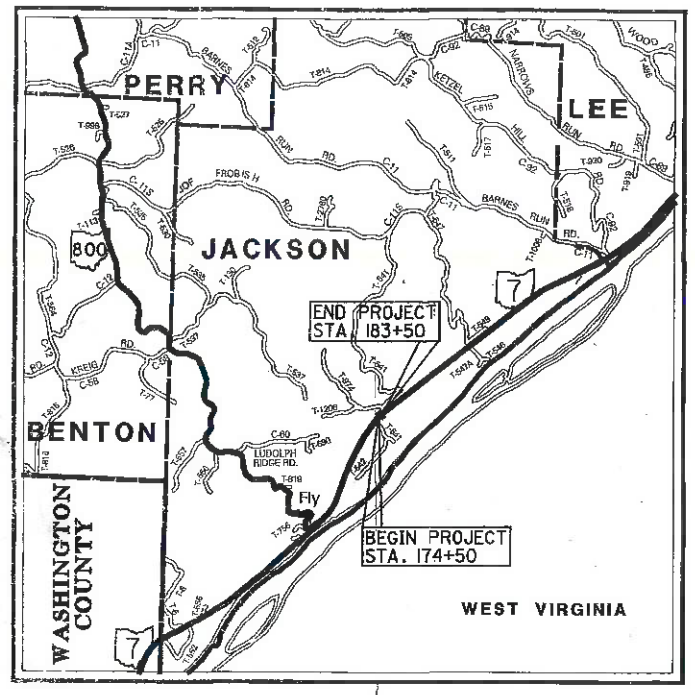

LOCATION MAP

LATITUDE: 39°34'56" LONGITUDE: 80°59'40"

SCALE IN MILES

0 1 2 3 4

N

PORTION TO BE IMPROVED
INTERSTATE & DIVIDED HIGHWAY
UNDIVIDED STATE & FEDERAL ROUTES
OTHER ROADS

DESIGN DESIGNATION

CURRENT ADT (2005)	6800
DESIGN YEAR ADT (2025)	9300
DESIGN HOURLY VOLUME (2025)	930
DIRECTIONAL DISTRIBUTION	0.55
TRUCKS (24 HOUR B&C)	9%
DESIGN SPEED	55 mph
LEGAL SPEED	55 mph

DESIGN FUNCTIONAL CLASSIFICATION - RURAL ARTERIAL

DESIGN EXCEPTIONS

NONE REQUIRED

UNDERGROUND UTILITIES
TWO WORKING DAYS
BEFORE YOU DIG
CALL 1-800-362-2764 (TOLL FREE)
OHIO UTILITIES PROTECTION SERVICE
NON-MEMBERS
MUST BE CALLED DIRECTLY
OHIO OIL & GAS PRODUCERS UNDERGROUND PROTECTION SERVICE: 1-800-925-0988

PLAN PREPARED BY:
OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 10

ENGINEER'S SEAL:
MOE-7-3.30
STATE OF OHIO · ALAN L. CRAIG · 76-61554 · REGISTERED PROFESSIONAL ENGINEER
SIGNED: Alan L Craig
DATE: 6-1-06

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
MOE - 7 - 3.30
PART 1
JACKSON TOWNSHIP
MONROE COUNTY
FOR PART 2, SEE MOE-7-4.32

INDEX OF SHEETS:

PRODUCTION 162

PARTS 1 & 2

STANDARD CONSTRUCTION DRAWINGS

BP-3.1	7-16-04	TC-41.20	1-19-01	DBR-2-73	7-19-02
BP-4.1	7-16-04	TC-42.20	7-16-04	DS-1-92	7-18-03
GR-1.1	7-16-04	TC-52.10	4-20-01	PCB-91	7-19-02
GR-2.1	1-16-04	TC-52.20	4-20-01	TST-1-99	10-17-03
GR-2.2	1-20-06	TC-65.10	1-21-05		
GR-3.4	1-20-06	TC-71.10	1-21-05		
GR-4.2	4-15-05	TC-73.10	1-19-01		
GR-5.3	1-16-04	MT-96.11	4-19-02		
RM-4.2	4-18-03	MT-96.20	4-19-02		
CB-1.1	7-15-05	MT-96.21	4-19-02		
CB-3.3	7-15-06	MT-96.25	4-19-02		
HW-2.1	4-21-06	MT-97.10	4-19-02		
HW-2.2	4-21-06	MT-101.20	10-18-02		
DM-1.1	4-21-06	MT-101.70	10-18-02		
DM-1.4	4-21-06	MT-105.10	10-18-02		
		MT-105.11	10-18-02		

