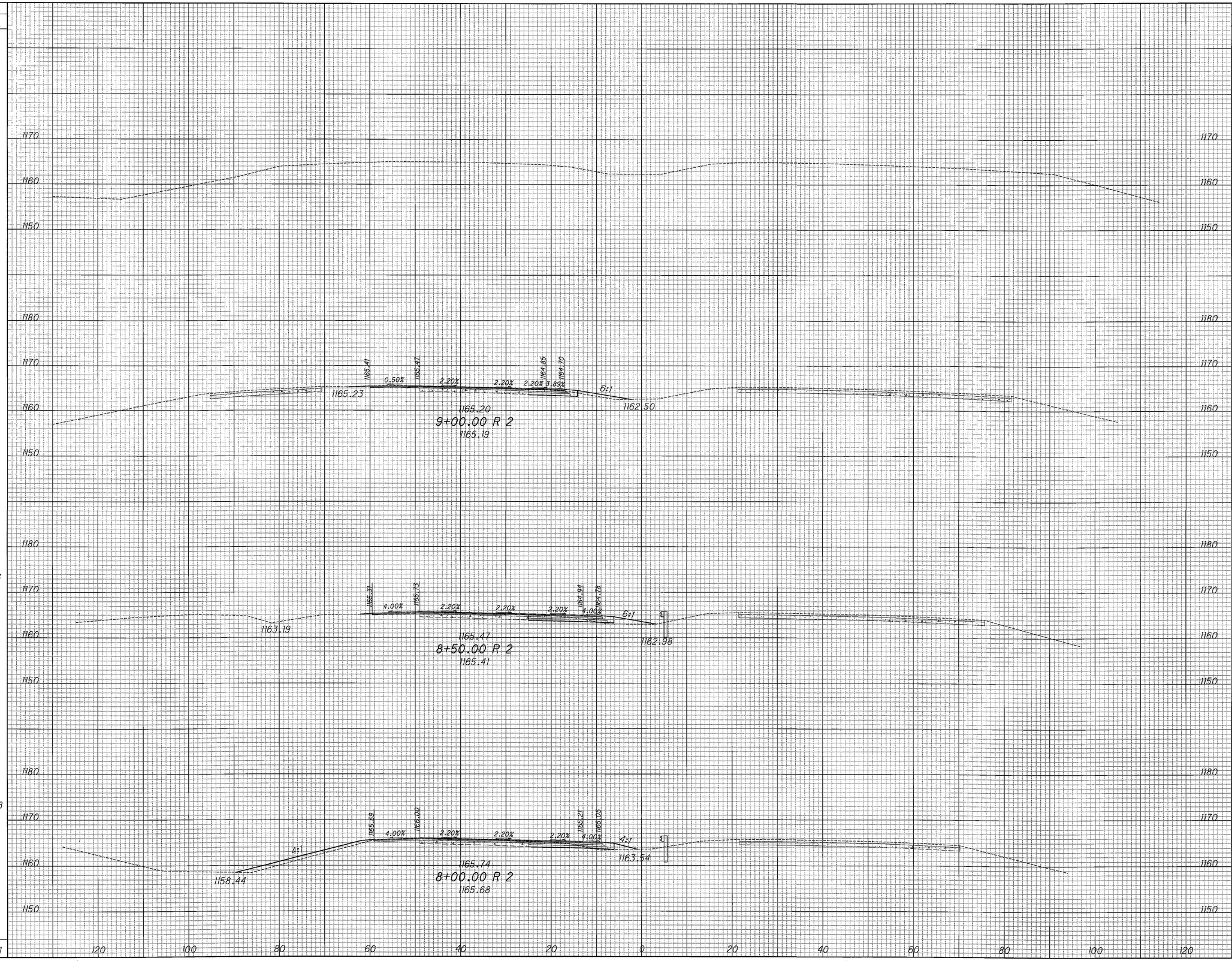
CROSS SECTIONS STA 6+00 TO 7+50

WAY-21-5.74

45
83

DESIGN FILE: I: \projects\81797\roadway\sheets\81797XS001.dgn
WORKSTATION:mschafra DATE: 6/1/2007

SEEDING	
END WIDTH	SQ. YDS.
29.8	
	153
25.1	
	208
49.5	
	361



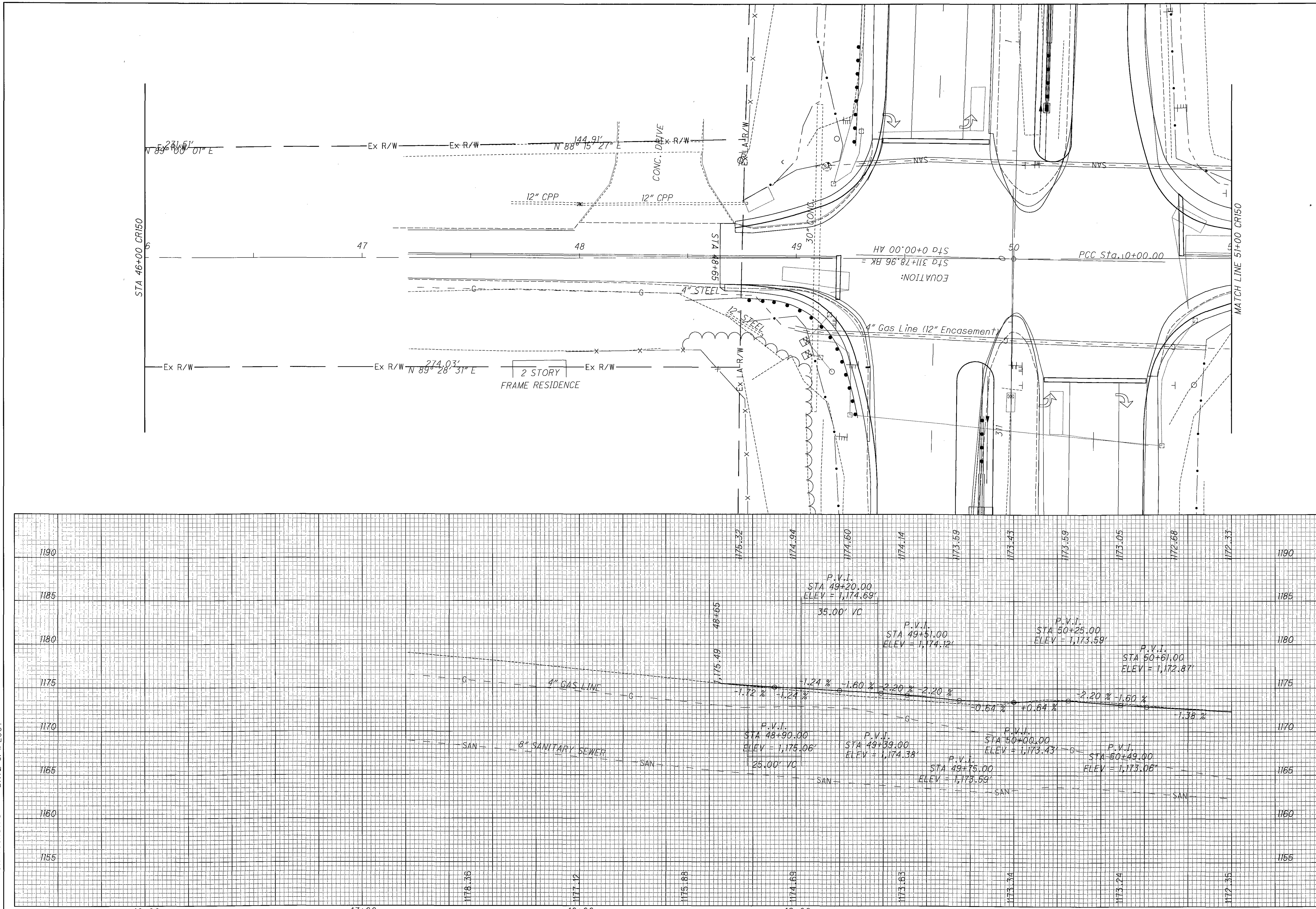
END AREA		VOLUME	
CUT	FILL	CUT	FILL
18	10		
		36	18
21	10		
		36	35
18	27		
		34	63
		106	116

CALCULATED MJS
CHECKED BAD

CROSS SECTIONS STA 8+00 TO 9+50

WAY-21-5.74

DESIGN FILE: i: \projects\81797\roadway\sheets\817797XS001.dgn
WORKSTATION:mschafra DATE:6/1/2007



Ex R/W
N 89° 00' 01" E
231.51'
N 88° 15' 27" E
144.91'
CONC. DRIVE
12" CPP
STA 46+00 CR150
STA 48+65
47
48
49
50
30" CONC.
PCC Sta. 0+00.00
Sta 311+78.96 BK =
Sta 0+00.00 AH
EQUATION:
4" STEEL
12" STEEL
4" Gas Line (12" Encasement)
N 89° 28' 31" E
274.03'
2 STORY
FRAME RESIDENCE
Ex.LA R/W
MATCH LINE 51+00 CR150
311
P.V.I.
STA 49+20.00
ELEV = 1,174.69'
35.00' VC
P.V.I.
STA 49+51.00
ELEV = 1,174.12'
P.V.I.
STA 50+25.00
ELEV = 1,173.59'
P.V.I.
STA 50+61.00
ELEV = 1,172.87'
P.V.I.
STA 48+90.00
ELEV = 1,175.06'
25.00' VC
P.V.I.
STA 49+39.00
ELEV = 1,174.38'
P.V.I.
STA 49+75.00
ELEV = 1,173.59'
P.V.I.
STA 50+00.00
ELEV = 1,173.43'
P.V.I.
STA 50+49.00
ELEV = 1,173.06'
-1.72 %
-1.24 %
-1.60 %
-2.20 %
-0.64 %
+0.64 %
1.38 %
4" GAS LINE
8" SANITARY SEWER
175.49
175.32
174.94
174.60
174.14
173.59
173.43
173.59
173.05
172.68
172.33
1178.36
1177.12
1175.88
1174.69
1173.63
1173.34
1173.24
1172.35
1190
1185
1180
1175
1170
1165
1160
1155
46+00
47+00
48+00
49+00
50+00
51+00

HORIZONTAL SCALE IN FEET

0 5 10 20

CALCULATED MJS

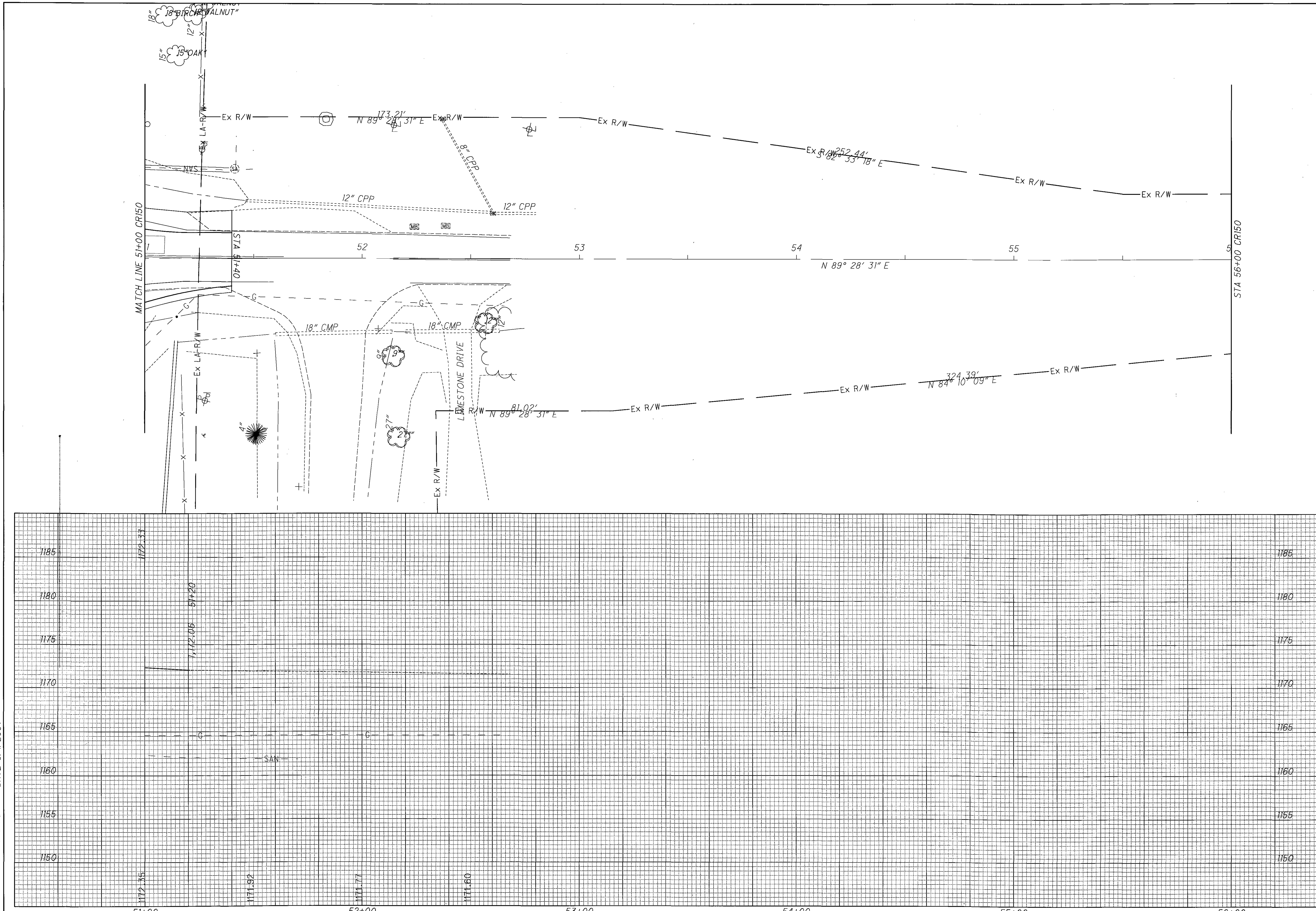
CHECKED BAD

PLAN AND PROFILE CR150

WAY-21-5.74

DESIGN FILE: I:\projects\81797\roadway\sheets\81797GP007.dgn

WORKSTATION: mschafra DATE: 6/1/2007



HORIZONTAL SCALE IN FEET
0 5 10 20

CALCULATED MJS

CHECKED BAD

PLAN AND PROFILE CR150

WAY-21-5.74

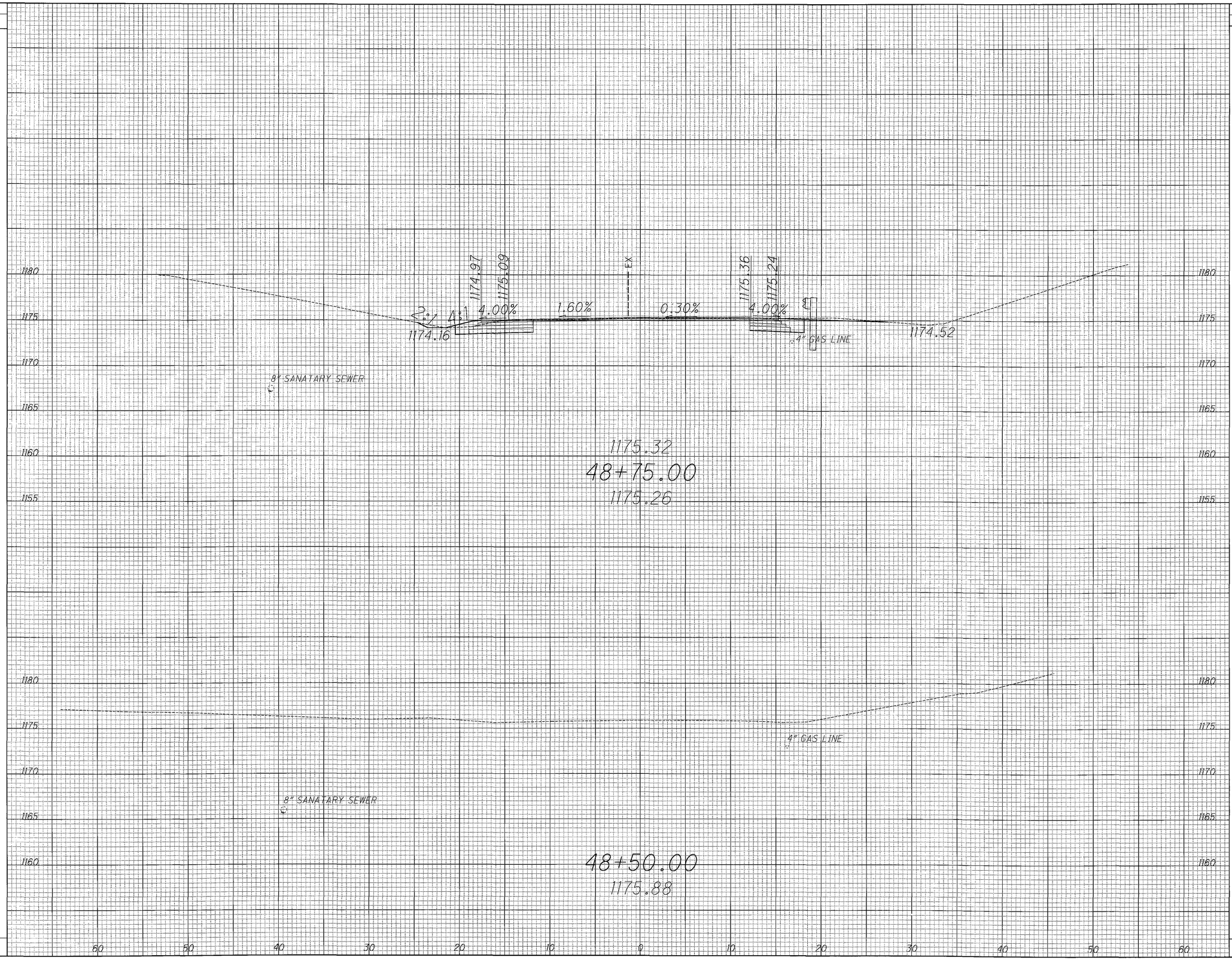
DESIGN FILE: I:\projects\81797\Broadway\sheets\81797GP008.dgn
WORKSTATION: mschafra DATE: 6/1/2007

DESIGN FILE: I:\projects\81797\roadway\sheets\81797XS002.dgn
WORKSTATION:mschafra DATE: 6/1/2007

49 / 83	WAY-21-5.74	CROSS SECTIONS STA 47+50 TO 48+00

CALCULATED MJS
CHECKED BAD

SEEDING	
END WIDTH	SQ. YDS.
	85
29.3	
	13
0	
	98



END AREA		VOLUME	
CUT	FILL	CUT	FILL
25	3		
		4	1
0	0		
		0	0

CALCULATED MJS
CHECKED BAD

CROSS SECTIONS STA 48+50 TO 48+75

WAY-21-5.74

50
83

DESIGN FILE: I:\projects\81797\roadway\sheets\81797XS002.dgn
WORKSTATION:mschafra DATE:6/1/2007

SEEDING	
END WIDTH	SQ. YDS.
	34
24.4	
	78
31.6	
	112

END AREA		VOLUME	
CUT	FILL	CUT	FILL
		12	3
27	7		
		21	9
18	12		
		20	7
		53	19

CALCULATED MJS
CHECKED BAD

CROSS SECTIONS STA 49+00 TO 49+25

WAY-21-5.74

51
83

DESIGN FILE: I: \projects\81797\roadway\sheets\81797XS002.dgn
WORKSTATION: mschafra DATE: 6/1/2007

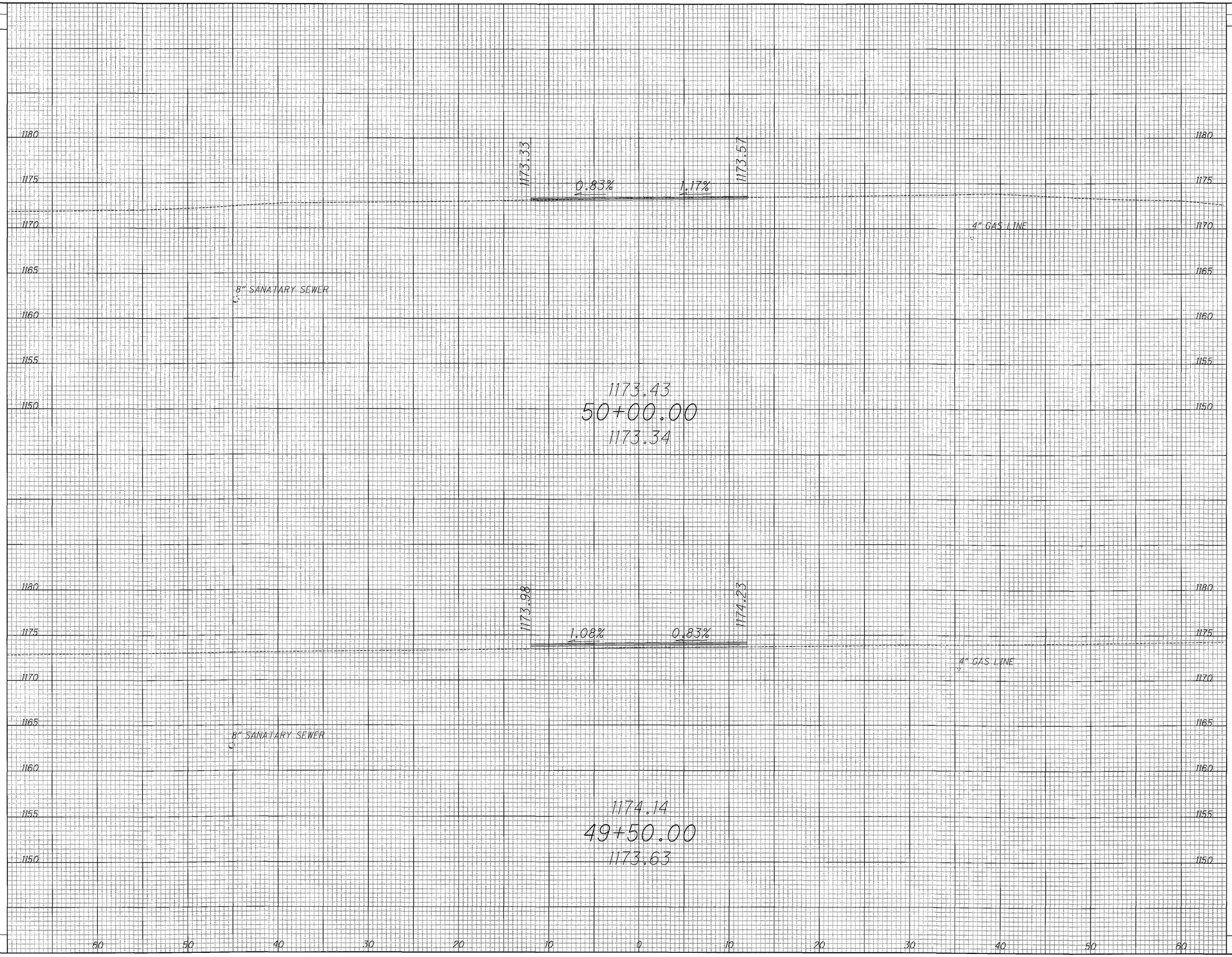
SEEDING	
END WIDTH	SQ. YDS.
0	

END AREA		VOLUME	
CUT	FILL	CUT	FILL
0	0	0	0

CALCULATED MJS
CHECKED BAD

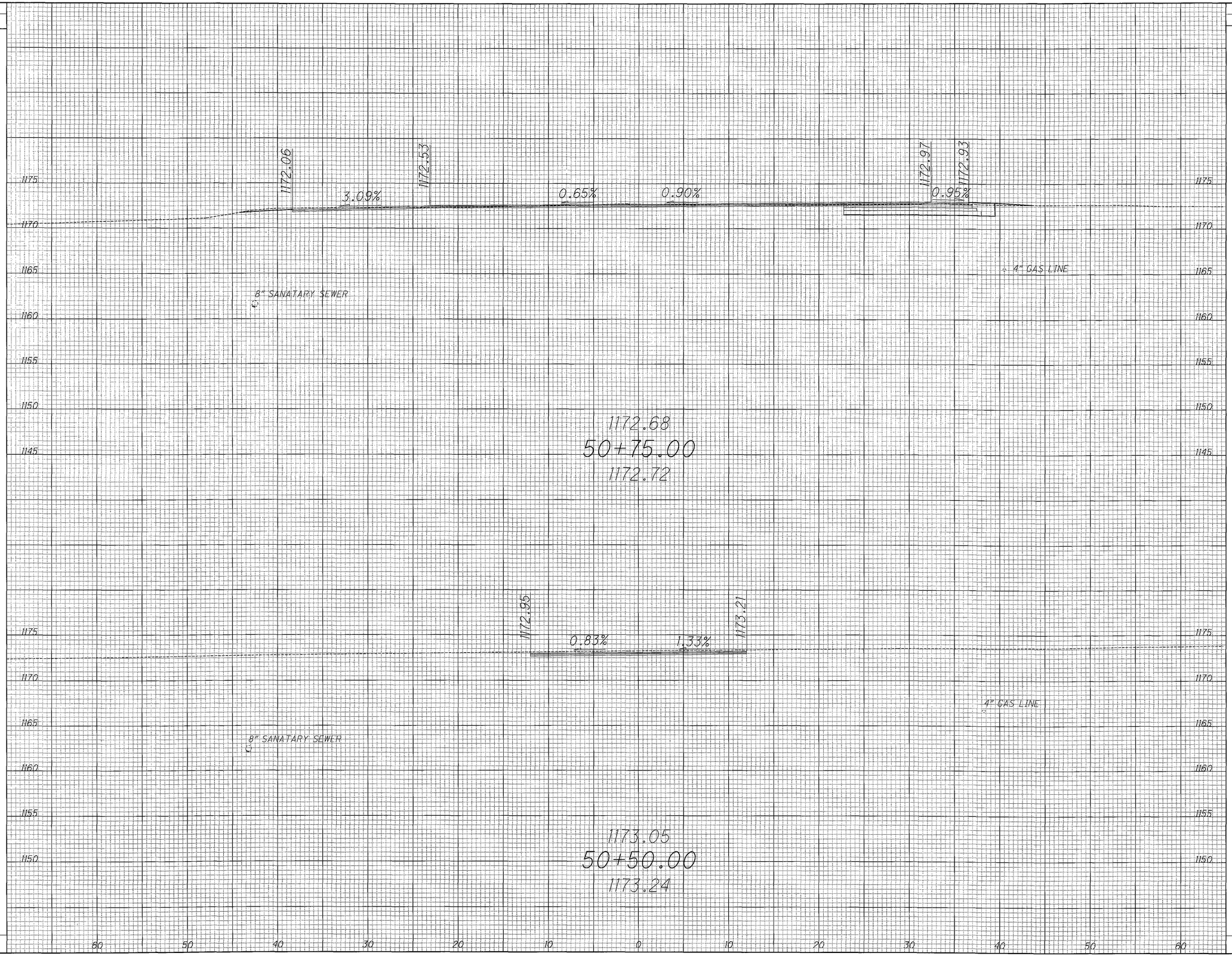
CROSS SECTIONS STA 49+50 TO 50+00

WAY-21-5.74



DESIGN FILE: I: \projects\81797\roadway\sheets\81797XS002.dgn
WORKSTATION:mschafra DATE: 6/1/2007