SUPPLEMENTAL SPECIFICATIONS

800	7-21-06
802	4-15-05
832	4-25-06

SPECIAL PROVISIONS

WATERWAY PERMITS 5-30-06 NWP#3

PROJECT DESCRIPTION

REPLACE A BRIDGE OVER MILLER'S RUN WITH A TWO CELL, PRECAST BOX CULVERT AND RESURFACE 0.17 MILES OF SR 7 TO CORRECT THE HORIZONTAL CURVE SUPERELEVATION.

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.

TEMPORARY SEDIMENT & EROSION CONTROL DATA (PARTS 1 & 2)
PROJECT EDA: 0.89 ACRES
CONTRACTOR EDA: 0.65 ACRES
TOTAL EDA: 1.54 ACRES
NOI EDA: 4.9 ACRES

RECEIVED
AUG 14 2006
OHIO DEPT. OF TRANS.
DIST. 10 PRODUCTION

APPROVED Gregory Galbraith
DATE 6-1-06 DISTRICT DEPUTY DIRECTOR

APPROVED Gordon Proctor Jr.
DATE 7-5-06 DIRECTOR, DEPARTMENT OF TRANSPORTATION

FEDERAL PROJECT NO. E041(195)
PID NO. 25080
CONSTRUCTION PROJECT NO.
RAILROAD INVOLVEMENT NONE
MOE-7-3.30
1 / 39

MOE - SR 7-3.30/4.32 - Part 1 & 2
063400 PID - 25080
Dist 10 6/6/2006
01-JUN-2006 7:47AM ocraig
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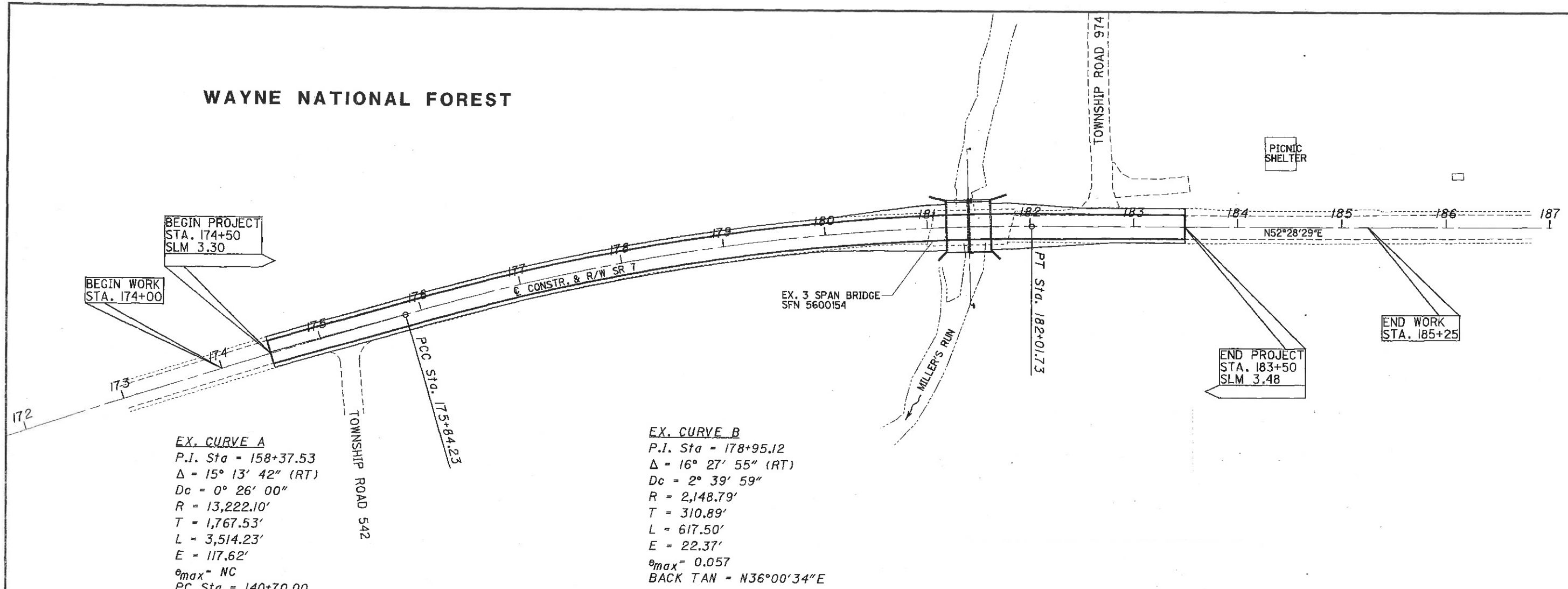

EX. CURVE A
P.I. Sta = 158+37.53
Δ = 15° 13′ 42″ (RT)
Dc = 0° 26′ 00″
R = 13,222.10′
T = 1,767.53′
L = 3,514.23′
E = 117.62′
e_{max} = NC
PC Sta = 140+70.00
BACK TAN = N20°46′52″E
AHEAD TAN = N36°00′34″E

EX. CURVE B
P.I. Sta = 178+95.12
Δ = 16° 27′ 55″ (RT)
Dc = 2° 39′ 59″
R = 2,148.79′
T = 310.89′
L = 617.50′
E = 22.37′
e_{max} = 0.057
BACK TAN = N36°00′34″E

HORIZONTAL SCALE IN FEET
0 25 50 100
CALCULATED
CHECKED

SCHEMATIC PLAN

MOE-7-3.30

2
39

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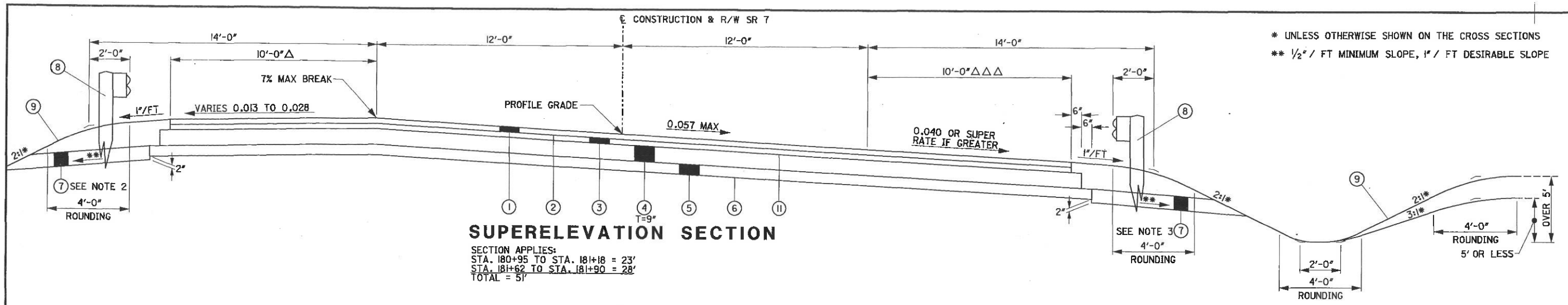
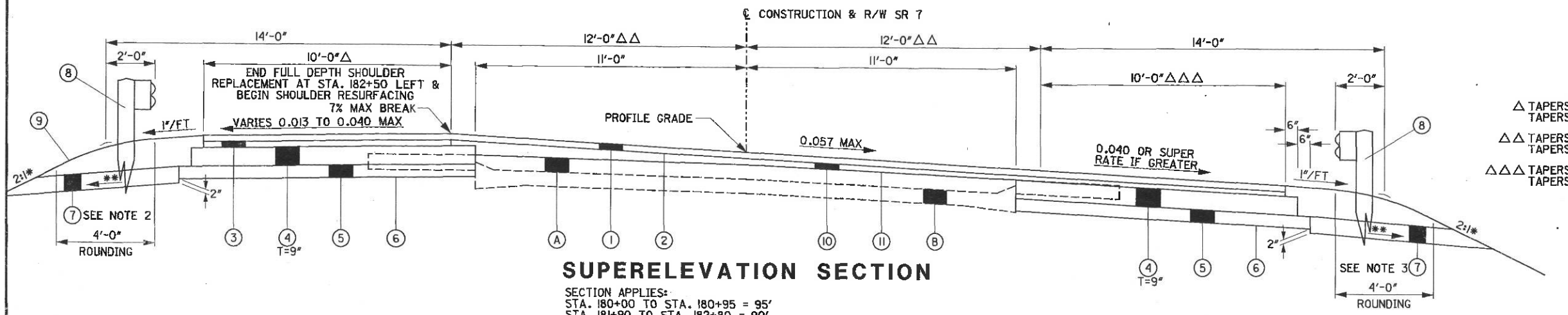