SEEDING	
END WIDTH	SQ. YDS.
	67
23.0	
	32
0	
	99



END AREA		VOLUME	
CUT	FILL	CUT	FILL
33	1		
		15	1
0	0		
		15	1

CALCULATED MJS
CHECKED BAD

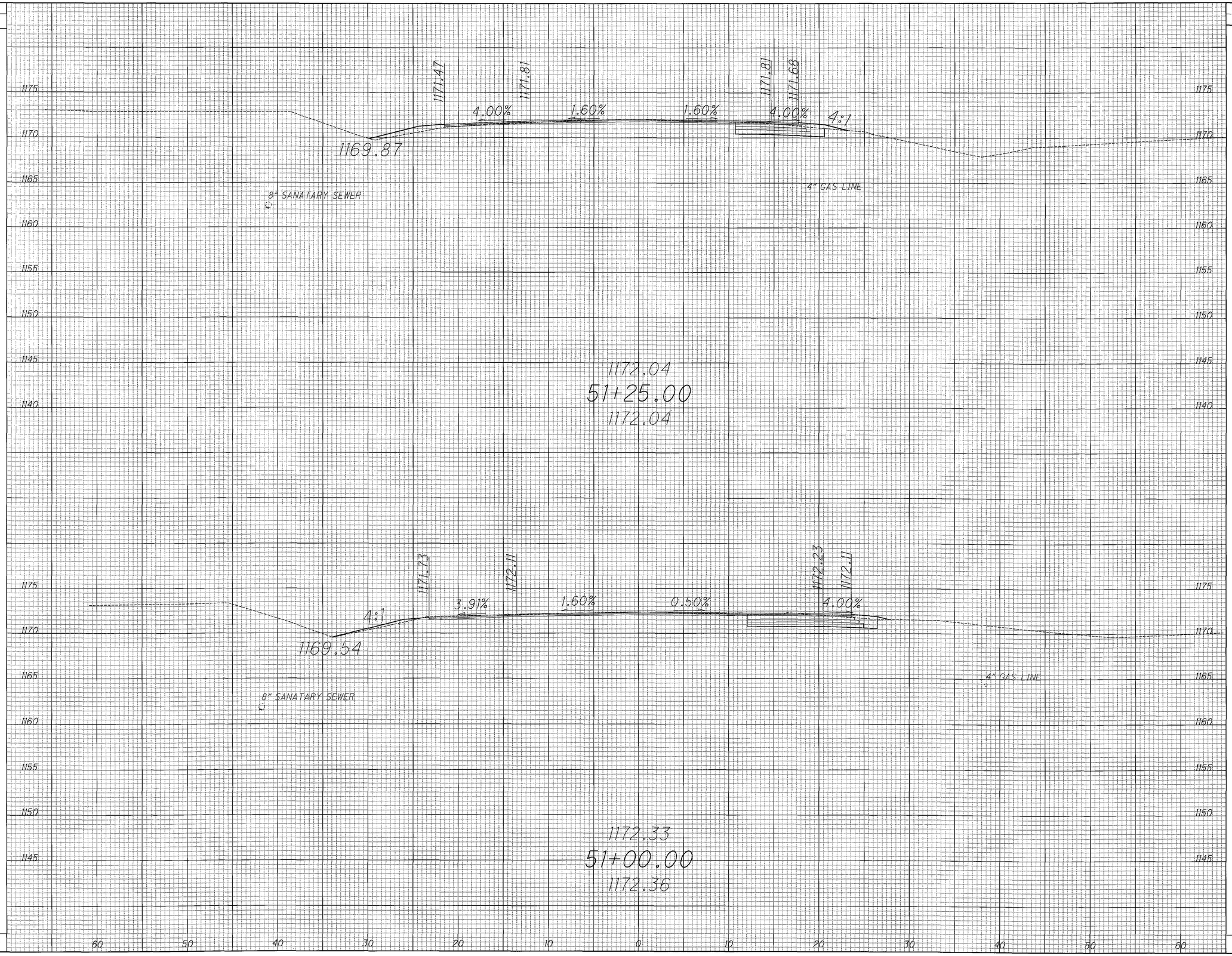
CROSS SECTIONS STA 50+50 TO 50+75

WAY-21-5.74

53
83

DESIGN FILE: I: \projects\81797\roadway\sheets\81797XS002.dgn
WORKSTATION:mschafra DATE: 6/1/2007

SEEDING	
END WIDTH	SQ. YDS.
	33
24.1	
	68
25.2	
	101



END AREA		VOLUME	
CUT	FILL	CUT	FILL
		4	1
16	5		
		20	3
27	3		
		28	1
		52	5

CALCULATED MJS
CHECKED BAD

CROSS SECTIONS STA 51+00 TO 51+25

WAY-21-5.74

54
83

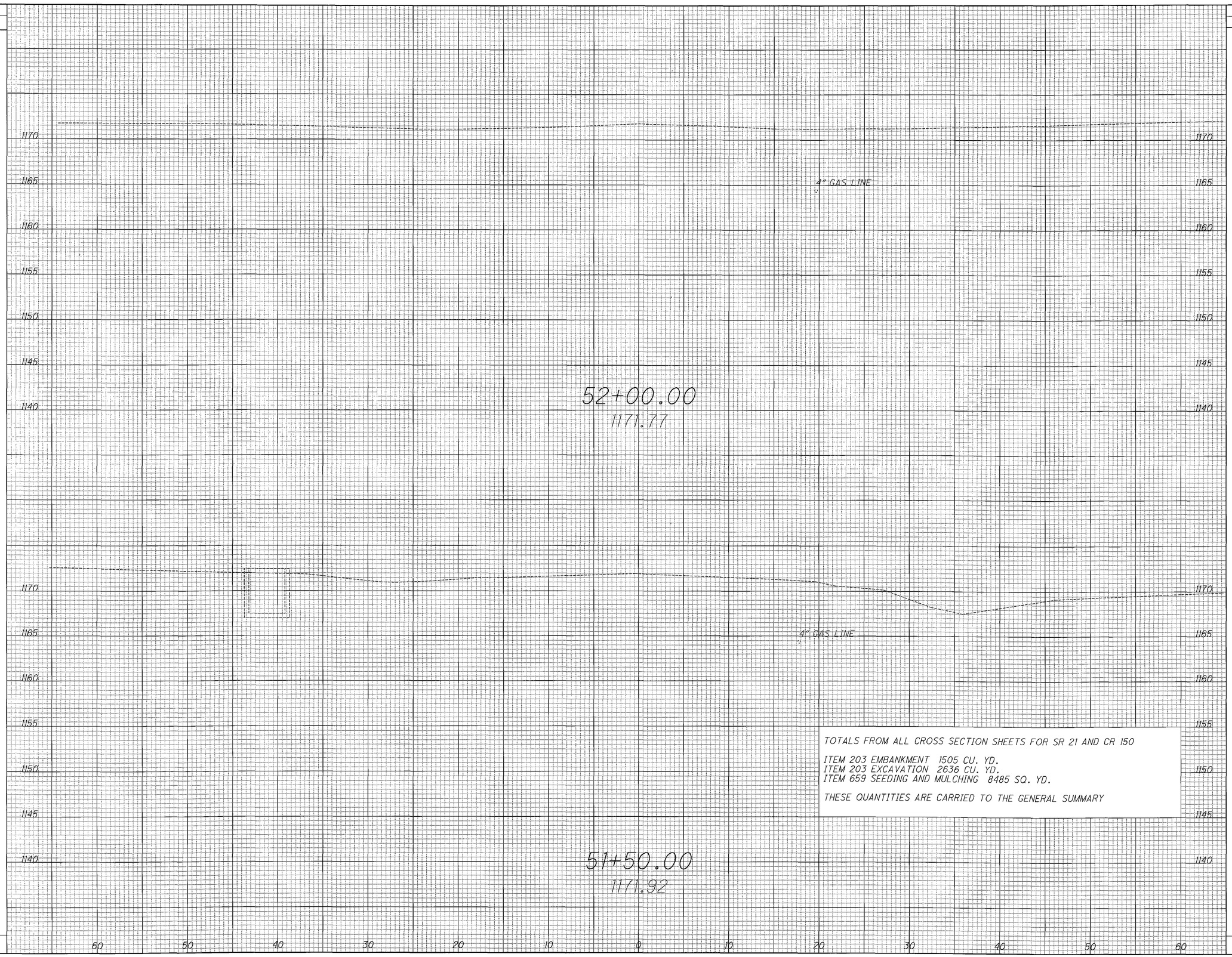
DESIGN FILE: I:\projects\81797\roadway\sheets\81797XS002.dgn
WORKSTATION:mschafra DATE:6/1/2007

SEEDING	
END WIDTH	SQ. YDS.
0	

END AREA		VOLUME	
CUT	FILL	CUT	FILL
0	0		

CALCULATED MJS
CHECKED BAD

CROSS SECTIONS STA 51+50 TO 52+00



TOTALS FROM ALL CROSS SECTION SHEETS FOR SR 21 AND CR 150

ITEM 203 EMBANKMENT 1505 CU. YD.
ITEM 203 EXCAVATION 2636 CU. YD.
ITEM 659 SEEDING AND MULCHING 8485 SQ. YD.

THESE QUANTITIES ARE CARRIED TO THE GENERAL SUMMARY

WAY-21-5.74

DESIGN FILE: I:\projects\81797\roadway\sheets\81797XS002.dgn
WORKSTATION: mschafra DATE: 6/1/2007

REF. NO.	SHEET NO.	STATION FROM	STATION TO	SIDE	644 EDGE LINE (YELLOW) MILE	644 EDGE LINE (WHITE) MILE	644 LANE LINE MILE	644 CENTER LINE MILE	644 CHANNELIZING LINE FT	644 STOP LINE FT		644 TRANSVERSE/DIAGONAL LINE (WHITE) FT	644 LANE ARROW EACH	644 DOTTED LINE, 4" FT		621 RPM, AS PER PLAN (WHITE) EACH	621 RPM, AS PER PLAN (WHITE/RED) EACH	621 RPM, AS PER PLAN (YELLOW/RED) EACH		614 WORK ZONE LANE LINE, CLASS I, 642 PAINT MILE	614 WORK ZONE CHANNELIZING LINE, CLASS I, 642 PAINT FT	614 WORK ZONE STOP LINE, CLASS I, 642 PAINT FT			
	SR 21 NORTHBOUND																								
EL-1	60-61	303+14	311+32	NB	0.16																				
EL-2	60-61	303+14	311+69	NB		0.17																			
EL-3	62	0+45	4+61	NB	0.08																				
EL-4	62		4+61	NB		0.10																			
LL-1	60-61	303+14	311+21	NB			0.15																		
LL-2	62	0+54.00	4+61	NB			0.08																		
CH-1	60-61	304+14	311+21	NB					706																
CH-2	61	306+61	311+21	NB					462																
CH-3	61	309+80	311+21	NB					864																
SL-1	61	311+21		NB						146															
IM-1	61	306+61	311+21	NB								637													
		304+79		NB									1												
		305+63		NB									1												
		306+51		NB									1												
		307+39		NB									1												
		309+15		NB									1												
		310+91		NB									1												
DL-1	61	307+52	309+80	NB										227											
RPM	58-63	303+14	4+61	NB												16	51	11							
	SR 21 NORTHBOUND																								
EL-5	62-63	2+53	9+16	SB		0.15																			
EL-6	62-63	0+45	9+16	SB	0.16																				
EL-7	62	0+54	3+50	SB		0.07																			
EL-8	58-61	293+00	311+64	SB		0.36																			
EL-9	58-61	293+00	311+23	SB	0.35																				
LL-3	62-63	0+54	9+16	SB			0.16																		
LL-4	60-61	1+99	311+23	SB			0.14																		
LL-5	58-61	293+00	311+23	SB			0.35																		
CH-4	62-63	0+54	6+16	SB					763																
CH-5	62-63	0+54	5+70	SB					516																
CH-6	62	0+54	1+56	SB					101																
SL-2	62	0+54		SB						146															
IM-2	62-63	0+54	5+70	SB								699													
		0+86		SB									2												
		1+54		SB									1												
		2+62		SB									1												
		4+38		SB									1												
		5+26		SB									1												
		6+14		SB									1												
		7+02		SB									1												
		7+90		SB									1												
		300+00		SB									1												
		302+00		SB									1												
		304+00		SB									1												
DL-2	62	1+56	2+53	SB										98											
RPM	58-63	293+00	9+16	SB												16	85	11							
		CR 150																							
CL-1	62	50+75	51+40	E				0.01																	
SL-4	62	50+75		E						49															
CL-2	61	48+65	49+20	W				0.01																	
SL-3	61	49+20		W						63															
TOTAL					**0.75**	**0.85**	**0.88**	**0.02**	**3,412**	**404**		**1,336**	**18**	**325**		**32**	**136**	**22**		**2.37**	**420**	**216**			

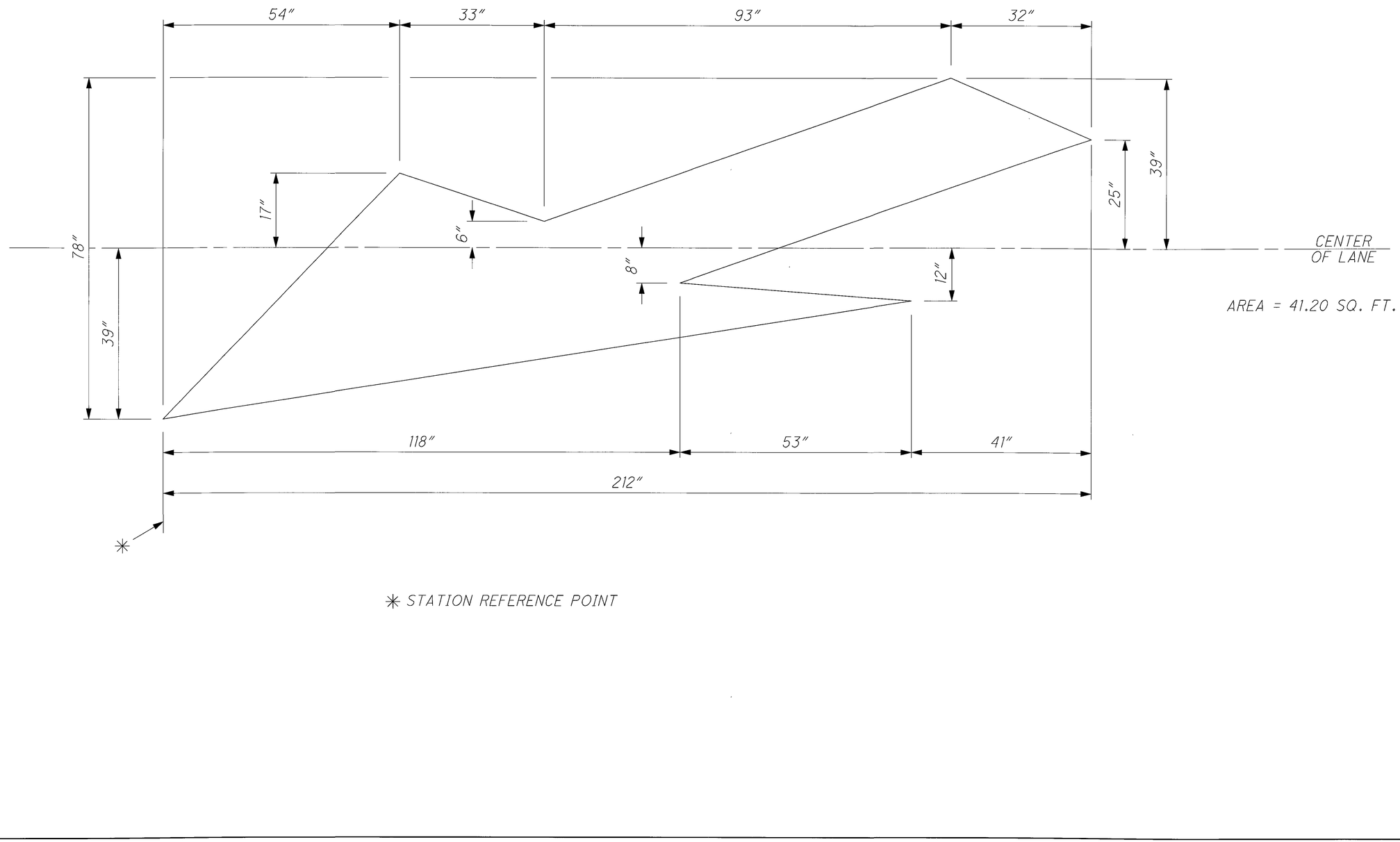
6/1/2007 8:06

I:\projects\81797\roadway\sheets\[81797TS001.xls]Traffic Control

CALC'D MJS CHECKED BAD

TRAFFIC CONTROL PAVEMENT MARKING SUB-SUMMARY

WAY-21-5.74



AREA = 41.20 SQ. FT.

✳ STATION REFERENCE POINT

DESIGN FILE: I: \projects\81797\roadway\sheets\81797td001.dgn
WORKSTATION: mschafra DATE: 6/1/2007

CALCULATED | CHECKED

LANE DROP ARROW DETAIL

WAY-21-5.74

DESIGN FILE: I:\projects\81797\roadway\sheets\817971P001.dgn
WORKSTATION:mschafra DATE:6/1/2007

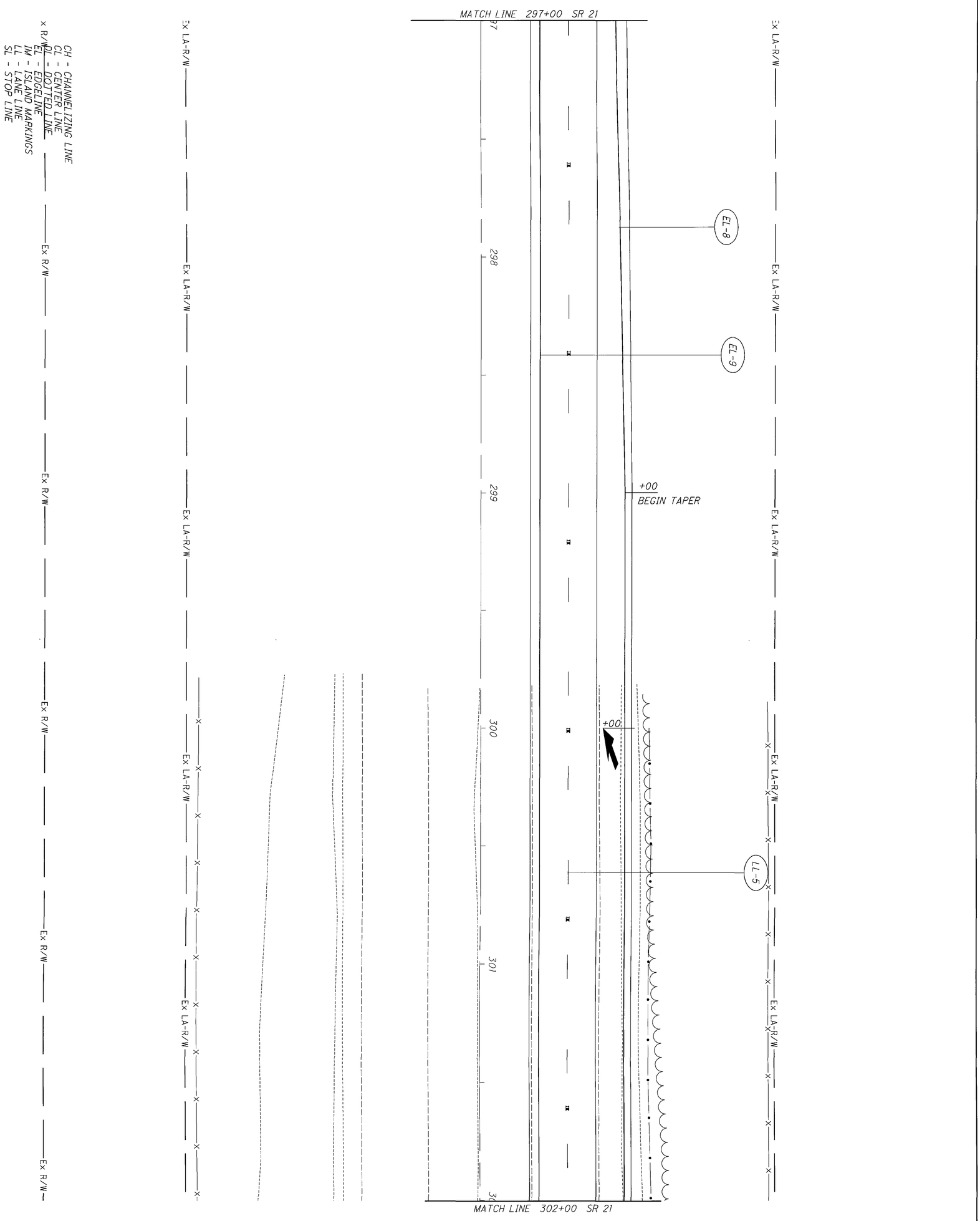
HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED SJD
CHECKED BAD

TRAFFIC CONTROL PAVEMENT MARKINGS

WAY-21-5.74

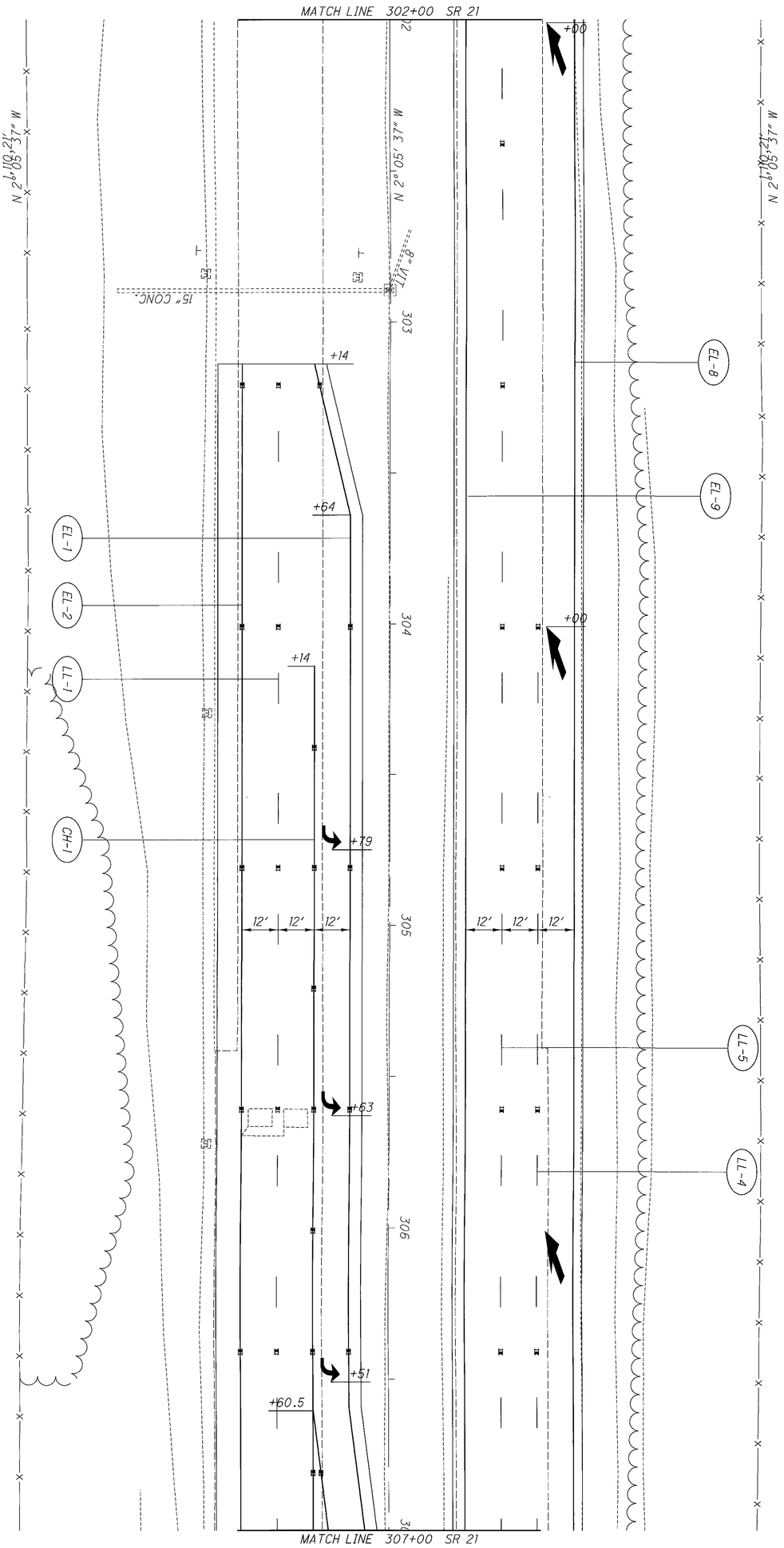
DESIGN FILE: I:\projects\81797\roadway\sheets\81797TP002.dgn
WORKSTATION:mschafra DATE: 6/1/2007



59 / 83	WAY-21-5.74	TRAFFIC CONTROL PAVEMENT MARKINGS	CALCULATED SJD / CHECKED BAD	0 10 20 40 HORIZONTAL SCALE IN FEET

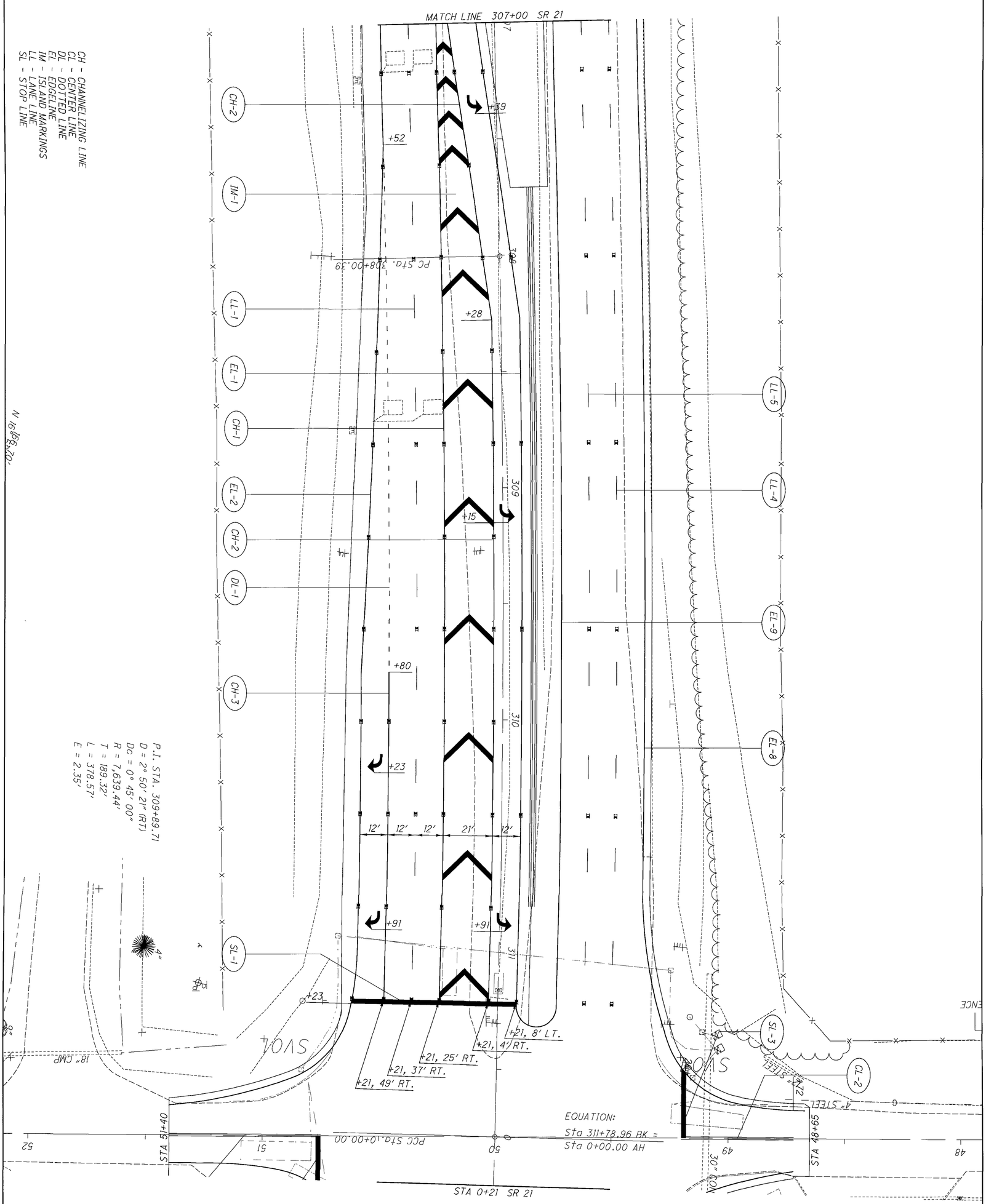
DESIGN FILE: I:\projects\81797\roadway\sheets\81797TP003.dgn
WORKSTATION: mschafra DATE: 6/1/2007

CH - CHANNELIZING LINE
CL - CENTER LINE
DL - DOTTED LINE
EL - EDGELINE
IM - ISLAND MARKINGS
LL - LANE LINE
SL - STOP LINE



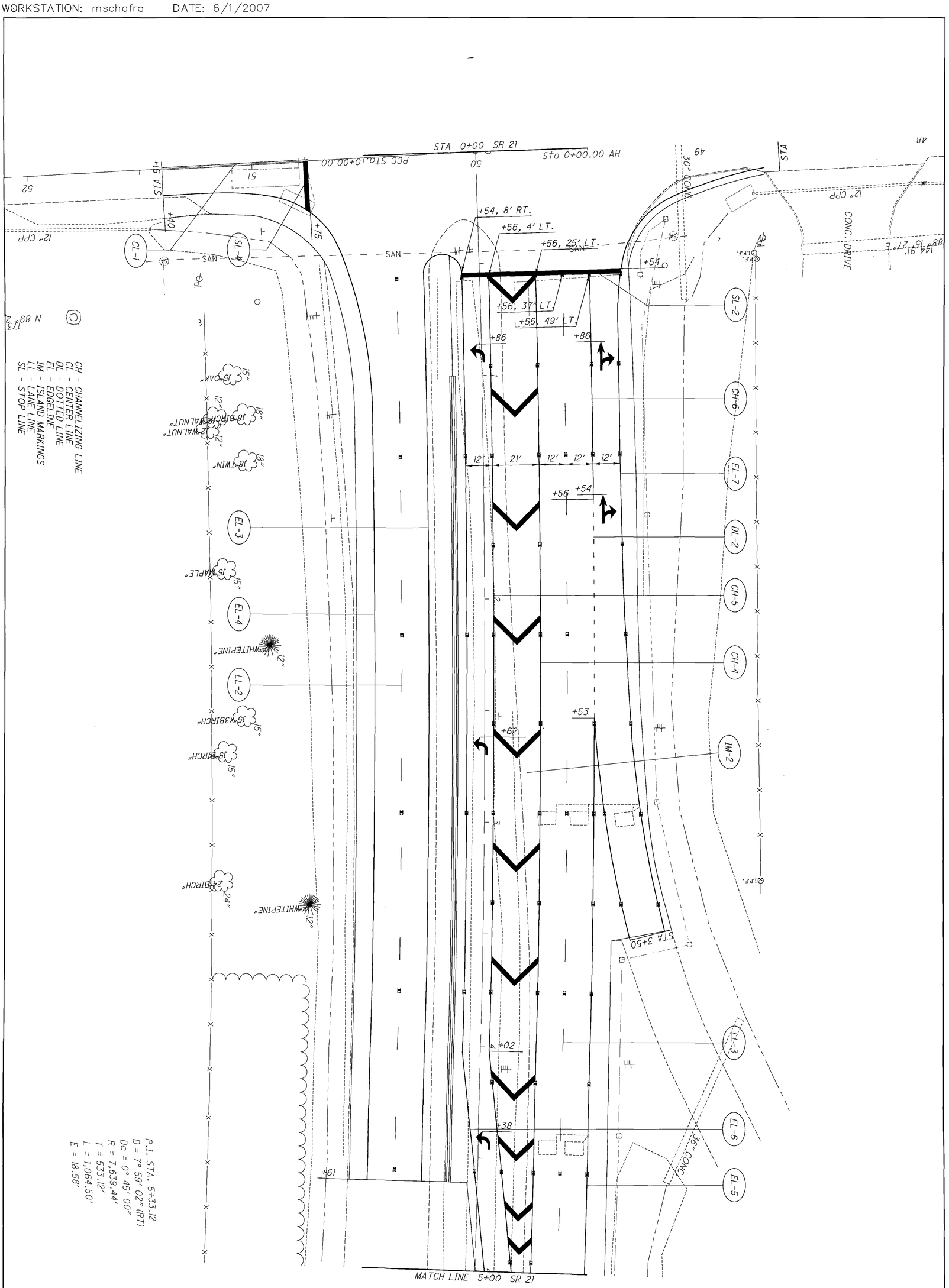
60 / 83	WAY-21-5.74	TRAFFIC CONTROL PAVEMENT MARKINGS	CALCULATED SJD / CHECKED BAD	0 10 20 40 HORIZONTAL SCALE IN FEET

DESIGN FILE: I:\projects\81797\roadway\sheets\81797TP004.dgn
WORKSTATION: mschafra DATE: 6/1/2007



83 / 61	**WAY-21-5.74**	**TRAFFIC CONTROL PAVEMENT MARKINGS**	CALCULATED SJD / CHECKED BAD	0 20 / 10 40 HORIZONTAL SCALE IN FEET

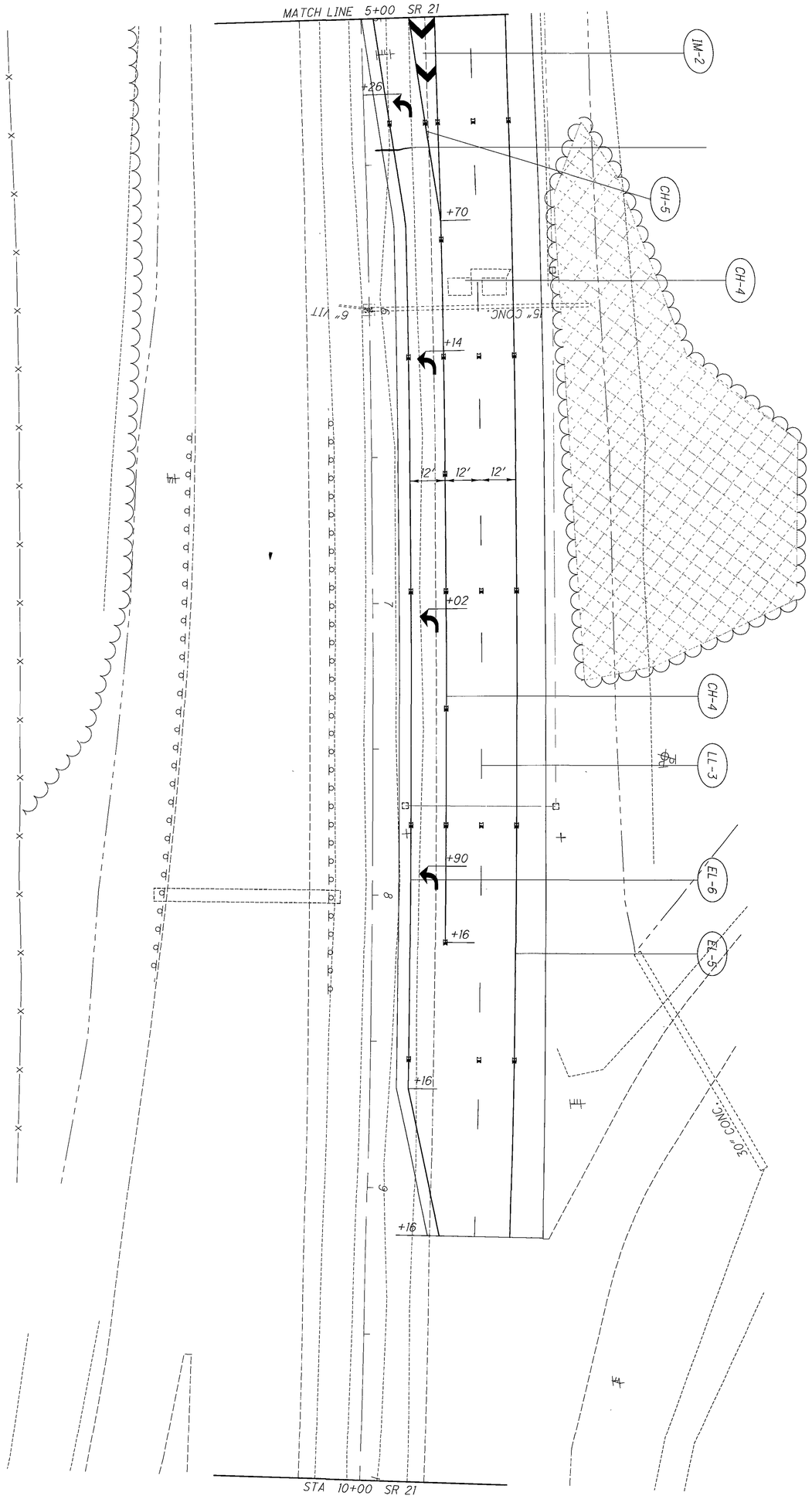
DESIGN FILE: I:\projects\81797\roadway\sheets\81797TP005.dgn
WORKSTATION: mschafra DATE: 6/1/2007



62/83	WAY-21-5.74	TRAFFIC CONTROL PAVEMENT MARKINGS	CALCULATED SJD / CHECKED BAD	0 20 10 40 HORIZONTAL SCALE IN FEET

DESIGN FILE: I:\projects\81797\roadway\sheets\81797TP006.dgn
WORKSTATION: mschafra DATE: 6/1/2007

CH - CHANNELIZING LINE
CL - CENTER LINE
DL - DOTTED LINE
EL - EDGELINE
IM - ISLAND MARKINGS
LL - LANE LINE
SL - STOP LINE



63/83	WAY-21-5.74	TRAFFIC CONTROL PAVEMENT MARKINGS	CALCULATED SJD / CHECKED BAD	0 20 10 40 HORIZONTAL SCALE IN FEET

SIGN REPLACEMENTS

WITH RESPECT TO THE REPLACEMENT OF EXISTING SIGNS THE CONTRACTOR SHALL IN NO CASE REMOVE A SIGN UNLESS THE APPLICABLE REPLACEMENT CAN BE ERECTED WITHIN THE SAME WORKING DAY.

LAYOUT OF WORK

PRIOR TO REMOVING OR ERECTING SIGNS OR SIGN SUPPORTS, THE CONTRACTOR SHALL FIELD LAYOUT AND IDENTIFY, BY TYPE OF WORK, SIGNS AND SIGN SUPPORTS TO BE ERECTED OR REMOVED. THIS LAYOUT MAY BE ACCOMPLISHED BY STAKING OR BY PLACING CLEARLY DISCERNABLE PAINTED MARKINGS ON THE EDGE OF PAVEMENT OR BY OTHER METHODS APPROVED BY THE ENGINEER. IN NO CASE SHALL THE CONTRACTOR PLACE ANY PERMANENT MARKINGS ON ANY EXISTING SIGN OR SIGN SUPPORT.

ITEM 630 - SIGNING, MISC.: SIGN DATA COLLECTION

THIS ITEM OF WORK SHALL CONSIST OF COLLECTING AND RECORDING INFORMATION FOR ANY WORK INVOLVING PERMANENT SIGNING INCLUDING SIGN REMOVAL, SIGN RELOCATION OR NEW SIGN INSTALLATION ON THIS PROJECT. DISTRICT THREE HAS A SIGN INVENTORY SYSTEM IN OPERATION. WORK PERFORMED ON EXISTING SIGNS AND INSTALLATION OF NEW SIGNS WILL AFFECT THE ACCURACY OF THE INVENTORY. ALL EXISTING SIGNS HAVE A BAR CODE STICKER. THE BAR CODE STICKER NUMBER FOR ANY SIGNS REMOVED ON THE PROJECT SHALL BE RECORDED COMPLETELY AND ACCURATELY SO THEY CAN BE REMOVED FROM THE INVENTORY. THE BAR CODE STICKER NUMBER FOR ANY SIGNS THAT ARE NEW OR RELOCATED SHALL ALSO BE RECORDED COMPLETELY AND ACCURATELY. NEW SIGNS REQUIRE NEW BAR CODE STICKERS WHICH WILL BE SUPPLIED TO THE CONTRACTOR AT THE PRECONSTRUCTION MEETING. ANY STICKERS NOT USED ARE TO BE RETURNED TO ODOT DISTRICT 3 TRAFFIC DEPARTMENT.

THE INFORMATION SHALL BE COLLECTED FROM ALL SIGNS REMOVED, RELOCATED OR INSTALLED ON THE PROJECT AND RECORDED COMPLETELY AND ACCURATELY BY A PERSON FAMILIAR WITH SIGNING TERMINOLOGY. THE INFORMATION REQUIRED APPEARS ON A FORM WHICH WILL BE SUPPLIED TO THE CONTRACTOR AT THE PRECONSTRUCTION MEETING. ALL SECTIONS OF THE FORM SHALL BE COMPLETED FROM THE INFORMATION COLLECTED FOR EACH SIGN. NOTE THAT THE STRAIGHT LINE MILEAGE LOG POINT OF THE SIGN REMOVAL, RELOCATION OR INSTALLATION IS TO BE PROVIDED. PROJECT STATIONING IS NOT ACCEPTABLE. AFTER THE FORM IS COMPLETED, IT SHALL BE RETURNED TO ODOT DISTRICT 3 TRAFFIC DEPARTMENT. A COPY OF THIS FORM IS AVAILABLE UPON REQUEST FOR THE CONTRACTOR TO REVIEW FOR BIDDING PURPOSES. FOR A COPY OF THIS FORM PLEASE CALL 1-419-207-7045, ROADWAY SERVICES MANAGER. ALL COMPLETED FORMS FOR THE PROJECT ARE TO BE PROVIDED TO THE ENGINEER NOT LATER THAN 30 CALENDAR DAYS AFTER COMPLETION OF SIGNING WORK ITEMS.

PAYMENT FOR THE LABOR, MATERIALS AND EQUIPMENT NECESSARY TO PERFORM THE ABOVE WORK WHICH INCLUDES COLLECTION OF INFORMATION, COMPLETION OF THE FORMS SUPPLIED TO THE CONTRACTOR, INSTALLATION OF BAR CODE STICKERS, MEASURING OF THE SIGNS AND ANY OTHER WORK IN ORDER TO COMPLETE THE FORM SHALL BE INCLUDED IN THE COST OF ITEM 630 - SIGNING, MISC.: SIGN DATA COLLECTION PER EACH.

MAINTAINING TRAFFIC FOR SIGN WORK

THE INTENT IS TO PERFORM THE REQUIRED WORK WITH THE LEAST INCONVENIENCE TO, AND THE MAXIMUM SAFETY TO, THE CONTRACTOR AND THE TRAVELING PUBLIC.

PROCEDURES FOR MAINTAINING TRAFFIC SHALL BE IN COMPLIANCE WITH THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES AND STANDARD CONSTRUCTION DRAWINGS AS LISTED ON THE TITLE SHEET OF THIS PLAN. WORK ON OR BEYOND THE SHOULDER SHALL BE IN ACCORDANCE WITH PLATES 2003 OMUTCD CHAPTER 6H. FLAGGING PROCEDURES SHALL BE IN ACCORDANCE WITH 2003 OMUTCD CHAPTER 6E.

THE CONTRACTOR SHALL MAINTAIN TRAFFIC AT ALL TIMES IN ACCORDANCE WITH THE REQUIREMENTS OF ITEM 614. TWO-WAY TRAFFIC SHALL BE MAINTAINED AT ALL TIMES, EXCEPT AS NOTED HEREIN.

THE CONTRACTOR WILL BE REQUIRED TO PROVIDE, ERECT, AND MAINTAIN IN PROPER POSITION, CLEAN, LEGIBLE DEVICES IN GOOD WORKING CONDITION AND SUBSEQUENTLY REMOVE ALL LIGHTS, SIGNS, BARRICADES, CONES, AND ALL OTHER TRAFFIC CONTROL DEVISES NECESSARY FOR THE MAINTENANCE OF TRAFFIC. ALL SIGNS SHALL BE REFLECTORIZED WITH TYPE G REFLECTIVE SHEETING.

PLACEMENT OF ALL TRAFFIC CONTROL DEVICES SHALL START AND PROCEED IN THE DIRECTION OF THE FLOW OF TRAFFIC. REMOVAL OF TRAFFIC CONTROL DEVICES SHALL START AT THE END OF THE CONSTRUCTION AREA AND PROCEED TOWARD THE ONCOMING TRAFFIC. THE CONTRACTOR SHALL PROVIDE FOR INSTALLATION OF ALL NECESSARY TRAFFIC CONTROL DEVICES BEFORE BEGINNING WORK. THE CONTRACTOR SHALL IMMEDIATELY REMOVE ALL OF THE BEFORE MENTIONED TRAFFIC CONTROL DEVICES AS SOON AS WORK IS SUSPENDED OR COMPLETED. ADVANCE WARNING SIGNS MAY BE COVERED FROM VIEW OF TRAFFIC WHEN THEY ARE NOT APPLICABLE, AS DETERMINED BY THE ENGINEER.

LANE CLOSURES (TAPERS AND TRANSITIONS) MAY BE ACCOMPLISHED BY THE USE OF TRAFFIC CONES, WITH A 28" MINIMUM HEIGHT. WITH THE APPROVAL OF THE ENGINEER, CONES MAY BE USED FOR SHORT TIME CLOSURES. THE CONES SHALL BE SPACED CENTER TO CENTER FROM THE BEGINNING OF THE FIRST LANE CLOSURE THROUGH THE WORK AREA(S) AS PER THE STANDARD CONSTRUCTION DRAWINGS. REFLECTORIZED BARRICADES OR DRUMS MAY BE USED IN LIEU OF TRAFFIC CONES, IF DESIRED.

NO LANE CLOSURES SHALL OCCUR ON ANY ROAD FROM 12:00 NOON THE DAY PRECEDING A STATE HOLIDAY THROUGH 6:00 PM THE DAY AFTER. NO TRAFFIC CLOSURES SHALL OCCUR ON SATURDAY OR SUNDAY WITHOUT THE APPROVAL OF THE ENGINEER.