SUPERELEVATION SECTION

SECTION APPLIES:
STA. 180+95 TO STA. 181+18 = 23'
STA. 181+62 TO STA. 181+90 = 28'
TOTAL = 51'



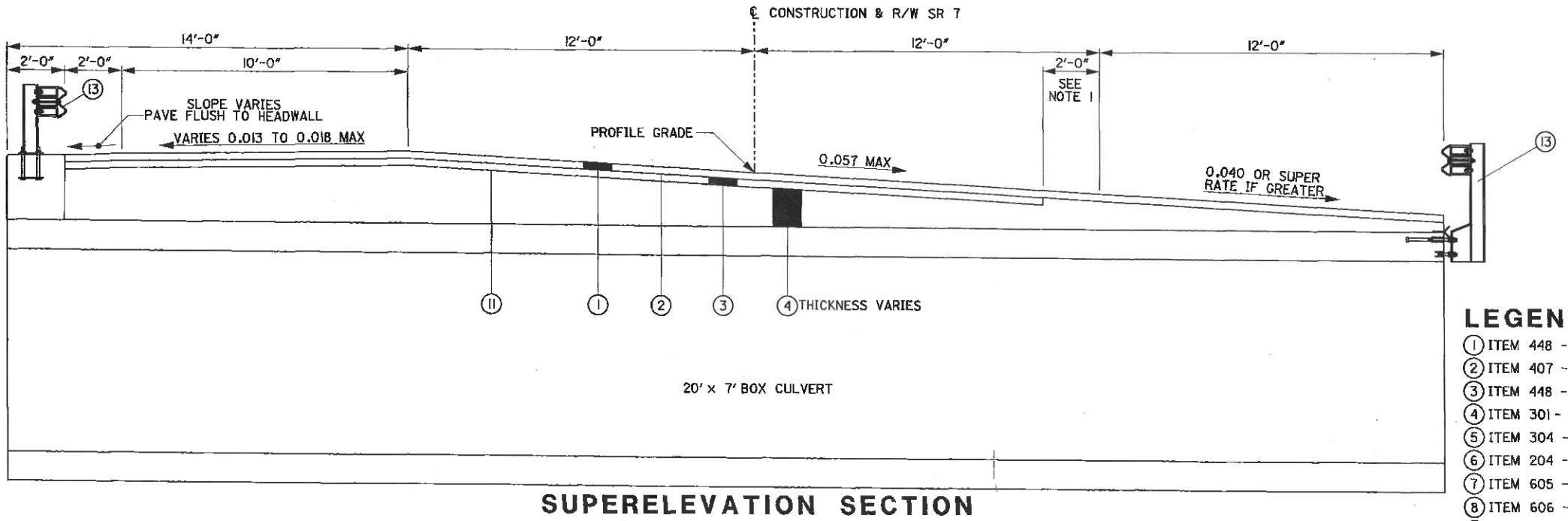
SUPERELEVATION SECTION

SECTION APPLIES:
STA. 180+00 TO STA. 180+95 = 95'
STA. 181+90 TO STA. 182+80 = 90'
TOTAL = 185'

△ TAPERS FROM 4'-0" AT 180+00 TO 10'-0" AT 181+00
TAPERS FORM 10'-0" AT 181+80 TO 6'-0" AT 182+50

△△ TAPERS FROM 11'-6" AT 180+00 TO 12'-0" AT 180+50
TAPERS FORM 12'-0" AT 182+30 TO 11'-6" AT 182+80

△△△ TAPERS FROM 4'-0" AT 180+00 TO 10'-0" AT 181+00
TAPERS FORM 10'-0" AT 181+80 TO 4'-0" AT 182+80



SUPERELEVATION SECTION

SECTION APPLIES:
STA. 181+18 TO STA. 181+62 = 44'
TOTAL = 44'

NOTE 1: FOR MAINTAINING TRAFFIC PURPOSES, END THE INTERMEDIATE ASPHALT LAYER AT 10' RIGHT AND PLACE ITEM 301 UP TO THE BOTTOM OF THE ASPHALT SURFACE COURSE.