ON TWO-LANE HIGHWAYS, ONE-LANE CLOSURES SHALL BE OPERATED BY USE OF FLAGGERS AND WILL BE REQUIRED WHENEVER TRAFFIC IS RESTRICTED TO LESS THAN THE NORMAL WIDTH OF THE TWO-LANE PAVEMENT AS PER STANDARD CONSTRUCTION DRAWING MT-97.10.

A FLASHING ARROW PANEL SHALL BE REQUIRED WHENEVER ANY WORK IS BEING DONE UPON ANY TRAVELED PORTION OF A MULTI-LANE HIGHWAY. SEE STANDARD CONSTRUCTION DRAWING MT-35.10 FOR FLASHING ARROW PANEL SIZE.

IF THE CONTRACTOR FAILS TO COMPLY WITH THE PROVISIONS FOR TRAFFIC CONTROL AS SET FORTH IN THESE PLANS OR WITH PROVISIONS OF THE OMUTCD, AND SUCH FAILURE RESULTS IN A CONDITION AT THE WORK SITE WHICH IS UNSAFE FOR TRAFFIC, THE ENGINEER SHALL SUSPEND WORK UNTIL THE CONTRACTOR COMPLIES WITH THE NECESSARY REQUIREMENTS.

PAYMENT FOR ALL OF THE ABOVE INCLUDING PROVIDING, ERECTING, MAINTAINING, AND REMOVING ALL LIGHTS, SIGNS, BARRICADES, DRUMS, CONES AND ALL OTHER TRAFFIC CONTROL DEVICES, SHALL BE INCLUDED IN THE LUMP SUM BID FOR ITEM 614 MAINTAINING TRAFFIC.

SIGN SHEETING MATERIAL

SIGN SHEETING MATERIALS SHALL BE PER THE REQUIREMENTS OF CMS 630.04. ALL REFLECTIVE SHEETING MATERIALS SHALL BE CONTAINED ON THE ODOT LIST OF PREQUALIFIED SIGN SHEETING MATERIALS.

BASIS OF PAYMENT SHALL BE PER CMS 630.14 AT THE UNIT PRICE BID PER SQ. FT FOR ITEM 630, SIGN, FLAT SHEET.

ITEM 630 - GROUND MOUNTED SUPPORT, (BY SIZE), AS PER PLAN

GROUND MOUNTED POST SUPPORTS USED ON THIS PROJECT SHALL BE PER CMS 630.06 AND SCD TC-41.20 WITH THE FOLLOWING EXCEPTIONS.

2 LB & 3 LB POSTS

POST SUPPORTS EXPOSED TO TRAFFIC SHALL BE U-CHANNEL DESIGN AND BE STUBBED AND SPLICED PER THE FOLLOWING PROCEDURE:

a) DRIVE 5'-6" LONG STUB TO WITHIN 12" OF GROUND SURFACE.

b) BOLT UPPER SIGN POST TO STUB USING QUANTITY OF THREE 5/16" STAINLESS STEEL BOLTS, LOCK WASHERS, AND NUTS WITH A MINIMUM OF 4" CENTER TO CENTER SPACING.

c) THE UPPER POST SHALL BE SPLICED BEHIND THE STUB POST TO MINIMIZE THE POSSIBILITY OF VEHICLE SNAGGING.

d) PLACE NO MORE THAN TWO POSTS PER SIGN WITHIN 7' SPACING UNLESS LOCATED BEHIND GUARDRAIL.

e) DESIGNATE SUPPORTS INSTALLED WITH THIS METHOD AS "BREAKAWAY TYPE = U-CHANNEL SPLICE (NON-BREAKAWAY)" ON DISTRICT 3 SIGN DATA COLLECTION FORM.

f) COST OF SPLICE CONNECTION AND OVERLAP OF POSTS SHALL BE INCIDENTAL TO THE COST OF EACH SIGN SUPPORT.

BASIS OF PAYMENT SHALL BE AT THE UNIT PRICE BID PER FOOT.

ITEM 630 - SIGN POST REFLECTOR, (BY COLOR)

THIS ITEM SHALL INCLUDE THE INSTALLATION OF SIGN POST RELECTORS OF THE COLOR SPECIFIED IN THIS PLAN. THE SIGN POST REFLECTORS SHALL BE FLAT SHEET ALUMINUM TYPE G, H OR J REFLECTIVE SHEETING, IN ACCORDANCE WITH 630.04. INSTALL RED SIGN POST REFLECTORS WITH THE FOLLOWING POST-MOUNTED SIGNS: STOP (R1-1), YIELD (R1-2), DO NOT ENTER (R5-1), AND WRONG WAY (R5-1A). INSTALL YELLOW SIGN POST REFLECTORS WITH THE FOLLOWING POST-MOUNTED SIGNS: ONE-DIRECTION LARGE ARROW (W1-6), TWO-DIRECTION LARGE ARROW (W1-7), CHEVRON ALIGNMENT (W1-8), AND STOP AHEAD (W3-1, W3-1A). THE RELFECTORIZED SHEETING SHALL BE 3" WIDE AND BE ATTACHED TO THE DRIVE POST BY USE OF 5/16" STAINLESS STEEL HEX HEAD BOLT, NUT AND WASHERS. THE MAXIMUM SPACING OF THE BOLT CONNECTIONS IS 24" WITH A MINIMUM OF 2 BOLT CONECTIONS PER SECTION LENGTH OF SHEETING. THE REFLECTORIZED SHEETING SHALL EXTEND FROM THE BOTTOM OF THE SIGN TO WITHIN 18" OF THE GROUND SURFACE.

PAYMENT FOR THE ABOVE SHALL INCLUDE ALL LABOR, MATERIAL, AND EQUIPMENT REQUIRED TO COMPLETE THE WORK. BASIS OF PAYMENT SHALL BE AT THE UNIT PRICE BID PER EACH SIGN POST REFLECTOR.

CALCULATED MJS
CHECKED BAD

TRAFFIC CONTROL
SIGNING GENERAL NOTES

WAY-21-5.74

DESIGN FILE: I:\projects\81797\roadway\sheets\81797TN001.dgn
WORKSTATION: mschafra DATE: 6/1/2007

Plan Sheet Reference No.	Sign Number	Sign Design Detail	Station	Code Number	Sign Size (Inches)	SIGNS				630																								630	630	630
						Ground Mounted Extrusheet	Overhead Mounted Extrusheet	Flat Sheet	Flat Sheet, As Per Plan (Hinged)	Removal of Ground Mounted Support and Disposal		Removal of Ground Mounted Sign and Disposal		Removal of Overhead Sign Support and Disposal, Type TC-7.65	Removal of Ground Mounted Sign and Reerection	Removal of Overhead Mounted Sign and Disposal	GROUND MOUNTED SUPPORTS																			Concrete Median Barrier Sign Bracket (Method A)	Signing, Misc.: Sign Data Collection	Sign Post Reflector, Red	CALC BY SJD CHK'D BY BAD
										Post	Beam	Minor	Major				One-Way No.3, As Per Plan		No. 2, As Per Plan		No. 3, As Per Plan														
						SQ FT				EACH							FOOT																		Each	Each	Each	
	1, 2		OMITTED																																	
	3, 4		OMITTED																																	
68	5		303+14	R3-H8CA-48	48 x 30			10.0											15.0	15.0														1		
68	6		303+14	R3-H8CA-48	48 x 30			10.0											15.0	15.0														1		
68	7		306+59	R3-H8DS-66	66 x 30			13.8													15.0	15.0												1		
69	8		309+27							2		2																					2		
69	9		309+28							2		2																					2		
69	10		309+50	R3H8DS-66	66 x 30			13.8													15.0	15.0												1		
69	11		311+30							1		1																					1		
69	12		311+30							1		2																					2		
69	12A		311+22																															1	
69	13		311+30							1		1																					1		
70	14		0+33	R6-1R-48 R6-1L-48	48 x 18 48 x 18			6.0 6.0		1					1				14.0	14.0														1 1 1		
70	15		1+02	R4-7B-36	36 x 48			12.0											7.5														1	1		
71	16		9+16	R3-H8CA-48	48 x 30			10.0											15	15														1		
	17 18		OMITTED																																	
71	19		5+71	R3-H8CHH-54	54 x 30			11.3													15.0	15.0												1		
71	20		5+71	R3-H8CHH-54	54x 30			11.3													15.0	15.0												1		
71	21		5+12							2		1																					1		
70	22		4+10							2		1																					1		
70	23		4+10	R3-H8DT-72	72 x 30			15.0													15.0	15.0												1		
70	24		4+58	R1-2-36	36 x 36			4.5											15															1		
70	25		4+07							2		1																					1		
70	26		2+58	R3-H8DT-72	72 x 30			15.0													15.0	15.0												1		
70	27		2+58									1																					1		
70	28		2+53							1		1																					1		
70	29		0+44							1		1																					1		
70	30		0+44							1		1																					1		
70	31		0+44							1		1																					1		
70	32		0+61							2		1																					1		
70	32A		0+53	R5-1-36	36 x 36			9.0											15.0	15.0													1	1	
69 69	33 34		311+48							2					3				15.0	15.0													3		
69	35		311+29							2		1																					1		
69	36		311+29	D3-H6-72	72 x 12			6.0											15.0	15.0													1		
69	37		310+75	R4-7B-36	36 x 48			12.0											7.5														1	1		
69	38		308+00	W9-1R-36	36 x 36			9.0													15.0													1		
68	39		306+00	W4-2R-36	36 x 36			9.0																												
																					15.0												1		
SUBTOTALS								183.5		24		18			4				238.0		210.0												2	40	2	

TRAFFIC CONTROL
SIGN SUB-SUMMARY

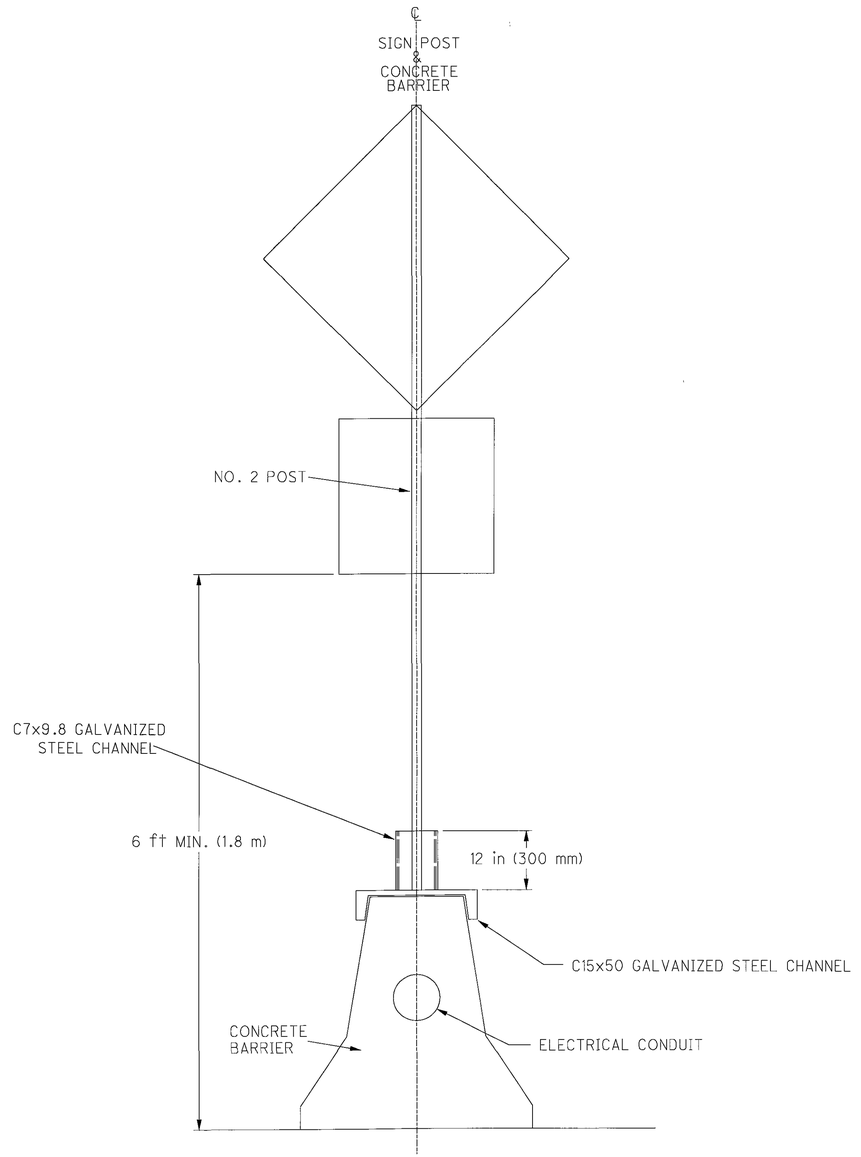
WAY-21-5.74

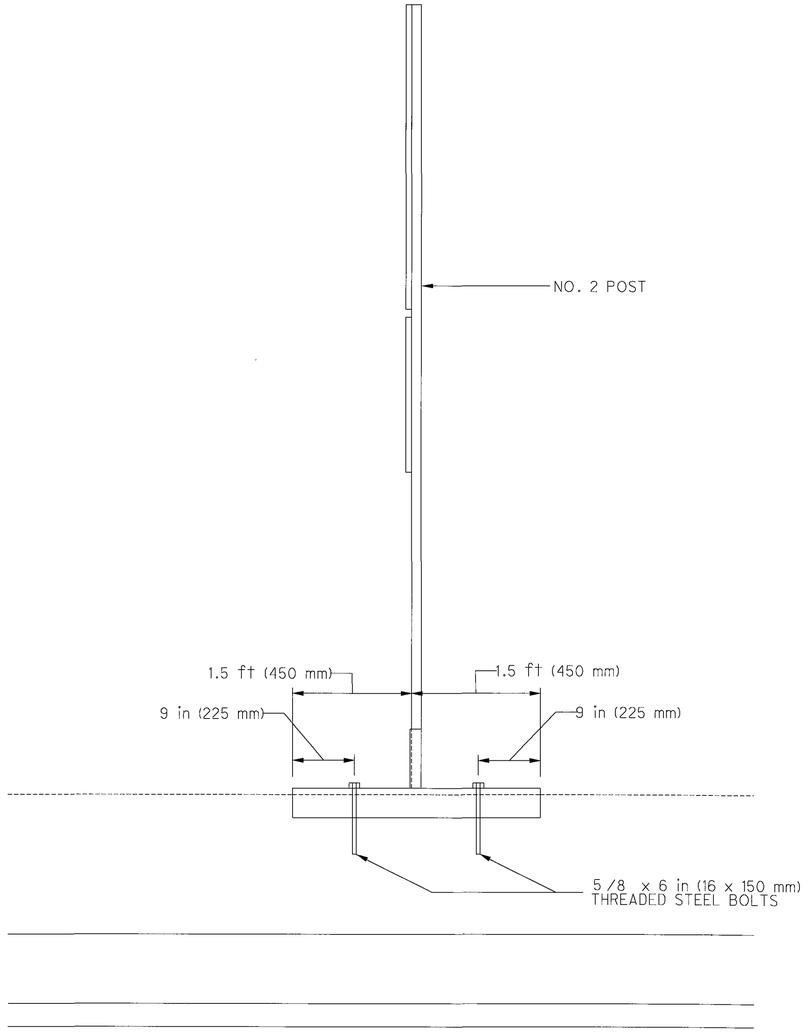
6/1/2007 8:05

I:\projects\81797\roadway\sheets\[81797TSS002.xls]Sheet 1

NOTES

1. The C7x9.8 galvanized steel channel shall be welded to the C15x50 galvanized steel channel.
2. The No. 2 post shall be attached to the C7x9.8 galvanized steel channel with four 5 /16 inch (8 mm) steel hex head bolts. The holes in the C7x9.8 steel channel shall be drilled before galvanizing. The holes shall be 9" (225 mm) center to center.
3. The 5 /8 inch (16 mm) threaded steel bolts shall be attached to the concrete barrier with expansion anchors.





DESIGN FILE: I:\projects\81797\roadway\sheets\81797TM001.dgn
WORKSTATION: mschafra DATE: 6/1/2007

OFFICE OF TRAFFIC ENGINEERING

DESIGNED	REVIEWED
	LAM

REVISION DATE	CHECKED
11/27/06	

PTS NUMBER 202020

PLAN INSERT SHEET

CONCRETE BARRIER MOUNTED SIGN SUPPORT DETAIL METHOD A

WAY-21-5.74

Ex LA-R/W

Ex LA-R/W

Ex LA-R/W

Ex LA-R/W

Ex LA-R/W

STA. 297+00 SR 21

297

298

299

300

301

302

MATCH LINE 302+00 SR 21

Ex LA-R/W

Ex LA-R/W

Ex LA-R/W

Ex LA-R/W

Ex LA-R/W

x R/W

Ex R/W

Ex R/W

Ex R/W

Ex R/W

Ex R/W

N

0 10 20 40

HORIZONTAL SCALE IN FEET

CALCULATED SJD

CHECKED BAD

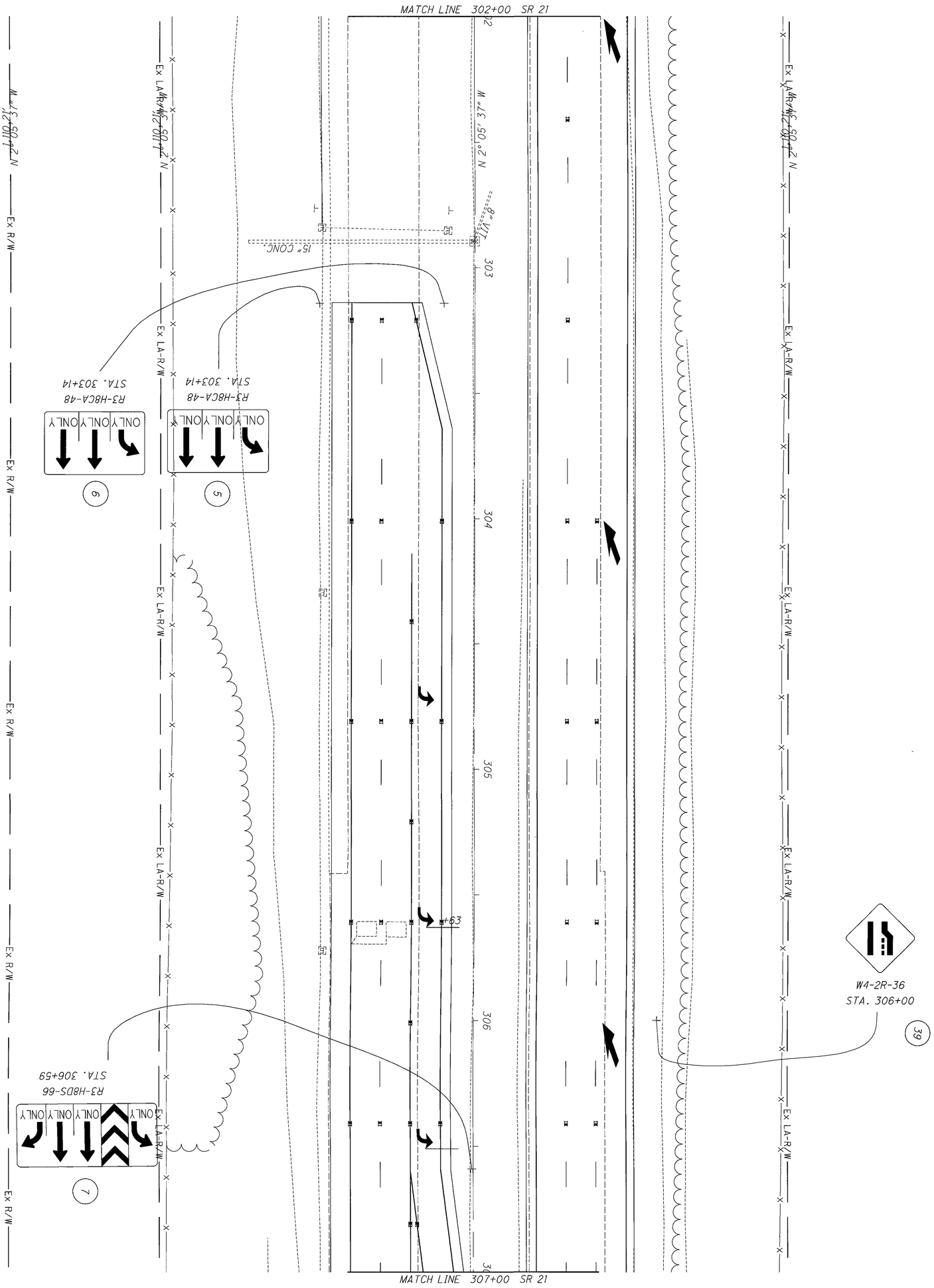
TRAFFIC CONTROL SIGNING

WAY-21-5.74

DESIGN FILE: I:\projects\81797\roadway\sheets\81797TP101.dgn

WORKSTATION: mschafra DATE: 6/1/2007

DESIGN FILE: I:\projects\81797\roadway\sheets\81797TP102.dgn
WORKSTATION: mschafra DATE: 6/1/2007



WAY-21-5.74

TRAFFIC CONTROL
SIGNING

CALCULATED SJD
CHECKED BAD

0 10 20 40
HORIZONTAL SCALE IN FEET

N

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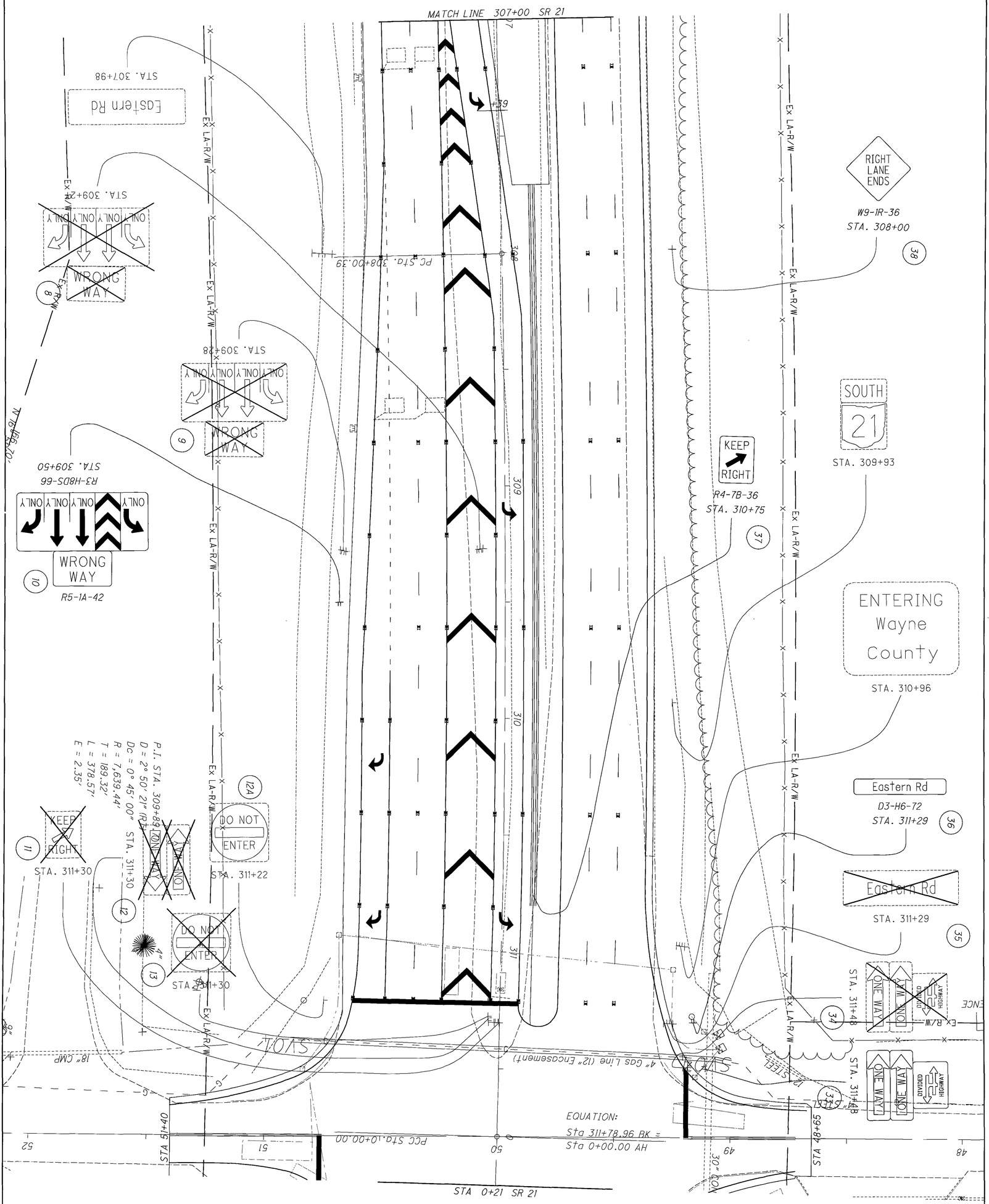
WORKSTATION: mschafra DATE: 6/1/2007



69 / 83	WAY-21-5.74	TRAFFIC CONTROL SIGNING	CALCULATED SJD / CHECKED BAD	0 20 / 10 40 HORIZONTAL SCALE IN FEET

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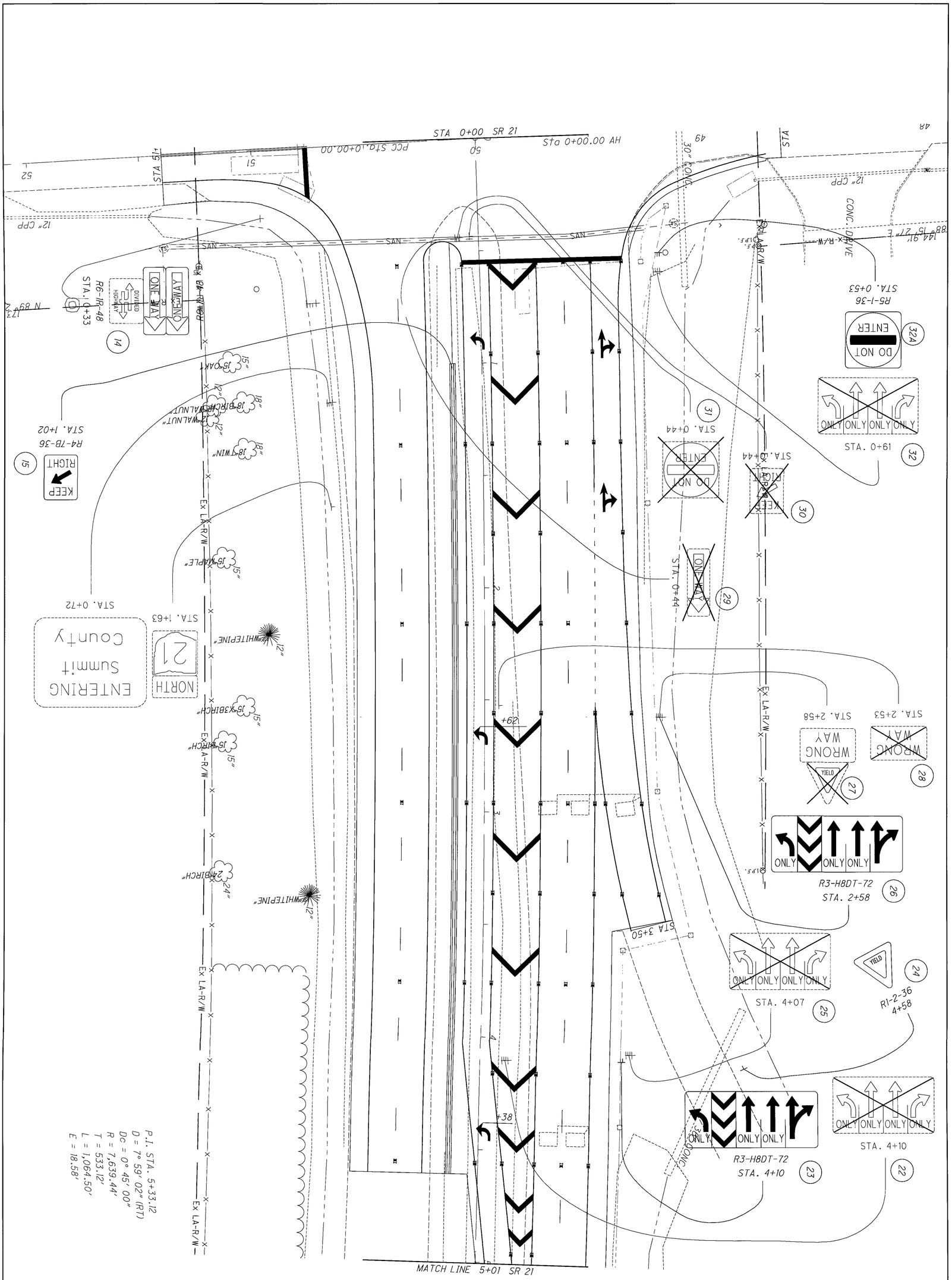
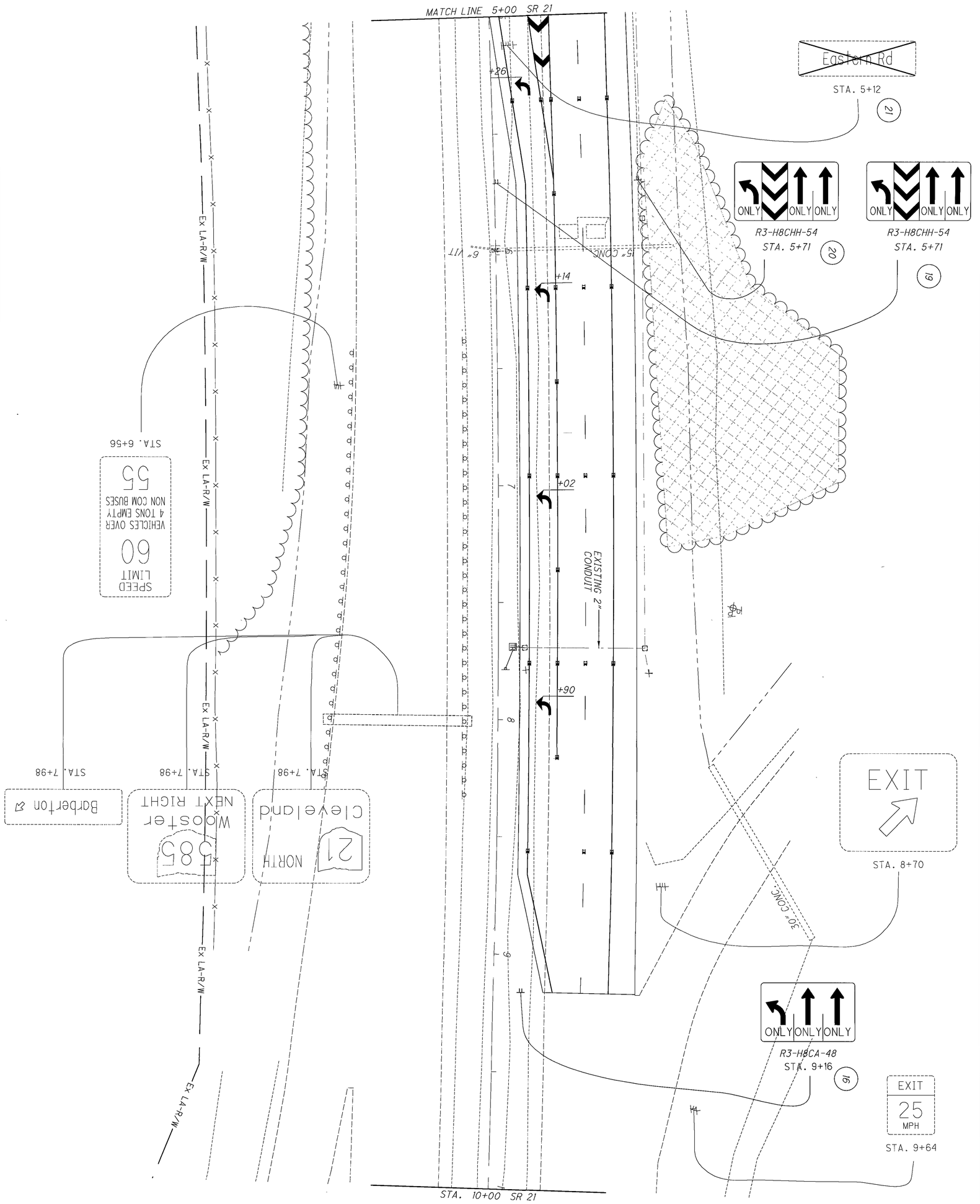
WORKSTATION: mschafra DATE: 6/1/2007



70 / 83	**WAY-21-5.74**	**TRAFFIC CONTROL SIGNING**	CALCULATED SJD / CHECKED BAD	0 20 10 40 HORIZONTAL SCALE IN FEET

DESIGN FILE: I:\projects\81797\roadway\sheets\81797TP105.dgn
WORKSTATION: mschafra DATE: 6/1/2007



83/71	**WAY-21-5.74**	**TRAFFIC CONTROL SIGNING**	CALCULATED SJD / CHECKED BAD	0 10 20 40 HORIZONTAL SCALE IN FEET

SIGNAL MAINTENANCE PERSONNEL REQUIREMENTS

THE CONTRACTOR SHALL ASSIGN A FULL-TIME SUPERVISOR FOR THIS PROJECT WHO SHALL COMPLY AT ALL TIMES TO THE PLAN REQUIREMENTS AND SPECIFICATIONS AS INTERPRETED AND INSTRUCTED BY THE ENGINEER. THE CONTRACTOR SHALL NOT CHANGE A SUPERVISOR ASSIGNED TO A PROJECT WITHOUT PRIOR WRITTEN NOTICE. IT IS UNDERSTOOD THAT THE CONTRACTOR IS RESPONSIBLE TO THE DEPARTMENT OF TRANSPORTATION FOR THE MANNER OF PERFORMING THE WORK.

ALL CONTROLLER WORK AS DEFINED BELOW IN ITEMS 1 THRU 4 SHALL BE PERFORMED BY AN INTERNATIONAL MUNICIPAL SIGNAL ASSOCIATION (IMSA) LEVEL TWO CERTIFIED TECHNICIAN.

1) BACK PANEL WIRING TERMINATIONS
2) PROGRAMMING
3) TURN ON
4) TROUBLESHOOTING

THE CONTRACTOR SHALL ALSO HAVE A FOREMAN ASSIGNED TO EACH CREW PERFORMING WORK FOR THIS PROJECT. A FOREMAN SHALL BE PRESENT AT ALL TIMES WHEN WORK IS PERFORMED BY THE CREW. EACH FOREMAN SHALL BE AN IMSA LEVEL ONE CERTIFIED TECHNICIAN. PRIOR VERBAL NOTICE SHALL BE PROVIDED TO THE ENGINEER BY THE CONTRACTOR IN ORDER TO REPLACE A CREW FOREMAN.

IN ADDITION, CRAFTS PEOPLE PERFORMING WORK AS DEFINED BELOW IN ITEMS 1 THRU 7 SHALL BE PERFORMED BY AN IMSA LEVEL ONE CERTIFIED TECHNICIAN.

1) CABLE SPLICES
2) SIGNAL HEAD INSTALLATIONS
3) CABLE AND WIRE INSTALLATIONS
4) POWER SERVICE INSTALLATIONS
5) GROUND ROD TESTING
6) CABLE INSULATION TESTING
7) FIELD WIRING TERMINATIONS

THE CONTRACTOR SHALL PROVIDE A MINIMUM OF TWO (2), FULLY EQUIPPED FOUR (4) PERSON CREWS. HOWEVER, THIS DOES NOT PRECLUDE THE USE OF A SMALLER CREW ON ITEMS REQUIRING FEWER PEOPLE WITH THE PRIOR WRITTEN APPROVAL OF THE ENGINEER. THIS REQUIREMENT IS IN ADDITION TO SATISFYING THE REQUIREMENTS OF SECTION **108.05** OF THE CMS MANUAL.

THE CONTRACTOR SHALL PRESENT TO THE ENGINEER, PRIOR TO THE COMMENCEMENT OF WORK, THE IMSA LEVEL ONE AND TWO CERTIFICATION PAPERS FOR ALL SIGNAL TECHNICIANS WORKING ON THIS PROJECT.

THE FOREMAN'S UTILITY WORK TRUCK SHALL BE EQUIPPED WITH A CELLULAR PHONE. THE CELLULAR PHONE NUMBER SHALL BE PROVIDED TO THE PROJECT ENGINEER AND THE DISTRICT 3 TRAFFIC DEPARTMENT.

WORKING DRAWINGS

THE REQUIREMENTS OF ITEM ***625.06, 632.04, AND 633.04*** OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS ARE HEREBY MODIFIED TO REQUIRE TWO (2) SETS OF SHOP DRAWINGS, CATALOG CUTS, SPECIFICATIONS, PHOTOMETRIC DATA, BROCHURES, DATA SHEETS AND WIRING DIAGRAMS FOR REVIEW AND APPROVAL, AS REQUIRED BY THE DIRECTOR, OF APPARATUS AND EQUIPMENT TO BE FURNISHED. THESE DOCUMENTS ARE TO BE PROVIDED TO THE DISTRICT THREE CONSTRUCTION ENGINEER, 906 NORTH CLARK STREET, ASHLAND, OHIO 44805 FOR APPROVAL BEFORE THE ITEMS ARE FURNISHED.

UNDERDRAINS FOR PULL BOXES

REFERENCE IS MADE TO STANDARD DRAWING HL-30.11 FOR DETAILS OF DRAINING PULL BOXES. UNDERDRAINS FOR PULL BOXES SHALL BE USED AS DIRECTED BY THE ENGINEER AND SHALL BE PROVIDED WHERE THE LENGTH REQUIRED FOR A SATISFACTORY OUTLET DOES NOT EXCEED APPROXIMATELY 25 FEET.

PAYMENT FOR UNDERDRAINS WILL BE MADE AT THE CONTRACT UNIT PRICE PER LINEAR FOOT FOR ITEM 603, 4" CONDUIT, TYPE E. THE FOLLOWING ESTIMATED QUANTITY IS INCLUDED IN THE GENERAL SUMMARY TO COMPLETE THIS WORK.

603 – 4" CONDUIT, TYPE E 50 FT.

ITEM 625 - LIGHT POLE FOUNDATION, 24" X 6' DEEP, AS PER PLAN

THIS ITEM OF WORK SHALL CONFORM TO THE REQUIREMENTS OF CMS **625.06**. THE FOUNDATION SHALL BE CONSTRUCTED TO ACCEPT THE AT-X ALUMINUM TRANSFORMER BASE AND INCLUDE ANCHOR BOLTS AND CONDUIT ELLS AS SHOWN IN THE PLAN.

PAYMENT SHALL BE AT THE UNIT PRICE BID PER EACH, ITEM 625, LIGHT POLE FOUNDATION, 24" X 6' DEEP, AS PER PLAN.

ITEM 625 – PULL BOX, 725.08, 18", AS PER PLAN

THIS ITEM SHALL BE PER CMS **625.11 AND 725.08** WITH THE FOLLOWING EXCEPTIONS: COVER SCREWS SHALL BE ¼" STAINLESS STEEL MACHINE SCREWS WITH SLOTTED HEADS. THE SCREWS SHALL FASTEN TO THE PULL BOX BY USE OF A STAINLESS STEEL THREADED CLIP. THREADED INSERTS EMBEDDED IN CONCRETE SHALL NOT BE PERMITTED. COVERS SHALL BE GALVANIZED AND HAVE A TEXTURED SURFACE FOR SLIP RESISTANCE.

PAYMENT WILL BE MADE AT CONTRACT UNIT PRICE PER EACH.

ITEM 625 - PULL BOX, MISC.: PULL BOX ADJUSTED TO GRADE, AS PER PLAN

THIS ITEM OF WORK SHALL REQUIRE THE CONTRACTOR TO UNCOVER AN EXISTING PULL BOX, **725.08**, AND RAISE IT TO GRADE SO THAT THE TOP OF THE PULL BOX IS LEVEL WITH THE ADJACENT GROUND. EXTREME CARE SHOULD BE EXERCISED BY THE CONTRACTOR IN THE EXCAVATION, RAISING, AND/OR REMOVAL OF THE EXISTING PULL BOX SO AS NOT TO DAMAGE THE EXISTING PULL BOX, CONDUIT(S) AND /OR CABLE(S).

NO. 8 AGGREGATE SHALL BE USED TO BACKFILL UNDER THE PULL BOX TO RAISE IT TO GRADE. ALL OPENINGS IN THE SIDES OF THE PULL BOX SHALL BE REGROUTED IF NEEDED. THE CONTRACTOR SHALL INSTALL ANY EXTENSION(S) TO THE EXISTING CONDUIT(S) IF NECESSARY, TO INSURE PROPER ORIENTATION IN THE NEW PULL BOX. THE EXTENSION(S) SHALL BE COMPATIBLE WITH THE EXISTING CONDUIT SIZE AND TYPE. IF THE EXISTING CABLES MUST BE SEVERED TO INSTALL THE CONDUIT EXTENSION(S) THE CONTRACTOR SHALL ALSO FURNISH AND INSTALL CABLE SPLICE KIT(S) OR CONNECTOR(S) CONFORMING TO THE REQUIREMENTS OF **725.15**. IF THE SEVERING OF THE EXISTING CABLE WILL CAUSE A DISRUPTION TO THE OPERATION OF THE EXISTING TRAFFIC SIGNAL, THE CONTRACTOR SHALL PROVIDE FLAGGERS AND SIGNS AS PER OMUTCD TO CONTROL TRAFFIC UNTIL THE SEVERED CABLE IS REPAIRED. SIGNAL CABLE (EXCLUDING CABLE FOR SIGN FLASHERS) SHALL NOT BE CUT AND SPLICED UNDER ANY CONDITION. ALL WORK SHALL BE PER SCD HL-30.11. RESTORATION OF GROUND SURFACES AND DISPOSAL OF SURPLUS MATERIAL SHALL BE IN ACCORDANCE WITH CMS **603.10**.

PAYMENT FOR THIS ITEM SHALL INCLUDE ALL LABOR, MATERIAL, AND EQUIPMENT REQUIRED TO PERFORM THE ITEM OF WORK AS DESCRIBED ABOVE. BASIS OF PAYMENT WILL BE AT THE CONTRACT BID PRICE PER EACH.

ITEM 625 - PULL BOX, MISC.: PULL BOX REMOVED AND REINSTALLED, AS PER PLAN,

THIS ITEM OF WORK SHALL REQUIRE THE CAREFUL REMOVAL OF AN EXISTING CONCRETE PULL BOX, **725.08**, AND REINSTALLATION AT A LOCATION DESIGNATED IN THE PLAN OR AS DESIGNATED BY THE ENGINEER. PRIOR TO REMOVAL OF THE PULL BOX, THE CONTRACTOR SHALL CAREFULLY REMOVE THE EXISTING CABLE(S) INSIDE EXISTING CONDUIT(S). EXTREME CARE SHALL BE TAKEN TO NOT DAMAGE THE CABLE SINCE IT WILL BE REINSTALLED IN NEW CONDUIT. IF THE CABLE IS DAMAGED IT SHALL BE REPLACED FULL LENGTH WITHOUT SPLICES. THE EXCAVATED AREA WHERE THE PULL BOX WAS REMOVED SHALL BE BACKFILLED PER CMS **203.05** . GROUND RESTORATION SHALL BE INCLUDED WITH THIS ITEM.

PAYMENT FOR THIS ITEM WILL INCLUDE ALL LABOR, MATERIAL, AND EQUIPMENT REQUIRED TO PERFORM THE ITEM OF WORK AS DESCRIBED ABOVE. BASIS OF PAYMENT WILL BE AT THE CONTRACT BID PRICE PER EACH.

ITEM 625 - TRENCH, AS PER PLAN

THIS ITEM SHALL CONSIST OF EXCAVATING THE TRENCH TO A DEPTH OF THIRTY (30) INCHES, BACKFILLING, AND RESTORING THE AREA.

IDENTIFYING TAPE SHALL BE USED TO IDENTIFY WHERE UNDERGROUND CABLE HAS BEEN INSTALLED. THE IDENTIFYING TAPE SHALL BE AN INERT MATERIAL, APPROXIMATELY SIX (6) INCHES WIDE, COMPOSED OF POLYETHYLENE PLASTIC HIGHLY RESISTANT TO ALKALIS, ACID OR OTHER CHEMICAL COMPOUNDS LIKELY TO BE ENCOUNTERED IN SOILS. THE TAPE SHALL BE SUPPLIED IN CONTINUOUS ROLLS WITH THE IDENTIFYING LETTERING REPEATED CONTINUOUSLY THE FULL LENGTH OF THE TAPE. THE TAPE SHALL BE ALLEN SYSTEMS, TERRA TAPE, TECTA TAPE OR EQUAL APPROVED BY THE ENGINEER.

THE TAPE SHALL BE BURIED IN THE ELECTRIC LINE TRENCH WITH ONE STRIP PLACED NO LESS THAN TWO (2) INCHES OR MORE THAN TWELVE (12) INCHES BELOW THE FINAL FINISHED GRADE OF THE TRENCH. THE TAPE SHALL BE PLACED WITH THE PRINTED SIDE UP AND SHALL BE ESSENTIALLY PARALLEL WITH THE FINAL GRADE.

PAYMENT WILL BE MADE AT CONTRACT UNIT PRICE PER FOOT.

ITEM 625 - GROUND ROD, AS PER PLAN

THIS ITEM SHALL CONSIST OF FURNISHING AND DRIVING A ONE (1) INCH BY TEN (10) FOOT GROUND ROD BELOW GRADE ADJACENT TO THE CONTROLLER HOUSING. ALSO INCLUDED IS THE FURNISHING AND RUNNING OF A CONTINUOUS UNBROKEN SEVEN (7) STRAND # 4 COPPER WIRE FROM THE TOP OF THE GROUND ROD AND ATTACHING IT TO THE GROUND LUG IN THE DISCONNECT SWITCH PER NEC. GROUND ROD RESISTANCE SHALL BE TEN (10) ohms MAXIMUM.

PAYMENT WILL BE MADE AT THE CONTRACT UNIT PRICE PER EACH.

ITEM 630 - SIGN HANGER ASSEMBLY, SPAN WIRE, AS PER PLAN

THIS ITEM SHALL CONSIST OF THE CONTRACTOR FURNISHING AND INSTALLING A SIGN HANGER ASSEMBLY AND THE INSTALLATION OF A SPAN WIRE MOUNTED SIGN. THE SIGN SHALL BE TETHERED AS DETAILED ON SHEET NO. **83** IN THIS PLAN.

PAYMENT FOR THIS ITEM WILL BE AT THE CONTRACT UNIT PRICE PER EACH AND SHALL INCLUDE ALL THE ABOVE EXCLUDING THE SIGN WHICH WILL BE PAID BY SEPARATE PAY ITEM.

ITEM 632 – SIGNALIZATION MISC.; REMOVAL AND REINSTALLATION OF SIGN FLASHER INSTALLATION, AS PER PLAN

THE EXISTING SIGN FLASHER INSTALLATIONS SHALL BE REMOVED AND REINSTALLED AS DESIGNATED AT LOCATIONS SHOWN IN THE PLAN.

WHERE A FOUNDATION IS TO BE REMOVED, IT SHALL BE REMOVED TO A MINIMUM OF 12" BELOW GRADE AND THE RESULTING HOLE BACKFILLED AND COMPACTED SO AS TO PREVENT SETTLEMENT. RESTORATION OF SURFACES AND DISPOSAL OF SURPLUS MATERIAL SHALL BE IN ACCORDANCE WITH CMS **603.10**.

ITEMS FOR REMOVAL AND RELOCATION SHALL INCLUDE THE 15' STEEL POLE, ATX TRANSFORMER BASE, SIGN, SIGN ATTACHEMNT HARDWARE, BEACON W/ DOWNLIGHT, AND PHOTOELECTRIC CONTROL. THESE ITEMS SHALL BE CAREFULLY REMOVED SO AS NOT TO DAMAGE ANY OF THE ITEMS. THE CONTRACTOR SHALL REPLACE ANY ITEMS DAMGED DURING THE RELOCATION WITH NEW.

THE RELOCATED SIGN FLASHER INSTALLATION SHALL BE INSTALLED ON A NEW CONCRETE FOUNDATION PER THE DETAIL ON SHEET NO. 81. THE CONCRETE FOUNDATION SHALL BE PAID BY SEPARATE PAY ITEM IN THIS PLAN.

PAYMENT FOR THIS ITEM SHALL BE AT THE CONTRACT UNIT PRICE PER EACH AND INCLUDE ALL THE ABOVE PLUS LABOR, EQUIPMENT, AND MATERIALS NECESSARY TO MAKE THE SIGN FLASHER OPERATIONAL.