NOTE 2: PLACE AT 50' INTERVALS AND AT THE SAG LOW POINT.

NOTE 3: PLACE AT 25' INTERVALS AND AT THE SAG LOW POINT.

LEGEND

(1) ITEM 448 - 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE 1H
(2) ITEM 407 - TACK COAT FOR INTERMEDIATE COURSE
(3) ITEM 448 - 1.75" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG64-28
(4) ITEM 301 - ASPHALT CONCRETE BASE, PG64-22, THICKNESS AS SHOWN
(5) ITEM 304 - 6" AGGREGATE BASE
(6) ITEM 204 - SUBGRADE COMPACTION
(7) ITEM 605 - AGGREGATE DRAIN
(8) ITEM 606 - GUARDRAIL, TYPE 5
(9) ITEM 659 - SEEDING & MULCHING
(10) ITEM 448 - VARIABLE THICKNESS ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG64-28
(11) ITEM 407 - TACK COAT
(12) ITEM 617 - COMPACTED AGGREGATE, AS PER PLAN (T=2" AVG.)
(13) ITEM 517 - RAILING (DEEP BEAM WITH 3 TUBULAR BACKUPS & STEEL POSTS)
(A) EXISTING ASPHALT CONCRETE, T=8"±
(B) EXISTING REINFORCED CONCRETE, T=7" (13" AT OUTER CURB EDGE)