ITEM 632 – LOOP DETECTOR TIE-IN, AS PER PLAN

THIS WORK SHALL CONSIST OF MAKING CONNECTIONS TO EXISTING LOOP DETECTOR LEAD-IN CABLE WHETHER THAT WIRE IS UNDERGROUND OR AERIAL. INCLUDED IN THIS ITEM IS THE CONNECTOR KIT OR CABLE SPLICE KIT (CONFORMING TO 725.15) THAT IS REQUIRED TO BE USED WHEN MAKING THESE CONNECTIONS.

THIS ITEM IS ONLY NEEDED WHEN A TIE-IN SITUATION EXISTS WHERE AN EXISTING CABLE IS SPLICED TO A NEW CABLE. WHEN ALL NEW CABLE IS SPECIFIED IN THE PLAN, THIS ITEM OF WORK IS NOT REQUIRED.

PAYMENT FOR THIS ITEM SHALL INCLUDE ALL NECESSARY LABOR, MISCELLANEOUS HARDWARE AND EQUIPMENT REQUIRED FOR THE LOOP DETECTOR TIE-IN AND OPERATION. BASIS OF PAYMENT WILL BE AT CONTRACT BID PRICE PER EACH.

ITEM 632 - LOOP DETECTOR UNIT, DELAY AND EXTENSION TYPE, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF CMS 632, *732.07, AND 732.08,* LOOP DETECTOR UNITS SHALL HAVE THE FOLLOWING REQUIREMENTS OR FEATURES:

1) THE OUTPUT DEVICE SHALL BE AN ELECTROMECHANICAL RELAY AND ALL CONTACTS SHALL BE INCLUDED IN THE WIRING HARNESS.

2) THE UNIT SHALL BE SELF TUNING.

3) THE UNIT'S ELECTRICAL CONNECTION PLUGS OR WIRING HARNESS SHALL ALLOW READY REPLACEMENT WITH SINGLE CHANNEL AMPLIFIERS AS DESCRIBED IN THE FINAL PARAGRAPH OF CMS *732.07*.

IN ADDITION TO THE REQUIREMENTS LISTED ABOVE, THE DETECTOR UNIT SHALL BE A SINGLE CHANNEL UNIT AND HAVE EASILY ADJUSTABLE TIMERS INCORPORATED IN THE UNIT THAT ARE CAPABLE OF BOTH EXTEND CALL AND DELAY CALL OUTPUTS. THESE ADJUSTMENTS SHALL BE SEPARATE AND CONTROLLABLE BY CALIBRATED SWITCHES OR KNOBS ON THE OUTSIDE OF THE DETECTOR UNIT. THE EXTEND CALL TIMER SHALL BE CAPABLE OF HOLDING THE CALL OF A VEHICLE FOR A PERIOD OF TIME BEGINNING AT THE INSTANT THE VEHICLE LEAVES THE DETECTION AREA. THE DELAY CALL TIMER SHALL BE SUCH THAT IT DOES NOT ISSUE AND OUTPUT UNTIL THE DETECTION ZONE HAS BEEN OCCUPIED FOR A PERIOD OF TIME THAT HAS BEEN SET ON THE ADJUSTABLE TIMER. WHEN TIMES ARE SET ON BOTH THE DELAY AND EXTEND TIMERS, THE UNIT SHALL BE DESIGNED TO INHIBIT THE EXTEND FUNCTION UNTIL THE DELAY TIME HAS BEEN MET. WHEN THE LOOP BECOMES UNOCCUPIED, THE DELAY OUTPUT IS REMOVED. WHEN THE VEHICLE GAP EXCEEDS THE EXTEND TIME, THE ENTIRE DELAY-EXTEND OPERATION BECOMES EFFECTIVELY RESET FOR THE NEXT CYCLE - DELAY TO TIME OUT, ETC.

PAYMENT FOR ITEM 632 - LOOP DETECTOR UNIT, DELAY AND EXTENSION TYPE, AS PER PLAN SHALL BE MADE AT THE CONTRACT UNIT PRICE BID PER EACH AND SHALL INCLUDE ALL LABOR, EQUIPMENT, AND MATERIALS.

ITEM 632 – VEHICULAR SIGNAL HEAD (BY TYPE), AS PER PLAN

VEHICULAR SIGNAL HEADS USED ON THIS PROJECT SHALL BE POLYCARBONATE WITH LED SIGNAL LAMPS. SIGNAL HEAD HANGERS SHALL BE TRI-STUD DESIGN WITH SERRATED RINGS IN ORDER TO ACHIEVE POSITIVE LOCKING. THE HANGERS SHALL BE AS MANUFACTURED BY PELCO PRODUCTS, INC. (PART NO. SE-0523 AND SE-0531) OR APPROVED EQUAL. THREADED PIPE STYLE HANGERS SHALL NOT BE PERMITTED. THE SIGNAL HEAD HANGER SHALL INCLUDE A STAINLESS STEEL BUSHING IN THE PIN HOLE.

ADJUSTABLE SIGNAL HANGERS WITH TRI-STUD ATTACHMENT WILL BE PERMITTED AS NEEDED TO PROVIDE PROPER SIGNAL HEAD CLEARANCE. DROP PIPES WITH THREADED ENDS SHALL NOT BE USED ON THIS PROJECT.

TWO-WAY SIGNAL HEADS SHALL HAVE A RIGID LOWER SPREADER BAR AS MANUFACTURED BY PELCO PRODUCTS, INC. (PART NO. SE-5060) OR APPROVED EQUAL.

ALL VEHICULAR SIGNAL HEADS SHALL INCLUDE ABS BACKPLATES. THE BACKPLATE SHALL SURROUND THE TOP, BOTTOM, AND BOTH SIDES OF THE SIGNAL HEAD. THE BORDER WIDTH SHALL BE 5". THE BACKPLATES SHALL BE ATTACHED TO THE SIGNAL HEAD USING STAINLESS STEEL SCREWS.

ALL VEHICULAR SIGNAL HEADS SHALL BE ATTACHED TO THE EXISTING TETHER WIRE AS SHOWN ON THE PLAN DETAIL SHEET NO. 83. FINAL CLEARANCE FROM PAVEMENT TO TETHER WIRE SHALL BE A MINIMUM OF 16'. ANY ADJUSTMENTS TO THE SPAN TO MAINTAIN THE 16' MINIMUM CLEARANCE SHALL BE CONSIDERED INCIDENTAL TO THIS PAY ITEM.

THE LAMPS SHALL BE LIGHT EMITTING DIODE (LED) EXTENDED VIEW TRAFFIC SIGNAL LAMP UNITS AND MEET THE LATEST REQUIREMENTS OF SUPPLEMENTAL SPECIFICATION 872.

PAYMENT FOR ITEM 632 - VEHICULAR SIGNAL HEAD (BY TYPE), AS PER PLAN, WILL BE MADE AT THE CONTRACT UNIT PRICE PER EACH.

ITEM 632 – COVERING OF VEHICULAR SIGNAL HEADS, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF CMS *632.25*, EACH VEHICULAR SIGNAL HEADS SHALL BE COVERED IMMEDIATELY FOLLOWING INSTALLATION AND REMAIN COVERED UNTIL ENERGIZED. THE COVERING MATERIAL SHALL BE LARGE ENOUGH TO COVER THE FRONT AND BOTH SIDES OF THE VEHICULAR SIGNAL HEAD. THE COVERING MATERIAL SHALL BE A CANVAS OR SIMILAR DURABLE MATERIAL. USE OF POLYETHELENE TRASH BAGS AS A COVERING MATERIAL SHALL NOT BE PERMITTED.

ITEM 632 - SIGNALIZATION, MISC.: REMOVE AND REINSTALL LASHING RODS

THIS WORK WILL REQUIRE THE CONTRACTOR TO CAREFULLY REMOVE THE LASHING RODS ACROSS AN EXISTING SIGNAL SPAN SO THAT CABLE(S) CAN BE INSTALLED. AS THE CABLE(S) IS INSTALLED IT SHALL BE CAREFULLY LASHED WITH OTHER EXISTING CABLES UTILIZING THE REMOVED LASHING RODS.

PAYMENT FOR THIS ITEM OF WORK WILL BE IN LINEAL FOOT OF LASHING ROD REMOVED AND INCLUDE ALL LABOR AND EQUIPMENT, INCLUDING TRAFFIC CONTROL, TO PERFORM THE WORK DESCRIBED ABOVE.

ITEM 632 - SIGNALIZATION, MISC.: REMOVE AND REINSTALL CABLE, AS PER PLAN

THIS WORK WILL REQUIRE THE CONTRACTOR TO CAREFULLY REMOVE EXISTING LEAD-IN CABLE AND/OR SIGNAL CABLE AND THEN CAREFULLY REORUTE THE CABLE AS SHOWN IN THE PLAN .

PAYMENT FOR THIS ITEM OF WORK WILL BE IN LINEAL FEET OF LENGTH OF CONDUIT OR MESSENGER REGARDLESS OF THE NUMBER OF CABLES BEING REMOVED AND REROUTED. THIS ITEM SHALL INCLUDE ALL LABOR AND EQUIPMENT, INCLUDING TRAFFIC CONTROL, TO PERFORM THE WORK DESCRIBED ABOVE.

ITEM 633 – CONTROLLER MISC.; MODIFICATION OF CONTROLLER CABINET, AS PE RPLAN

THIS ITEM SHALL CONSIST OF ALL MODIFICATIONS NEEDED TO THE EXISTING 8-PHASE NEMA CONTROLLER CABINET TO IMPLEMENT THE PHASE CHANGES AS SHOWN IN THE PLANS. ALSO INCLUDED WILL BE SIGNAL TIMING CHANGES PER THE PLAN.

PAYMENT WILL BE MADE AT THE CONTRACT UNIT PRICE PER EACH AND SHALL INCLUDE ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY TO MAKE THE PHASE CHANGE OPERATIONAL.

MAINTAINING TRAFFIC FOR SIGNAL/FLASHER INSTALLATIONS

THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE TRAFFIC SIGNAL, FLASHER, AND SIGN FLASHER INSTALLATIONS WITHIN THE PROJECT UNDER THE FOLLOWING CONDITIONS:

1) EXISTING SIGNAL/FLASHER/SIGN FLASHER INSTALLATIONS WHICH THE PLANS REQUIRE THE CONTRACTOR TO ADJUST, MODIFY, ADD ONTO OR REMOVE, OR WHICH THE CONTRACTOR ACTUALLY ADJUSTS, MODIFIES OR OTHERWISE DISTURBS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ENTIRE INSTALLATION (AT EACH LOCATION BEING WORKED ON) FROM THE TIME HIS OPERATIONS FIRST DISTURBS THE INSTALLATION UNTIL THE INSTALLATION HAS BEEN SUBSEQUENTLY REMOVED OR MODIFIED AND THE WORK IS ACCEPTED.

2) NEW OR REUSED SIGNAL/FLASHER/SIGN FLASHER INSTALLATIONS OR DEVICES, INSTALLED BY THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE OF THESE FROM THE TIME OF INSTALLATION UNTIL THE WORK IS ACCEPTED.

WHEN THE CONTRACTOR IS REQUIRED TO MODIFY THE PHASING OF AN EXISTING TRAFFIC SIGNAL INSTALLATION, THE CONTRACTOR SHALL ERECT TEMPORARY SPANWIRE MOUNTED SIGNS (W3-H10, 30" X 30") WITH THE LEGEND "SIGNAL OPERATION CHANGED". THE CONTRACTOR SHALL ERECT THESE SIGNS AS SHOWN IN THE SPAN DETAIL ON SHEET NO. 72. THE SIGNS SHALL BE ERECTED THE SAME DAY OF, AND JUST PRIOR TO, THE ACTUAL CHANGE IN PHASING OPERATION. THE SIGNS SHALL REMAIN IN PLACE AND BE MAINTAINED BY THE CONTRACTOR FOR 30 DAYS FOLLOWING THE CHANGE IN OPERATION AFTER WHICH THE CONTRACTOR SHALL REMOVE THE SIGNS AND ATTACHMENT HARDWARE AND ALSO RELASH THE SIGNAL CABLES AS NEEDED. PAYMENT FOR ALL LABOR AND MATERIALS NECESSARY FOR THE INSTALLATION, MAINTENANCE, AND SUBSEQUENT REMOVAL OF THE SIGNS SHALL BE CONSIDERED INCIDENTAL TO AND INCLUDED AS PART OF ITEM 614, MAINTAINING TRAFFIC.

THE CONTRACTOR SHALL CORRECT AS QUICKLY AS POSSIBLE ALL OUTAGES OR MALFUNCTIONS. HE SHALL PROVIDE THE ENGINEER SUCH ADDRESSES AND PHONE NUMBERS WHERE HIS MAINTENANCE FORCES CAN BE CONTACTED. THE CONTRACTOR SHALL PROVIDE ONE OR MORE PERSONS TO RECEIVE ALL CALLS AND DISPATCH THE NECESSARY MAINTENANCE FORCES TO CORRECT OUTAGES. SUCH A PERSON OR PERSONS MAY BE USED TO PERFORM OTHER DUTIES AS LONG AS PROMPT ATTENTION IS GIVEN TO THESE CALLS AND A PERSON IS READILY AVAILABLE CONTINUOUSLY 24 HOURS A DAY, 7 DAYS A WEEK. ALL LAMP OUTAGES, CABLE OUTAGES, ELECTRICAL FAILURES, EQUIPMENT MALFUNCTIONS AND MISALIGNED SIGNAL HEADS SHALL BE CORRECTED TO THE SATISFACTION OF THE ENGINEER WITH THE SIGNAL BACK TO SERVICE WITHIN FOUR HOURS AFTER THE CONTRACTOR HAS BEEN NOTIFIED OF THE PROBLEM.

IN THE EVENT NEW ELECTRICAL INSTALLATIONS ARE DAMAGED PRIOR TO ACCEPTANCE ALL DAMAGED EQUIPMENT EXCEPT POLES AND CONTROL EQUIPMENT SHALL BE REPLACED BY THE CONTRACTOR TO THE

SATISFACTION OF THE ENGINEER WITH THE SIGNAL BACK IN SERVICE WITHIN 8 HOURS AFTER THE CONTRACTOR'S NOTIFICATION OF THE OUTAGE.

IF POLE AND/OR CONTROL EQUIPMENT ARE DAMAGED AND MUST BE REPLACED, THE CONTRACTOR SHALL MAKE TEMPORARY REPAIRS AS NECESSARY TO BRING THE SIGNAL BACK INTO FULL OPERATION WITHIN THE ALLOWED 8-HOUR PERIOD, AND SHALL MAKE PERMANENT REPAIRS OF REPLACEMENT AS SOON THEREAFTER AS POSSIBLE.

NONE OF THE ABOVE SHALL BE CONSIDERED AS COLLECTIVE OR CONSECUTIVE OUTAGE TIME PERIODS AT ANY ONE LOCATION. THAT IS, WHERE MORE THAN ONE OUTAGE OCCURS AT ANY ONE LOCATION, THEN THE ALLOTTED TIME LIMIT SHALL BE FOR THE WORST SINGLE OUTAGE.

WHERE OUTAGES ARE THE DIRECT RESULT OF A VEHICLE ACCIDENT THE RESPONSE OF THE CONTRACTOR SHALL BE AS OUTLINED ABOVE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COLLECTION ON ANY COMPENSATION FOR THIS WORK FROM THOSE PARTIES RESPONSIBLE FOR THE DAMAGE.

WHERE THE CONTRACTOR HAS FAILED TO OR CANNOT RESPOND TO AN OUTAGE OR SIGNAL EQUIPMENT MALFUNCTION AT THE LOCATIONS INDICATED AS HIS RESPONSIBILITY IN THE PLANS WITHIN PERIODS AS SPECIFIED ABOVE, THE ENGINEER MAY INVOKE THE PROVISIONS OF CMS ***105.15***. ANY SUBSEQUENT BILLINGS TO THE STATE OR POLICE SERVICES AND MAINTENANCE SERVICES BY STATE FORCES SHALL BE DEDUCTED FROM MONIES DUE OR TO BECOME DUE TO THE CONTRACTOR IN ACCORDANCE WITH PROVISIONS OF CMS ***105.15***.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO ANY TRAFFIC SIGNAL COMPONENTS REQUIRED TO BE HANDLED DURING THE RELOCATION OF POLES AND REVISIONS TO THE SIGNAL.

WHEN A TRAFFIC SIGNAL MUST BE TAKEN OUT OF SERVICE BY THE CONTRACTOR, DUE TO CONSTRUCTION PROCEDURES, THIS OUTAGE SHALL NOT EXCEED 6 HOURS AND SHALL NOT INCLUDE THE HOURS OF 7 AM TO 9 AM AND 3 PM TO 6 PM OR OTHER HOURS AS DIRECTED BY THE ENGINEER. ANY SIGNALIZED INTERSECTION, WHERE THE SIGNAL IS OUT OF SERVICE DUE TO CONSTRUCTION PROCEDURES, OR DUE TO AN OUTAGE OR MALFUNCTION OF EQUIPMENT AS DESCRIBE ABOVE, SHALL BE PROTECTED BY OFF DUTY LAW ENFORCEMENT OFFICERS.

ANY INSTALLED VEHICULAR TRAFFIC SIGNAL HEAD WHICH WILL BE OUT OF OPERATION SHALL BE COVERED IN THE MANNER DESCRIBED IN THE GENERAL NOTE IN THIS PLAN.

ALL COSTS RESULTING FROM THE ABOVE REQUIREMENTS SHALL BE CONSIDERED TO BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 614 - MAINTAINING TRAFFIC.

MAINTAINING TRAFFIC

THE INTENT IS TO PERFORM THE REQUIRED WORK WITH THE LEAST INCONVENIENCE TO, AND THE MAXIMUM SAFETY TO, THE CONTRACTOR AND THE TRAVELING PUBLIC.

PROCEDURES FOR MAINTAINING TRAFFIC SHALL BE IN COMPLIANCE WITH THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, AND STANDARD CONSTRUCTION DRAWINGS SHOWN ON THE TITLE SHEET OF THIS PLAN. WORK ON OR BEYOND THE SHOULDER SHALL BE IN ACCORDANCE WITH FIGURES 6H-1, 6H-3, AND 6H-4 OF THE OMUTCD. FLAGGING PROCEDURES SHALL BE IN ACCORDANCE WITH FIGUIRE 6E-1 OF THE OMUTCD.

PROCEDURES FOR MAINTAINING TRAFFIC FOR NEW SIGNAL ACTIVATIONS SHALL BE PERFORMED AS SHOWN ON STANDARD DRAWING MT-120.00 EXCEPT FOR THE FOLLOWING:

1) THE CONTRACTOR SHALL INSTALL FLAGS ON THE SIDE ROAD "SIGNAL AHEAD" WARNING SIGN(S).

2) STOP SIGNS SHALL BE REMOVED IMMEDIATELY PRIOR TO ACTIVATING THE NEW SIGNAL TO STOP-AND-GO OPERATION. FLAGGERS SHALL CONTROL TRAFFIC DURING THE STOP SIGN REMOVAL. ALL TRAFFIC SHALL BE STOPPED BY FLAGGERS WHEN THE NEW SIGNAL IS ACTIVATED TO STOP-AND-GO. TRAFFIC SHALL REMAIN STOPPED UNTIL THE SIGNAL HAS COMPLETED ONE FULL CYCLE AND DETERMINATION HAS BEEN MADE BY THE ENGINEER THAT THE SIGNAL OPERATION IS SATISFACTORY. AT THIS POINT FLAGGERS CAN OPEN THE INTERSECTION TO TRAFFIC.

THE CONTRACTOR SHALL MAINTAIN TRAFFIC AT ALL TIMES IN ACCORDANCE WITH THE REQUIREMENTS OF ITEM 614. TWO-WAY TRAFFIC SHALL BE MAINTAINED AT ALL TIMES, EXCEPT AS NOTED HEREIN.

THE CONTRACTOR WILL BE REQUIRED TO PROVIDE, ERECT, AND MAINTAIN IN PROPER POSITION, CLEAN, LEGIBLE DEVICES IN GOOD WORKING CONDITION AND SUBSEQUENTLY REMOVE ALL LIGHTS, SIGNS, BARRICADES, CONES, AND ALL OTHER TRAFFIC CONTROL DEVICES NECESSARY FOR THE MAINTENANCE OF TRAFFIC.

PLACEMENT OF ALL TRAFFIC CONTROL DEVICES SHALL START AND PROCEED IN THE DIRECTION OF THE FLOW OF TRAFFIC. REMOVAL OF TRAFFIC CONTROL DEVICES SHALL START AT THE END OF THE CONSTRUCTION AREA AND PROCEED TOWARD THE ONCOMING TRAFFIC. THE CONTRACTOR SHALL PROVIDE FOR INSTALLATION OF ALL NECESSARY TRAFFIC CONTROL DEVICES BEFORE BEGINNING WORK AND THEIR IMMEDIATE REMOVAL AS SOON AS WORK IS SUSPENDED OR COMPLETED. ADVANCE WARNING SIGNS MAY BE COVERED FROM VIEW OF TRAFFIC WHEN THEY ARE NOT APPLICABLE, AS DETERMINED BY THE ENGINEER.

LANE CLOSURES (TAPERS AND TRANSITIONS) MAY BE ACCOMPLISHED BY THE USE OF TRAFFIC CONES, WITH A 28" MINIMUM HEIGHT. WITH THE APPROVAL OF THE ENGINEER, CONES MAY BE USED FOR SHORT TIME CLOSURES. THE CONES SHALL BE SPACED CENTER TO CENTER FROM THE BEGINNING OF THE FIRST LANE CLOSURE THROUGH THE WORK AREA(S) AS PER THE TABLE ON THE STANDARD DRAWINGS. REFLECTORIZED BARRICADES OR DRUMS MAY BE USED IN LIEU OF TRAFFIC CONES, IF DESIRED.

LANE CLOSURES (TAPERS AND TRANSITIONS) SHALL BE ACCOMPLISHED BY THE USE OF REFLECTORIZED BARRICADES OR DRUMS IN AREAS WHERE AN OVERNIGHT CLOSURE(S) IS REQUIRED. THE DEVICES SHALL BE SPACED CENTER TO CENTER FROM THE BEGINNING OF THE FIRST LANE CLOSURE THROUGH THE WORK AREA(S) AS PER THE STANDARD DRAWINGS.

AN INTERSECTION MAY BE CLOSED WITH FLAGGERS FOR A SHORT DURATION (MAXIMUM OF 10 MINUTES EACH) TO ERECT THE SPAN WIRES. TRAFFIC MAY NOT BE STOPPED AT AN INTERSECTION OR FOR A LANE OR BERM CLOSURE BETWEEN THE HOURS OF 7:00 AM TO 9:00 AM AND 3:00 PM TO 6:00 PM MONDAY THROUGH FRIDAY OR OTHER HOURS AS DIRECTED BY ENGINEER. TRAFFIC SHALL NOT BE STOPPED ON ANY ROAD FROM 12:00 NOON THE DAY PRECEDING A HOLIDAY THROUGH 6:00 AM THE DAY AFTER. NO TRAFFIC CLOSURES WILL OCCUR ON SATURDAY OR SUNDAY WITHOUT THE APPROVAL OF THE ENGINEER.

ON TWO-LANE HIGHWAYS, ONE-LANE CLOSURES SHALL BE OPERATED BY USE OF FLAGGERS AND WILL BE REQUIRED WHENEVER TRAFFIC IS RESTRICTED TO LESS THAN THE NORMAL WIDTH OF THE TWO-LANE PAVEMENT AS PER STANDARD CONSTRUCTION DRAWING MT-97.10.

ON THREE-LANE HIGHWAYS, LANE CLOSURES SHALL BE OPERATED AS PER STANDARD DRAWINGS MT-95.60 AND MT-95.61.

A FLASHING ARROW PANEL SHALL BE REQUIRED WHENEVER ANY WORK IS BEING DONE UPON ANY TRAVELED PORTION OF A MULTI-LANE HIGHWAY. SEE STANDARD CONSTRUCTION DRAWING MT-35.10 FOR FLASHING ARROW PANEL SIZE.

IF THE CONTRACTOR FAILS TO COMPLY WITH THE PROVISIONS FOR TRAFFIC CONTROL AS SET FORTH IN THESE PLANS OR WITH PROVISIONS OF THE OMUTCD, AND SUCH FAILURE RESULTS IN A CONDITION AT THE WORK SITE WHICH IS UNSAFE FOR TRAFFIC, THE ENGINEER SHALL SUSPEND WORK UNTIL THE CONTRACTOR COMPLIES WITH THE NECESSARY REQUIREMENTS.