* UNLESS OTHERWISE SHOWN ON THE CROSS SECTIONS
** ½" / FT MINIMUM SLOPE, 1" / FT DESIRABLE SLOPE

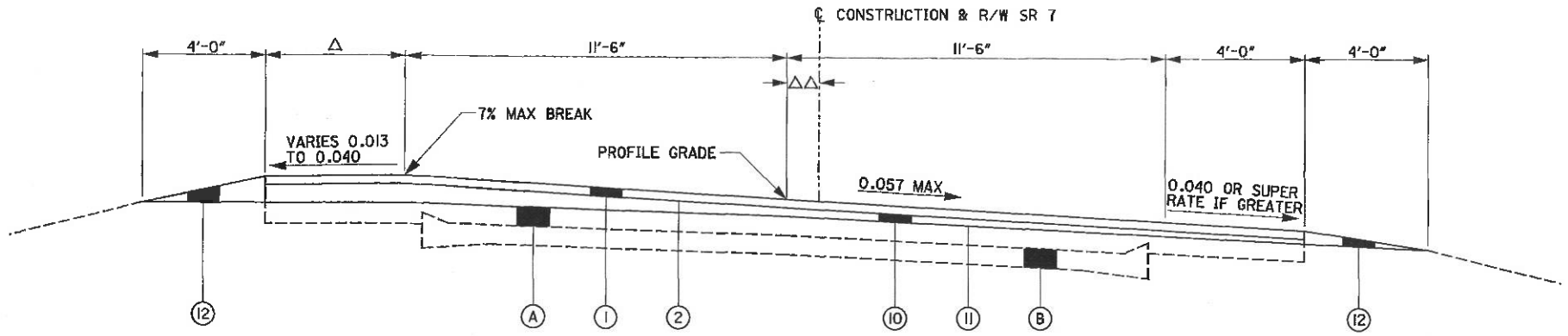
CALCULATED | CHECKED

TYPICAL SECTIONS

MOE-7-3.30

* UNLESS OTHERWISE SHOWN ON THE CROSS SECTIONS

** ½" / FT MINIMUM SLOPE, 1" / FT DESIRABLE SLOPE

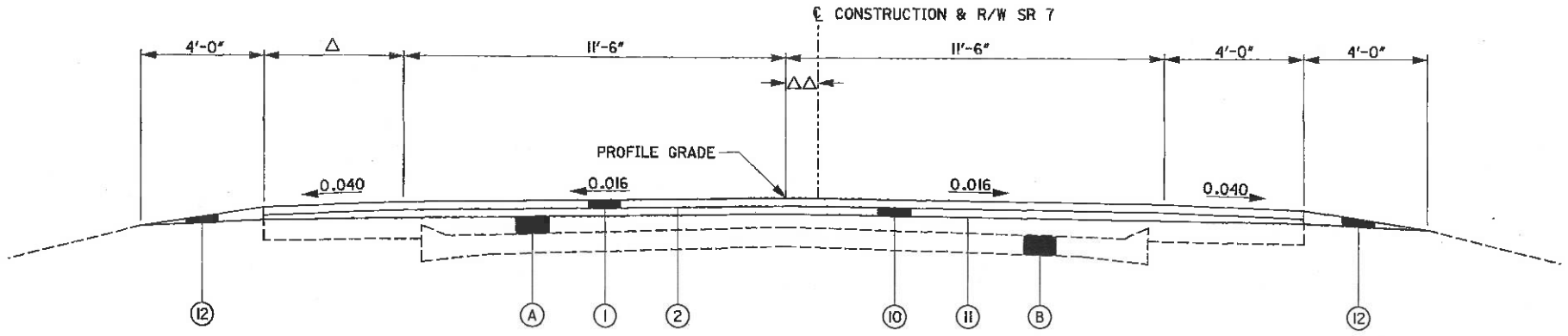


SUPERELEVATION SECTION

SECTION APPLIES:
STA. 175+00 TO STA. 180+00 = 500'
STA. 182+80 TO STA. 183+00 = 20'
TOTAL = 520'

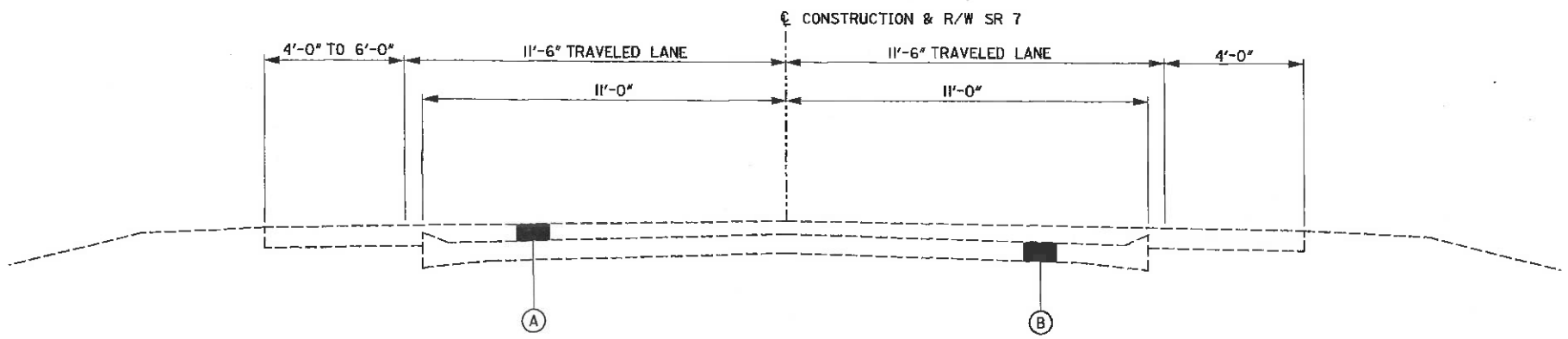
△ 4'-0" FROM STA. 174+50 TO STA. 180+00
6'-0" FROM STA. 182+80 TO STA. 183+50

△△ TAPERS FROM 1.3' AT 174+00 TO 0' AT 175+84.23
0' AT ALL OTHER LOCATIONS



NORMAL SECTION

SECTION APPLIES:
STA. 174+00 TO STA. 175+00 = 50'
STA. 183+00 TO STA. 183+50 = 50'
TOTAL = 100'



EXISTING TYPICAL

LEGEND

(1) ITEM 448 - 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE 1H
(2) ITEM 407 - TACK COAT FOR INTERMEDIATE COURSE
(3) ITEM 448 - 1.75" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG64-28
(4) ITEM 301 - 9" ASPHALT CONCRETE BASE, PG64-22
(5) ITEM 304 - 6" AGGREGATE BASE
(6) ITEM 204 - SUBGRADE COMPACTION
(7) ITEM 605 - AGGREGATE DRAIN
(8) ITEM 606 - GUARDRAIL, TYPE 5
(9) ITEM 659 - SEEDING & MULCHING
(10) ITEM 448 - VARIABLE THICKNESS ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG64-28
(11) ITEM 407 - TACK COAT
(12) ITEM 617 - COMPACTED AGGREGATE, AS PER PLAN (T=2" AVG.)
(13) ITEM 517 - RAILING (DEEP BEAM WITH 3 TUBULAR BACKUPS & STEEL POSTS)
(A) EXISTING ASPHALT CONCRETE, T=8"±
(B) EXISTING REINFORCED CONCRETE, T=7" (13" AT OUTER CURB EDGE)