PAYMENT FOR ALL OF THE ABOVE INCLUDING PROVIDING, ERECTING, MAINTAINING, AND REMOVING, SIGNS BARRICADES, DRUMS CONES AND ALL OTHER TRAFFIC CONTROL DEVICES, SHALL BE INCLUDED IN THE LUMP SUM BID FOR THIS ITEM.

ITEM 632 – DETECTOR LOOP, AS PER PLAN

AN ESTIMATED QUANTITY OF 632 DETECTOR LOOP, AS PER PLAN HAS BEEN PROVIDED WHEN WIRE IS CUT, BROKEN OR DESTROYED DUE TO PAVEMENT PLANING, PAVEMENT REPAIR OR BUTT JOINT OPERATIONS. IT IS IMPERATIVE THAT REPLACEMENT OF LOOP DETECTORS BE INSTALLED AND FULLY FUNCTIONAL IN THE SHORTEST POSSIBLE TIME. THE CONTRACTOR SHALL HAVE REPLACEMENT LOOP DETECTORS INSTALLED AND FULLY FUNCTIONAL WITHIN 7 CALENDAR DAYS OF DESTRUCTION OF THE ORIGINAL LOOP.

FAILURE TO COMPLY WITH THE ABOVE STATED REQUIREMENTS WILL RESULT IN THE ASSESSMENT OF LIQUIDATED DAMAGES ACCORDING TO SECTION **108.07** OF THE CMS FOR EACH CALENDAR DAY BEYOND THE SPECIFIED LIMIT.

THE NEW LOOP DETECTORS SHALL BE PLACED AFTER THE PLANING AND PAVEMENT REPAIR OPERATIONS ARE COMPLETED WITHIN THE LOOP DETECTOR AREAS. THE LOOP DETECTORS SHALL NOT BE CUT INTO THE SURFACE COURSE.

NEW LOOP DETECTORS SHALL BE PLACED AT THE SAME LOCATIONS AND BE THE SAME SIZE AND TYPE AS THE EXISTING, OR AS DIRECTED BY THE ENGINEER. THE LOOP DETECTOR WIRE SHALL BE REPLACED TO THE PULL BOX OR POLE, WHICHEVER IS APPLICABLE, UNDER ITEM 632 AND TC-82.10.

THIS WORK SHALL INCLUDE THE POURED EPOXY INSULATED SPLICE(S) REQUIRED TO CONNECT THE LOOP DETECTOR WIRE TO EXISTING LEAD-IN CABLE AT THE PULL BOX OR POLE. THE SPLICES SHALL BE IN ACCORDANCE WITH SECTION 725.15 OF THE CMS. PAYMENT SHALL BE MADE PER EACH LOOP DETECTOR CONNECTED TO THE LEAD-IN CABLE.

SEE PLAN SHEETS NO. **76** THRU **79** FOR DETECTOR LOOP LOCATIONS. A DETECTOR CHART SHOWING DIMENSIONS IS SHOWN ON SHEET NO. **78**.

PAYMENT FOR ALL THE ABOVE SHALL BE INCLUDED IN THE UNIT PRICE BID PER EACH OF ITEM 632 DETECTOR LOOP, AS PER PLAN.

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY TO BE USED AS DIRECTED BY THE ENGINEER.

ITEM 632 DETECTOR LOOP, AS PER PLAN **13** EACH

CALC BY
CHKD BY RJR 5/07

TRAFFIC SIGNAL GENERAL NOTES

WAY-21-5.74

TRAFFIC SIGNAL SUB SUMMARY

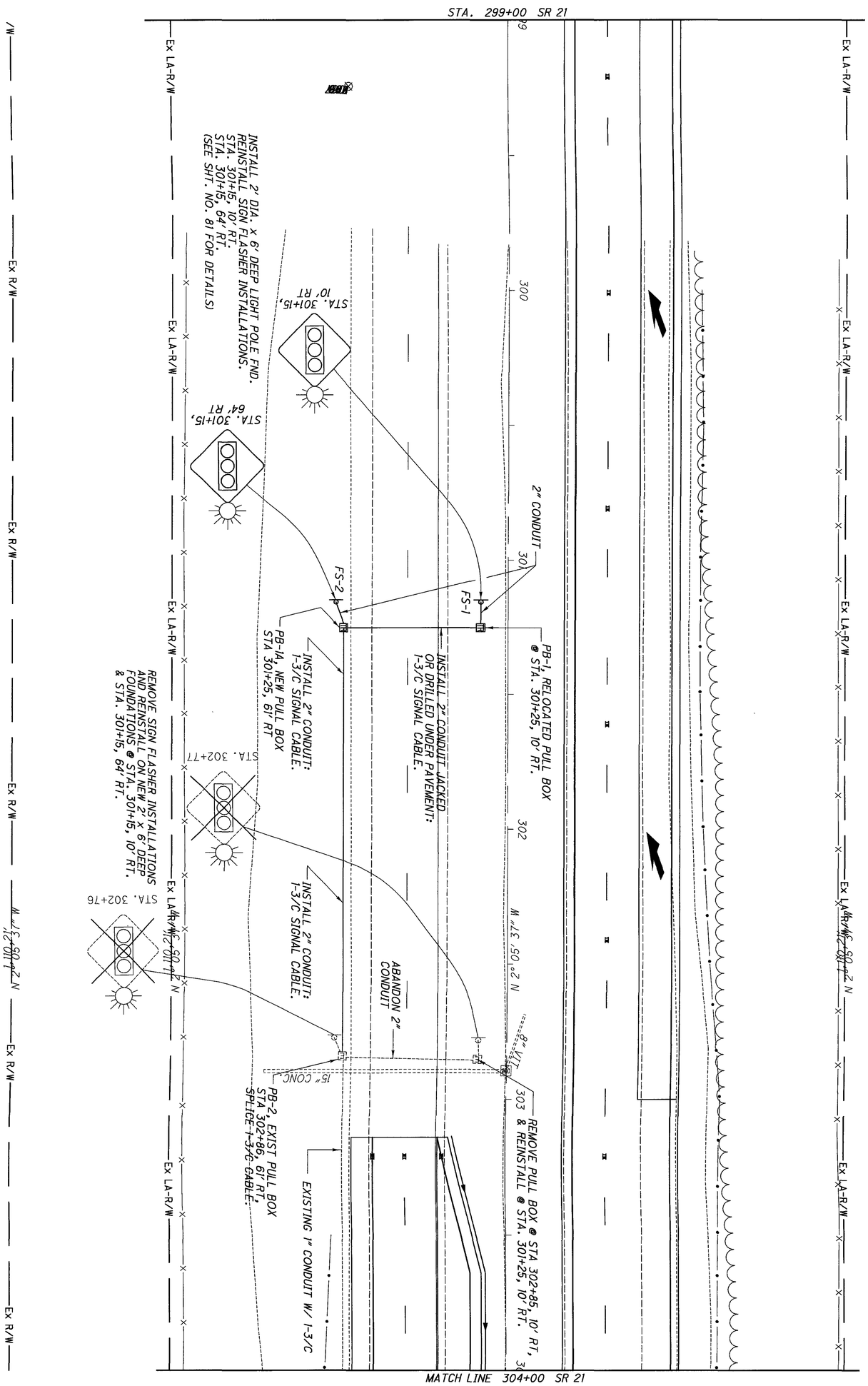
ITEM	ITEM EXT.	TOTAL QUANTITY	UNITS	DESCRIPTION
603	00400	50	FT	4" CONDUIT, TYPE E
625	00600	3	EACH	CONNECTOR KIT, TYPE III
625	01200	6	EACH	CONNECTOR KIT, TYPE VIII, CU
625	14001	3	EACH	LIGHT POLE FOUNDATION, 24" X 6' DEEP, AS PER PLAN
625	25402	282	FT	CONDUIT, 2", 725.05
625	25900	106	FT	CONDUIT JACKED OR DRILLED UNDER PAVEMENT, 2"
625	29001	282	FT	TRENCH, AS PER PLAN
625	30701	2	EACH	PULL BOX, 725.08, 18", AS PER PLAN
625	31600	4	EACH	PULL BOX, MISC.: PULL BOX ADJUSTED TO GRADE, AS PER PLAN
625	31600	4	EACH	PULL BOX, MISC.: PULL BOX REMOVED AND REINSTALLED, AS PER PLAN
625	32001	3	EACH	GROUND ROD, AS PER PLAN
630	79001	2	EACH	SIGN HANGER ASSEMBLY, SPAN WIRE, AS PER PLAN
630	80100	10	SQ FT	SIGN, FLAT SHEET
630	87400	3	EACH	REMOVAL OF OVERHEAD MOUNTED SIGN AND DISPOSAL
632	00301	9	EACH	VEHICULAR SIGNAL HEAD, 3 SECTION, 12" LENS, 1-WAY, AS PER PLAN
632	00501	2	EACH	VEHICULAR SIGNAL HEAD, 5 SECTION, 12" LENS, 1-WAY, AS PER PLAN
632	25001	11	EACH	COVERING OF VEHICULAR SIGNAL HEAD, AS PER PLAN
632	26500	6	EACH	DETECTOR LOOP
632	26501	13	EACH	DETECTOR LOOP, AS PER PLAN
632	27009	1	EACH	LOOP DETECTOR UNIT, DELAY AND EXTENSION TYPE, AS PER PLAN
632	27201	6	EACH	LOOP DETECTOR TIE IN, AS PER PLAN
632	40300	339	FT	SIGNAL CABLE, 3 CONDUCTOR, NO. 14 AWG
632	40500	90	FT	SIGNAL CABLE, 5 CONDUCTOR, NO. 14 AWG
632	65300	27	FT	LOOP DETECTOR LEAD-IN CABLE, 2 CONDUCTOR, NO. 14 AWG
632	90020	11	EACH	REMOVAL OF MISCELLANEOUS TRAFFIC SIGNAL ITEM: VEHICULAR SIGNAL SIGNAL HEAD
632	90400	3	EACH	SIGNALIZATION, MISC.: REMOVAL AND REINSTALLATION OF SIGN FLASHER INSTALLATION, AS PER PLAN
632	90500	407	FT	SIGNALIZATION, MISC.: REMOVE AND REINSTALL CABLE, AS PER PLAN
632	90500	70	FT	SIGNALIZATION, MISC.: REMOVE AND REINSTALL LASHING RODS
633	99000	1	EACH	CONTROLLER ITEM, MISC.: MODIFICATION OF CONTROLLER CABINET

CALC BY
CHKD BY RJR 5/07

TRAFFIC SIGNAL SUB SUMMARY

WAY-21-5.74

DESIGN FILE: I:\projects\81797\Signal\81797CP001.dgn
WORKSTATION: rroney DATE: 6/1/2007



WAY-21-5.74

TRAFFIC SIGNAL PLAN
STA 299+00 TO STA 304+00

CALCULATED SJD
CHECKED BAD

0 20
10 40
HORIZONTAL SCALE IN FEET

N

DESIGN FILE: I:\projects\81797\Signal\81797CP002.dgn
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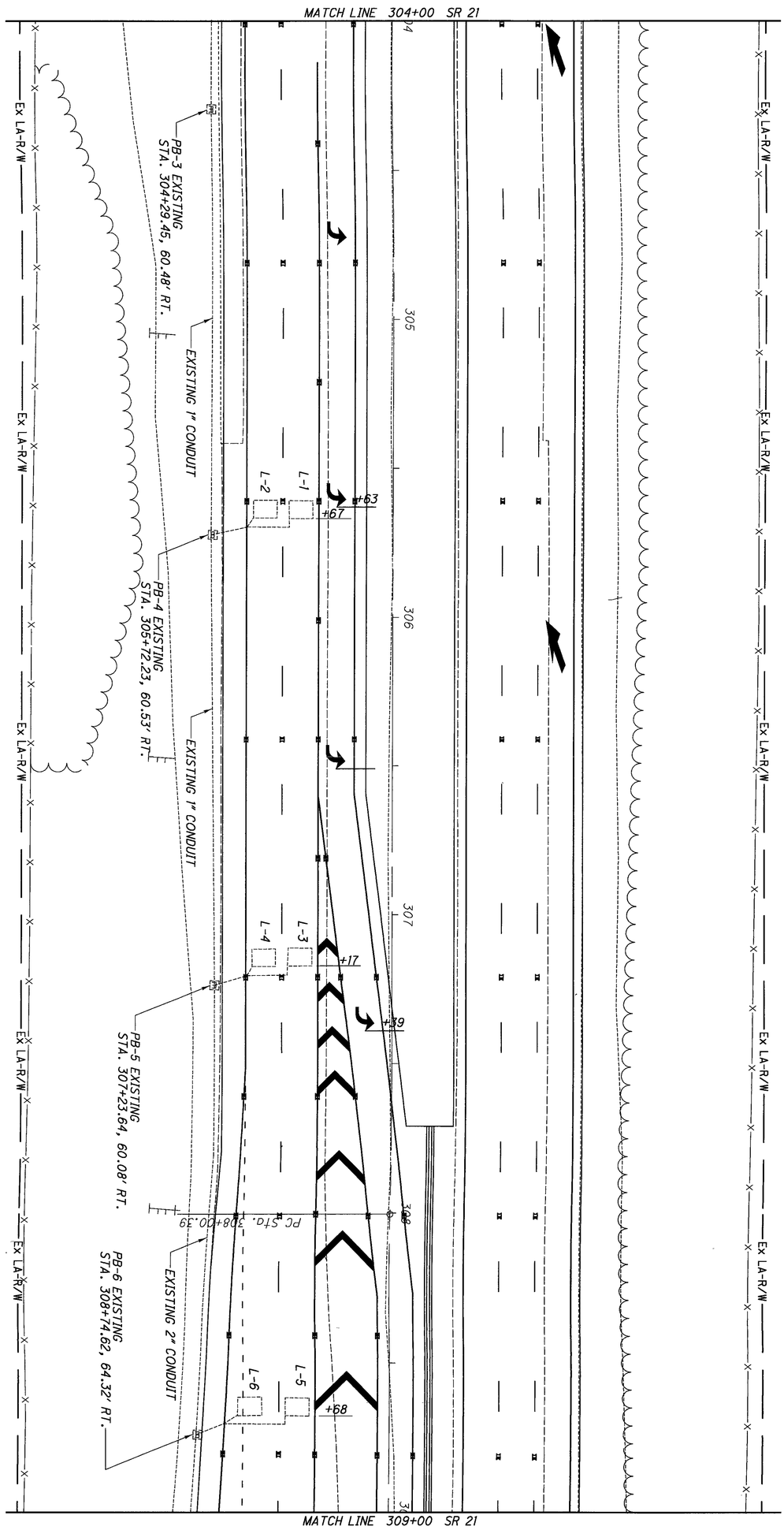


77/83	WAY-21-5.74	TRAFFIC SIGNAL PLAN STA 304+00 TO STA 309+00	CALCULATED SJD CHECKED BAD	0 20 10 40 HORIZONTAL SCALE IN FEET

INSTALL NEW 2" CONDUIT JACKED OR DRILLED UNDER PAVEMENT. REROUTE ALL EXISTING CABLES FROM ABANDONED CONDUIT THRU NEW CONDUIT AS REQUIRED.

PB-12 EXISTING CONC. @ STA 49+15, 26' RT, RELOCATED TO STA. 49+04, 26' RT (LOOP TIE-IN QTY=1)

ABANDON EXISTING 2" CONDUIT (CONNECT TO NEW 2" CONDUIT NEAR CONTROLLER)

INSTALL 2" CONDUIT, CONNECT TO ABANDONED 2" CONDUIT AT CONTROLLER FOUNDATION. REROUTE ALL EXISTING CABLE THROUGH NEW CONDUIT AND INSTALL NEW 1-2/C LEAD-IN FOR LOOP L-16A.

EXISTING 8-PHASE CONTROLLER AND CABINET ON CONCRETE FND.
EXISTING SIGN FLASHER CONTROLLER INSIDE SIGNAL CONTROLLER CABINET.
EXIST CONCRETE WORKPAD. STA 311+50, 94.62' LT

EXISTING BATTERY BACKUP W/ ENCLOSURE GROUND MOUNTED WITH CONCRETE WORKPAD.
EXISTING 2" CONDUIT: 2-2/C POWER

P-1 EXISTING
DESIGN 10, 32'
STA. 311+25.8, 82.6' LT.

PB-11 EXISTING
STA. 311+32, 88' LT.

EXISTING 3" & 2" CONDUIT

EXISTING 2" CONDUIT

PB-10 EXISTING
STA. 311+06.15, 74.00' LT.
(INSTALL LOOP TIE-IN, QTY = 1)

EXISTING 2" CONDUIT: REMOVE 1-2/C LEAD-IN FOR LOOP L-17 AND REROUTE TO PB-10.

EXISTING 2" CONDUIT

PB-7 EXISTING
STA. 310+93.90, 69.42' RT.

ABANDON 2" CONDUIT

INSTALL 2" CONDUIT AND REROUTE LEAD-IN CABLES FOR LOOPS L-14 AND L-15.

P-2 EXISTING
DESIGN 10, 32'
STA. 311+22.4, 83.8' RT.

PB-8 EXISTING
RELOCATED TO
STA. 50+84, 34' RT.
(LOOP TIE-IN QTY=2)

P.I. STA. 309+89.71
D = 2° 50' 21" (RT)
Dc = 0° 45' 00"
R = 7,639.44'
T = 189.32'
L = 378.57'
E = 2.35'

INSTALL NEW PB-12A
STA. 49+04, 29' LT.

INSTALL 2" CONDUIT

P-3 EXISTING
DESIGN 10, 32'
STA. 0+53.0, 82.8' LT.

PB-9 EXISTING
STA. 0+56.68, 71.62' LT.
(LOOP TIE-IN QTY=1)

ABANDON EX. 2"C

EX. 2" CONDUIT

PB-15 EXISTING
STA. 2+93.38, 77.09' LT.

PB-14 EXISTING
STA. 1+63.22, 72.92' LT.

EX. 2" CONDUIT

EX. 2" CONDUIT

P-4 EXISTING
DESIGN 10, 32'
STA. 0+64.7, 99.5' RT.

EQUATION: Sta 311+78.96 BK = Sta 0+00.00 AH

STA 48+65

STA 51+40

SEE SHEET NO. 80 FOR OVERHEAD SPAN DETAIL. (1)(2)(3)(4)(5)(6)(7)(8)(9)(10)(11) (10)(11) (S-1)(S-2)(S-3) (S-2)(S-2)

SEE SHEET NO. 80 FOR MISC. SIGNAL DETAILS.

SEE SHEET NO. 75 FOR GENERAL SUMMARY AND GENERAL NOTES.

DETECTOR CHART

LOOP	SIZE (FT.)	NO. OF TURNS	MODE	DELAY (SEC.)	CONNECT TO DETECTOR UNIT NO.	ASSOCIATED CONTROLLER PHASE	DESCRIPTION
L-1 & L-2	6X8	3	PULSE		1	1	EXISTING *
L-3 & L-4	6X8	3	PULSE		1	1	EXISTING *
L-5 & L-6	6X8	3	PULSE		2	1	EXISTING *
L-7, L-8 & L-9	6X8	3	PULSE		3	1	EXISTING *
L-10 & L-11	6X8	3	PULSE		4	1	EXISTING *
L-12 & L-13	6X8	3	PULSE		4	1	EXISTING *
L-14	8X30	2	PRESENCE	8 **	5	2	NEW ***
L-15	6X15	2	PRESENCE	8 **	6	2	NEW ***
L-16	8X30	2	PRESENCE	8 **	6	2	NEW ***
L-16A	6X15	2	PRESENCE	8 **	9 (NEW)	2	NEW ***
L-17	6X30	3	PRESENCE	5 **	7	5	NEW ***
L-18	6X30	3	PRESENCE	5 **	8	1	NEW ***

* REPLACE ONLY IF DAMAGED BY PAVEMENT PLANING OR CONSTRUCTION OPERATIONS.
** DELAY INHIBIT DURING ASSOCIATED PHASE GREEN INTERVAL
*** NEW LOOPS SHALL BE CUT IN THE PLANED SURFACE OR INTERMEDIATE ASPHALT COURSE.

HORIZONTAL SCALE IN FEET 0 10 20 40

CALCULATED ___ CHECKED ___

TRAFFIC SIGNAL PLAN
STA 309+00 TO STA 3+00

WAY-21-5.74

78/83

DESIGN FILE: I:\projects\81797\Signal\81797CP003.dgn
WORKSTATION: rroney DATE: 6/1/2007

EXISTING 1" CONDUIT

TO EXISTING SIGN FLASHERS ON RAMP

36" CONC.

EXISTING 2" CONDUIT

STA 3+50

EXISTING 2" CONDUIT

PB-20 EXISTING
STA 4+38, 62.76' LT

EXISTING 2" CONDUIT

PB-21 EXIST 18" CONC
STA 5+87, 62.5' LT

EXISTING 1" CONDUIT

PB-22 EXIST 18" CONC
STA 7+69, 62.5' LT

EXISTING 1" CONDUIT

EXISTING 1" CONDUIT

FS-3

STA. 7+80
(NO WORK)

EXISTING 2" CONDUIT, REMOVE
AND REINSTALL 1-3/C CABLE

L-11

L-10

L-13

L-12

+14

+89

+02

+90

STA. 8+00 SR 21

MATCH LINE 3+00 SR 21

+38

+42

+26

4

5

7

FS-3

CB, RECONSTRUCTED TO GRADE

RELOCATE CONC. PULL BOX STA. 7+69,
11' LT. TO STA. 7+69, 6' LT. EXTEND
2" CONDUIT & REROUTE EXIST 1-3/C
SIGNAL CABLE BACK TO FS-4.

INSTALL 2" CONDUIT: REROUTE
EXIST 1-3/C SIGNAL CABLE.

STA. 7+80,
3' LT

STA. 7+79
(REMOVE AND REISTALL
AS SHOWN)

INSTALL 2' DIA. x 6' DEEP LIGHT POLE FND. REINSTAEL
SIGN FLASHER INSTALLATION. @ STA. 7+80, 3' LT.
(SEE SHEET NO. 81 FOR DETAILS)

12"
WHITEPINE"

24"
BIRCH"

Ex LA-R/W

Ex LA-R/W

Ex LA-R/W

Ex

P.I. STA. 5+33.12
D = 7° 59' 02" (RT)
Dc = 0° 45' 00"
R = 7,639.44'
T = 533.12'
L = 1,064.50'
E = 18.58'

HORIZONTAL SCALE IN FEET
0 10 20 40

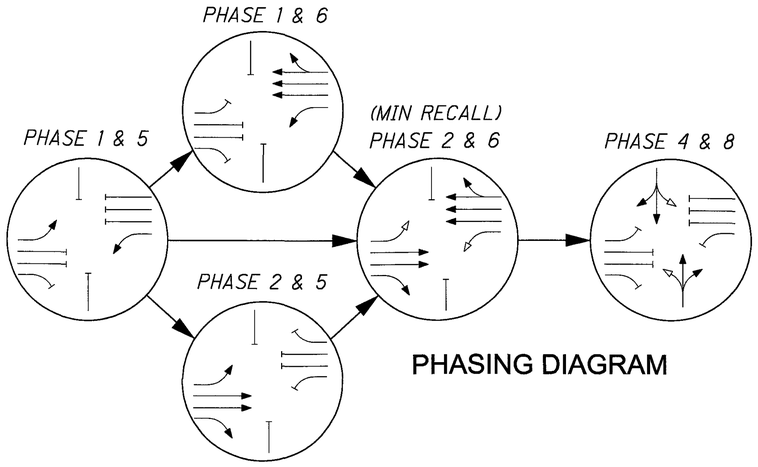
CALCULATED SJD
CHECKED BAD

TRAFFIC SIGNAL PLAN
STA 3+00 TO STA 8+00

WAY-21-5.74

79
83

DESIGN FILE: I:\projects\81797\Signal\81797CP004.dgn
WORKSTATION: rroney DATE: 6/1/2007



PHASING DIAGRAM

PHASING IDENTIFICATION

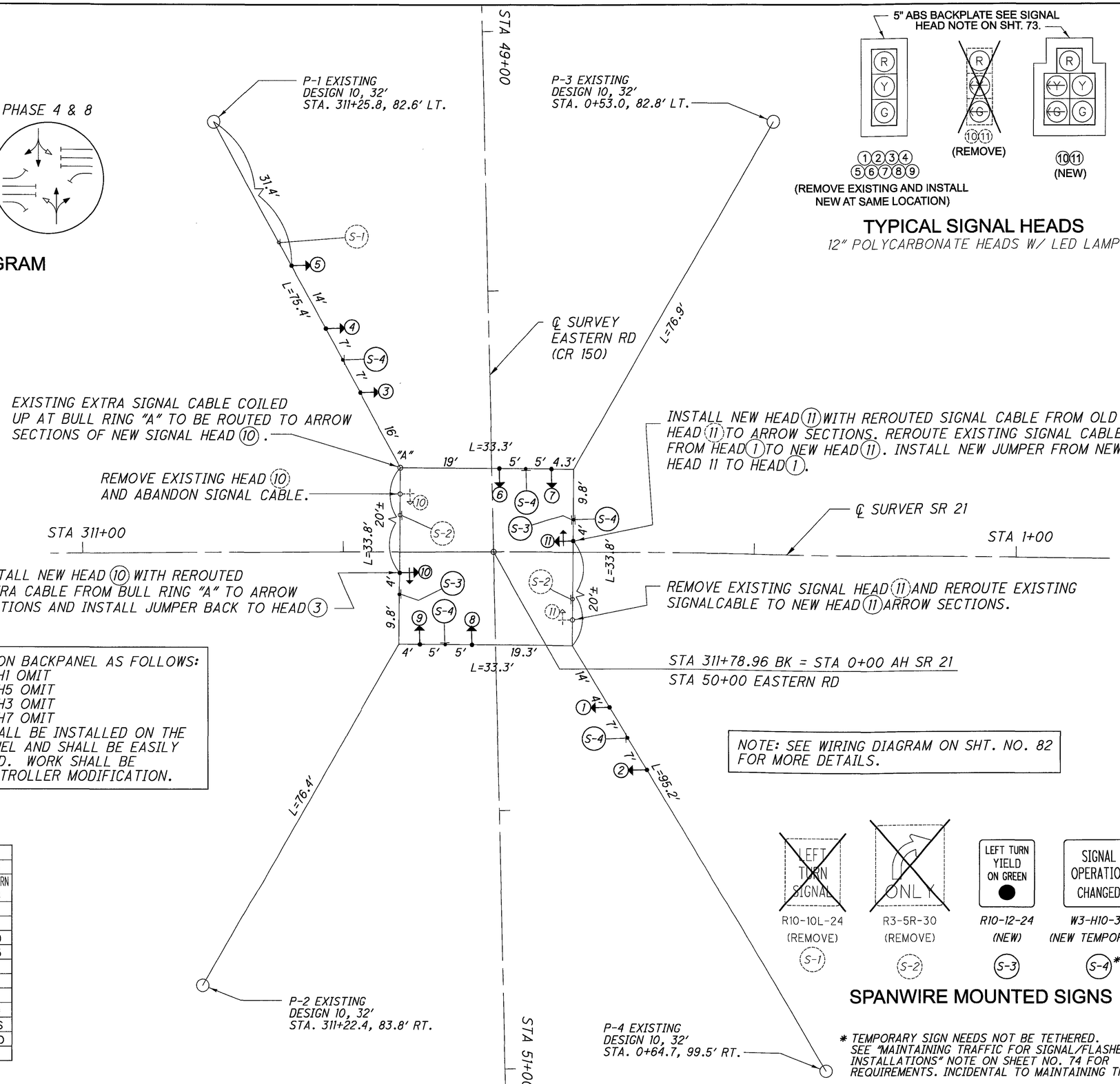
PHASE 1	PHASE 2	FUTURE USE PHASE 3	PHASE 4
PHASE 5	PHASE 6	FUTURE USE PHASE 7	PHASE 8

SIGNAL INDICATION CHART

PHASE	SIGNAL HEAD										
	1	2	3	4	5	6	7	8	9	10	11
2 & 5	G	G	R	R	R	R	R	R	R	R	~~G~~
	Y	Y	R	R	R	R	R	R	R	R	~~Y~~
	R	R	R	R	R	R	R	R	R	R	R
1 & 6	R	R	G	G	G	R	R	R	R	~~G~~	R
	R	R	Y	Y	Y	R	R	R	R	~~Y~~	R
	R	R	R	R	R	R	R	R	R	R	R
2 & 6	G	G	G	G	G	R	R	R	R	G	G
	Y	Y	Y	Y	Y	R	R	R	R	Y	Y
	R	R	R	R	R	R	R	R	R	R	R
4 & 8	R	R	R	R	R	G	G	G	G	R	R
	R	R	R	R	R	Y	Y	Y	Y	R	R
	R	R	R	R	R	R	R	R	R	R	R
FLASH	Y	Y	Y	Y	Y	R	R	R	R	R	R

TIMING CHART

INTERVAL	PHASE 1 SR 21 SB LT	PHASE 2 SR 21 NB	PHASE 3 FUTURE USE	PHASE 4 EASTERN EB	PHASE 5 SR 21 NB LT	PHASE 6 SR 21 SB	PHASE 7 FUTURE USE	PHASE 8 EASTERN WB
MINIMUM GREEN	6	20		8	6	20		8
PASSAGE	2.5	3		3	2.5	3		3
YELLOW	3.0	5.4		3.0	3.0	5.4		3.0
ALL RED	3.4	1.6		2.5	3.4	1.6		2.5
MAXIMUM GREEN	20	60		20	20	60		20
ADDED INITIAL		1.0				1.0		
MAX. INITIAL		25				25		
MIN. RECALL	NO	YES		NO	NO	YES		NO
DET. NON-LOCK	YES	NO		YES	YES	NO		YES
INITIALIZATION	RED	GRN		RED	RED	GRN		RED



INSTALL JUMPERS ON BACKPANEL AS FOLLOWS:
PH2 ON TO PH1 OMIT
PH6 ON TO PH5 OMIT
PH4 ON TO PH3 OMIT
PH8 ON TO PH7 OMIT
THESE JUMPERS SHALL BE INSTALLED ON THE FRONT OF THE PANEL AND SHALL BE EASILY REMOVED IF NEEDED. WORK SHALL BE INCIDENTAL TO CONTROLLER MODIFICATION.

NOTE: SEE WIRING DIAGRAM ON SHT. NO. 82 FOR MORE DETAILS.

TYPICAL SIGNAL HEADS

12" POLYCARBONATE HEADS W/ LED LAMPS

SPANWIRE MOUNTED SIGNS

* TEMPORARY SIGN NEEDS NOT BE TETHERED. SEE "MAINTAINING TRAFFIC FOR SIGNAL/FLASHER INSTALLATIONS" NOTE ON SHEET NO. 74 FOR REQUIREMENTS. INCIDENTAL TO MAINTAINING TRAFFIC.

HORIZONTAL SCALE IN FEET 0 5 10 20

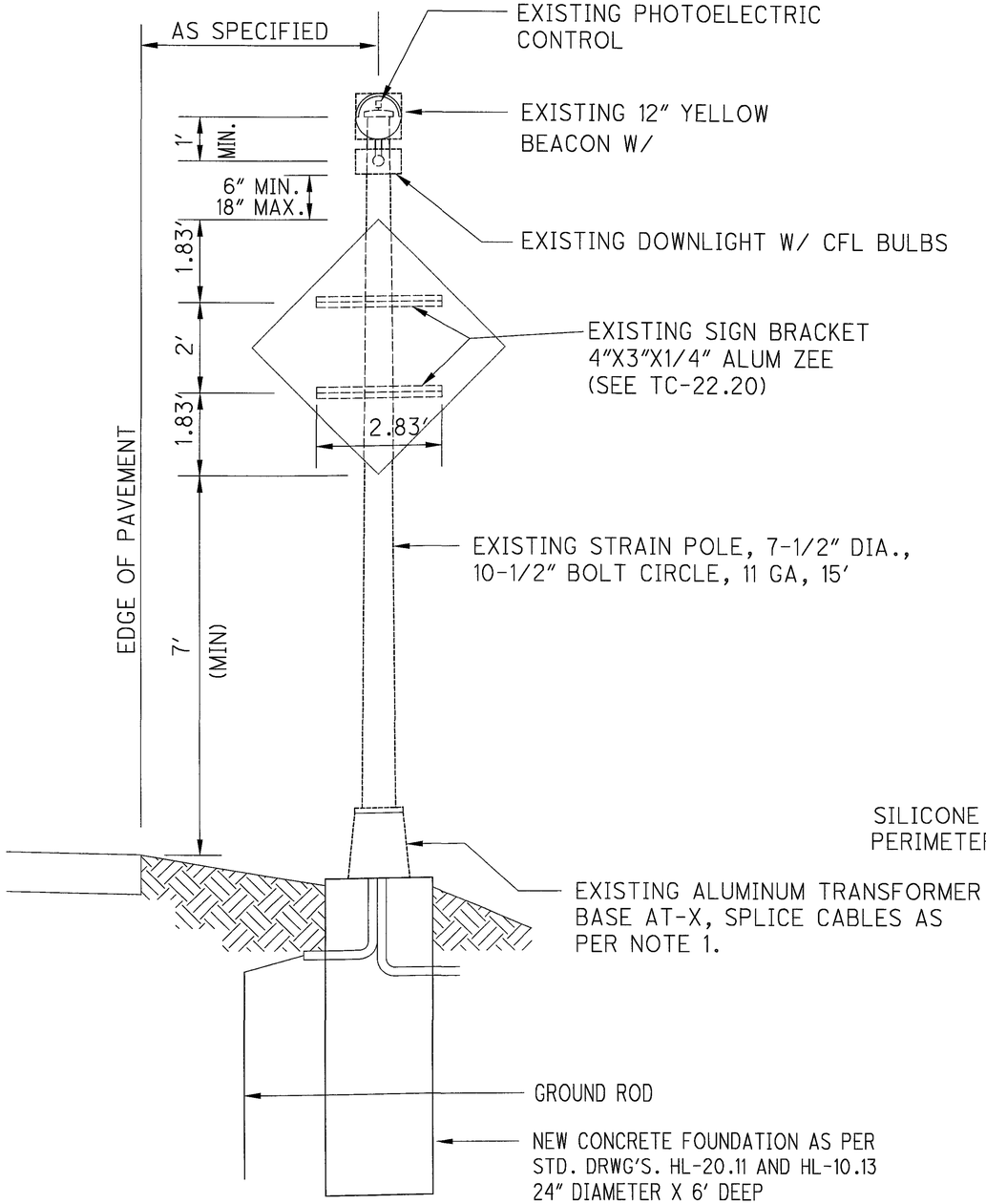
CALCULATED ___ CHECKED ___

TRAFFIC SIGNAL MISC. DETAILS

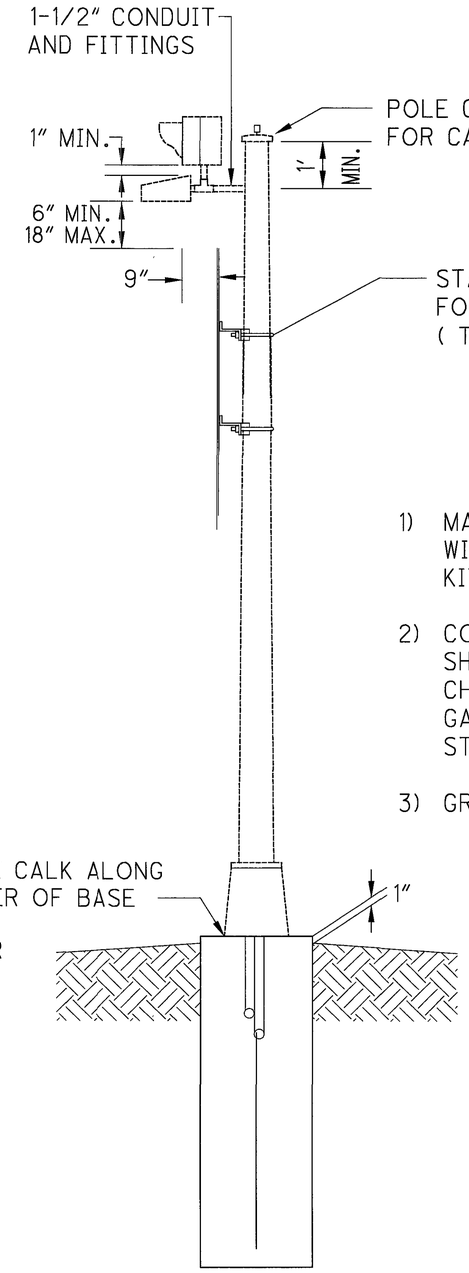
WAY-21-5.74

80 / 83

DESIGN FILE: I:\projects\81797\Signal\SIGNAL DETAILS.dgn
WORKSTATION: rroney DATE: 5/31/2007



FRONT VIEW



SIDE VIEW

NOTES

1) MAKE ELECTRICAL CONNECTIONS INSIDE AT-X BASE WITH 15 AMP FUSED 725.15 TYPE VIII CONNECTOR KITS IN LINE. NEUTRAL UNFUSED TYPE III.

2) CONTACT BETWEEN ALUMINUM AND GALVANIZED PARTS SHALL BE PREVENTED WITH A MINIMUM 1/16" THICK CHLOROPRENE GASKET OR APPROVED SUBSTITUTE. GASKETS ARE NOT REQUIRED BETWEEN STAINLESS STEEL AND ALUMINUM.

3) GROUND ALL SPARE CONDUCTORS AT CONTROLLER ONLY.

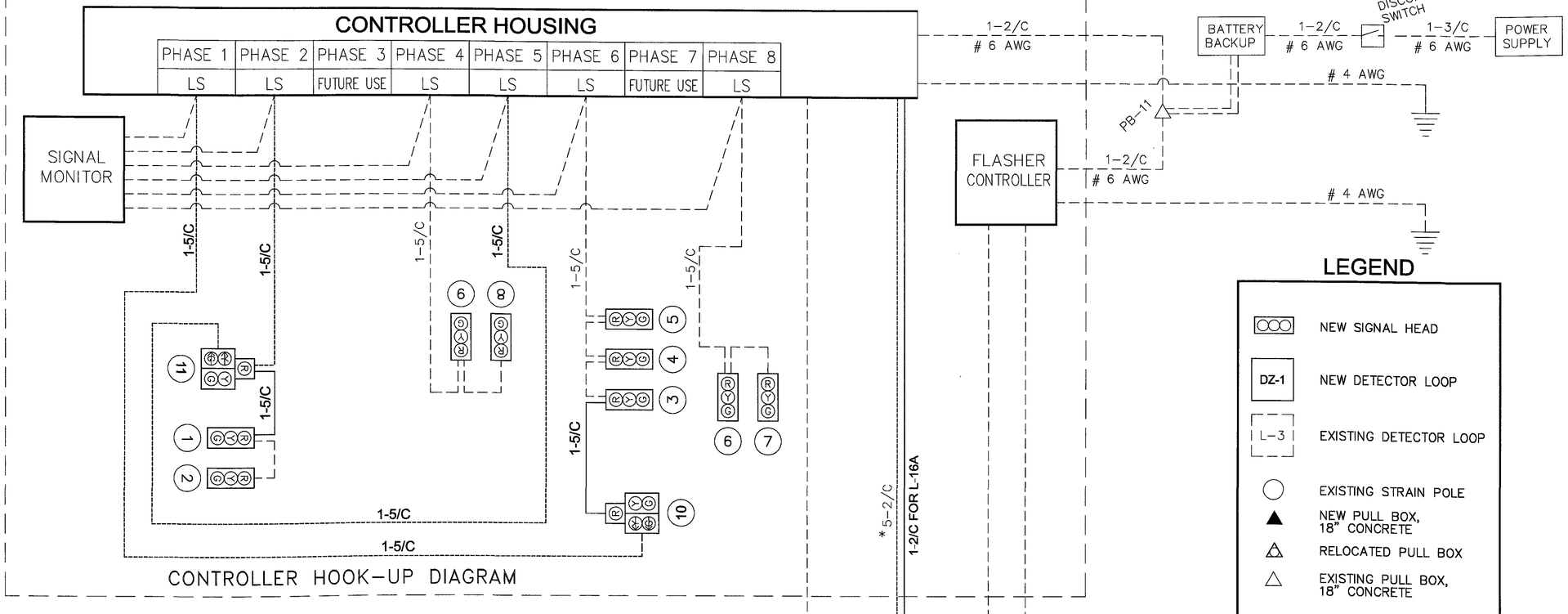
CALCULATED | CHECKED

TRAFFIC CONTROL
SIGN FLASHER DETAIL

WAY-21-5.74

81/83

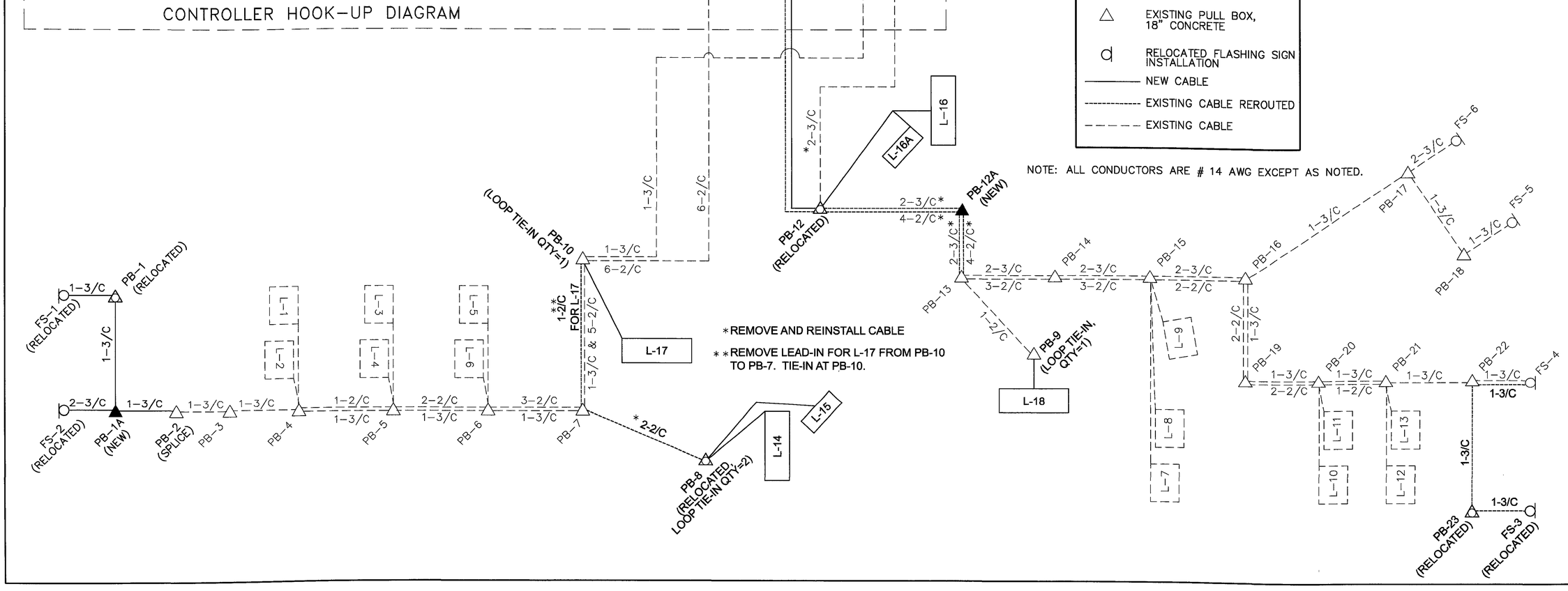
DESIGN FILE: I:\Projects\81797\Signal\Sign Flasher Detail.dgn
WORKSTATION: rroney DATE: 5/31/2007



LEGEND

- NEW SIGNAL HEAD
- DZ-1 — NEW DETECTOR LOOP
- L-3 — EXISTING DETECTOR LOOP
- EXISTING STRAIN POLE
- NEW PULL BOX, 18" CONCRETE
- RELOCATED PULL BOX
- EXISTING PULL BOX, 18" CONCRETE
- RELOCATED FLASHING SIGN INSTALLATION
- NEW CABLE
- EXISTING CABLE REROUTED
- EXISTING CABLE

NOTE: ALL CONDUCTORS ARE # 14 AWG EXCEPT AS NOTED.



*REMOVE AND REINSTALL CABLE

**REMOVE LEAD-IN FOR L-17 FROM PB-10 TO PB-7. TIE-IN AT PB-10.

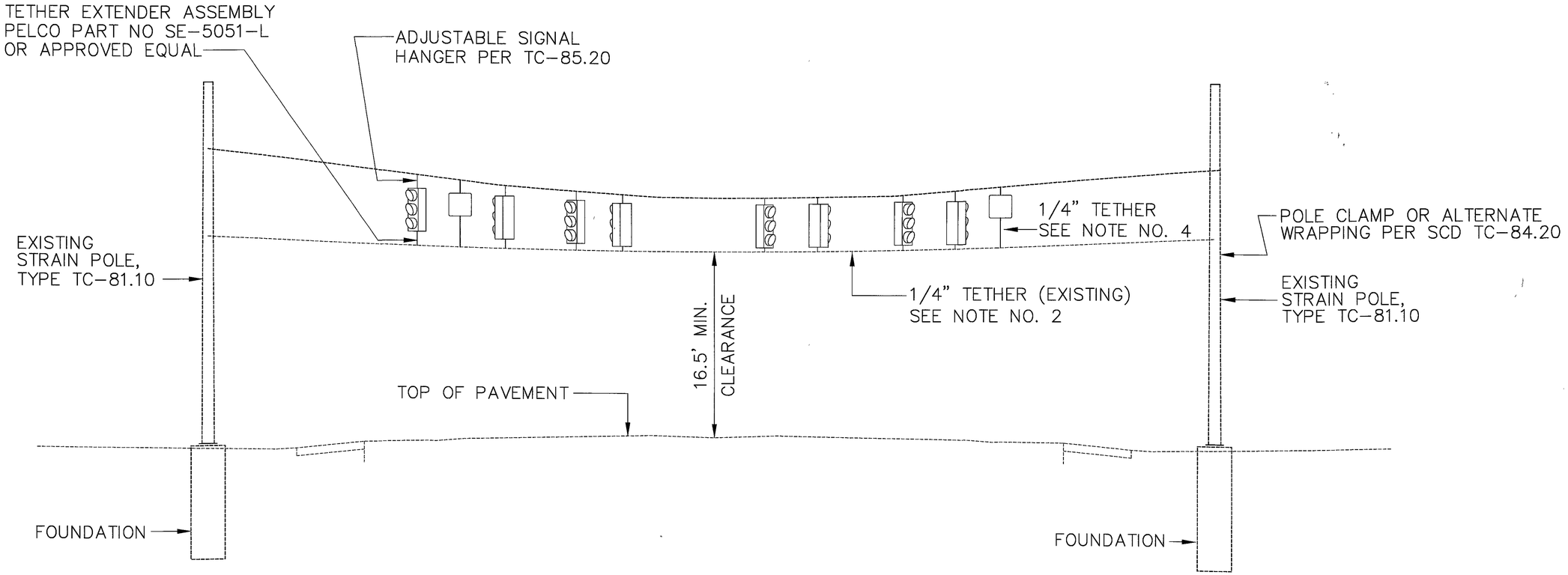
CALCULATED ___ CHECKED ___

TRAFFIC SIGNAL WIRING DIAGRAM

WAY-21-5.74

82
83

DESIGN FILE: I:\projects\81797\Signal\SIGNAL DETAILS.dgn
WORKSTATION: rroney
DATE: 5/31/2007



TETHER WIRE
TYPICAL ELEVATION VIEW

NOTES:

1) EXISTING TETHER WIRE SHALL REMAIN WITH SLIGHT SAG (MAXIMUM 1%). DO NOT ABRUPTLY RAISE OR LOWER TETHER AT ATTACHMENT POINTS. USE TETHER EXTENDERS TO FILL GAPS BETWEEN TETHER WIRE AND BOTTOM OF SIGNAL HEADS. SEE NOTE NO. 2 BELOW.

2) SIGNAL HEAD ATTACHMENT TO TETHER WIRE SHALL BE BREAK-A-WAY DESIGN. USE PELCO SINGLE-STUD BREAK-A-WAY TETHER ASSEMBLY PART NO. SE-5058, ADJUSTABLE BREAK-A-WAY TETHER ASSEMBLY PART NO. SE-5017-L, OR APPROVED EQUAL.

3) SPANWIRE MOUNTED SIGNS SHALL BE TETHERED BY SHORT LENGTH OF 1/4" MESSENGER THRU EYE BOLT ATTACHED TO BOTTOM OF SIGN.

4) ALL COSTS ASSOCIATED WITH CONNECTING NEW SIGNAL HEADS AND NEW SPANWIRE MOUNTED SIGNS TO THE EXISTING TETHER WIRE SHALL BE INCLUDED WITH ITEM 632, SIGNAL HEAD, BY TYPE, AS PER PLAN.

REVISED: 5-29-07

DESIGN FILE: I:\projects\81797\Signal\TETHER DETAIL.dgn
WORKSTATION: rroney DATE: 5/31/2007

TETHER WIRE DETAIL

WAY-21-5.74

83
83