CALCULATED | CHECKED

TYPICAL SECTIONS

MOE-7-3.30

CLEARING AND GRUBBING
THE DEPARTMENT HAS NOT MARKED INDIVIDUAL TREES FOR REMOVAL. UNLESS SPECIFICALLY DESIGNATED AS "DO NOT DISTURB" OR "SAVE" IN THE PLANS, REMOVE ALL TREES AND STUMPS WITHIN THE CONSTRUCTION LIMITS UNDER THE LUMP SUM BID FOR ITEM 201 CLEARING AND GRUBBING.

ROUNDING
THE ROUNDING AT SLOPE BREAKPOINTS SHOWN ON THE TYPICAL SECTIONS APPLY TO ALL CROSS-SECTIONS EVEN THOUGH OTHERWISE SHOWN.

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

TELEPHONE:
AT&T (SBC) TELEPHONE
526 N. FOURTH ST.
MARIETTA, OHIO 45750
DAVE SCHNELL, 740-373-9951

ELECTRIC:
WASHINGTON ELECTRIC COOP
406 COLEGATE DRIVE
MARIETTA, OHIO 45750
JOEL VALLEY, 740-373-2141

GAS:
WASHINGTON OPERATIONS
PO BOX 305
RENO, OHIO 45773
CARL HEINRICH, 740-373-5302

GAS:
DOMINION EAST OHIO
193 ASHBEY RIDGE ROAD
PARKERSBURG, WV 26101
TAMMY MAZE, 740-374-4276

WATER:
MONROE WATER SYSTEMS
43022 SIX POINTS
PO BOX 15
LAINGS, OHIO 43752
JIM KURRAY, 740-472-1030

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.

CONTINGENCY QUANTITIES
THE CONTRACTOR SHALL NOT ORDER MATERIALS OR PERFORM WORK FOR ITEMS DESIGNATED BY PLAN NOTE TO BE USED "AS DIRECTED BY THE ENGINEER" UNLESS AUTHORIZED BY THE ENGINEER. THE ACTUAL WORK LOCATIONS AND QUANTITIES USED FOR SUCH ITEMS SHALL BE INCORPORATED INTO THE FINAL CHANGE ORDER GOVERNING COMPLETION OF THIS PROJECT.

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

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.

EXISTING PLANS
EXISTING PLANS ENTITLED "BRIDGE OVER MILLER'S RUN, S.H. NO. 7, SEC. T-2, BRIDGE NO. MO. 7-34, OCTOBER 1931" (QUARTER SIZE PLAN NO. 6) MAY BE INSPECTED IN THE ODOT DISTRICT 10 OFFICE IN MARIETTA.

ITEM 606 - ANCHOR ASSEMBLY, TYPE E-98
THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING EITHER OF THE FOLLOWING GUARDRAIL END TERMINALS.

1) THE ET-2000 (1997) MANUFACTURED BY TRINITY INDUSTRY, 1170 N. STATE STREET, GIRARD, OHIO 44420 (TELEPHONE: 330-545-4373).

THE LENGTH OF THE ET-2000 (1997) SYSTEM IS CONSIDERED TO BE 50'-0", INCLUSIVE OF TWO 25'-0" LONG RAIL ELEMENTS. 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. NO.	DRAWING NAME	DWG./ REV. DATE	ODOT APPROVAL DATE
SSS265M	ET-2000 (1997) PLAN, ELEVATION AND SECTIONS	6/20/97	3/6/98
SS142	ET2000 PLUS 50'-0" PLAN, ELEVATION AND SECTION 25'-0" RAIL, SLEEVE W/PL POSTS 1-4	4/12/00	7/31/00
SS141	ET2000 PLUS PLAN, ELEVATION AND SECTION 25'-0" RAIL, HBA POSTS 1-4	2/29/00	7/31/00
SS158	ET2000 PLUS 50'-0" WITH 12'-6" PANELS AND HBA POSTS 1-4 PLAN, ELEVATION AND SECTION	5/22/00	7/31/00

2) THE SKT-350 MANUFACTURED BY ROAD SYSTEMS, INC., 2516 MALLORY LANE, STOW, OHIO, 44224, (TELEPHONE: 330-346-0721).

THE LENGTH OF THE SKT-350 SYSTEM IS CONSIDERED TO BE 50'-0", INCLUSIVE OF FOUR 12'-6" LONG RAIL ELEMENTS. 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. NO.	DRAWING NAME	DWG./ REV. DATE	ODOT APPROVAL DATE
SKT-4M	SEQUENTIAL KINKING TERMINAL (SKT-350) ASSEMBLY WITH 4 FOUNDATION TUBES	12/11/97	3/6/98

THE FACE OF THE TYPE E-98 IMPACT HEAD SHALL BE COVERED WITH A SHEET OF TYPE G REFLECTIVE SHEETING, PER CMS 730.19, APPROXIMATELY 18" X 18".

REFER TO THE MANUFACTURER'S INSTRUCTION REGARDING THE INSTALLATION OF, AND THE GRADING AROUND, THE FOUNDATION TUBES AND GROUND STRUT. THE TOP OF ANY FOUNDATION TUBE SHOULD BE LESS THAN 4-INCHES ABOVE THE GROUND. THE PLACEMENT OF THE FOUNDATION TUBES SHOULD BE AN APPROPRIATE DEPTH BELOW THE LEVEL LINE IN ORDER TO MAINTAIN THE FINISHED GUARDRAIL HEIGHT OF 27-3/4-INCHES FROM THE EDGE OF THE SHOULDER.

ON-SITE GRADING IS REQUIRED IF THE TOP OF THE FOUNDATION TUBES OR TOP OF THE GROUND STRUT DOES PROJECT MORE THAN 4-INCHES ABOVE THE GROUND LINE.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 606, ANCHOR ASSEMBLY, TYPE E-98, EACH, AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT A COMPLETE AND FUNCTIONAL ANCHOR ASSEMBLY SYSTEM, INCLUDING ALL RELATED TRANSITIONS, REFLECTIVE SHEETING, HARDWARE, GRADING, EMBANKMENT AND EXCAVATION NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.

PART-WIDTH CONSTRUCTION
BECAUSE OF THE NECESSITY TO BUILD THIS PROJECT UNDER TRAFFIC AND TO CONSTRUCT THE FULL PAVEMENT WIDTH IN STAGES, EXTREME CARE SHALL BE TAKEN TO PREVENT THE CONSTRUCTION OF A BUTT JOINT IN THE BASE COURSES. LONGITUDINAL JOINTS SHALL BE LAPPED AS SHOWN ON STANDARD CONSTRUCTION DRAWING BP-3.1.

ITEM 605 - AGGREGATE DRAINS
AGGREGRATE DRAINS SHALL BE PLACED AS SHOWN ON THE TYPICAL SECTIONS.

SEEDING AND MULCHING
SEEDING AND MULCHING SHALL BE APPLIED TO ALL AREAS OF EXPOSED SOIL (EXCEPT BELOW THE STREAM SURFACE) BETWEEN THE RIGHT-OF-WAY LINES, AND WITHIN THE CONSTRUCTION LIMITS FOR AREAS OUTSIDE THE RIGHT-OF-WAY LINES COVERED BY WORK AGREEMENT OR SLOPE EASEMENT. QUANTITY CALCULATIONS FOR SEEDING AND MULCHING ARE BASED ON THESE LIMITS.

ITEM 607 - FENCE, MISC.: TEMPORARY FENCE
BEFORE STARTING ANY WORK ON THE INLET SIDE OF THE STRUCTURE, INSTALL PLASTIC CONSTRUCTION FENCE TO MARK THE RIGHT OF WAY LINE ON THE LEFT SIDE OF THE HIGHWAY. PLACE FENCE BETWEEN 178+90 AND 181+10 LEFT AND BETWEEN 181+80 AND 182+60 LEFT.

607, FENCE, MISC.: TEMPORARY FENCE - 300 FT
QUANTITY CARRIED TO SHEET 13

ITEM 617 - COMPACTED AGGREGATE, AS PER PLAN
ALL QUALITY REQUIREMENTS EXCEPT SHALE SHALL BE WAIVED. GRADATION REQUIREMENTS WILL BE AS SPECIFIED EXCEPT THE PLASTICITY INDEX SHALL BE WAIVED. MATERIAL SHALL MEET THE APPROVAL OF THE ENGINEER.

ITEM 202, BRIDGE RAILING REMOVED FOR STORAGE, AS PER PLAN
SAVE THE TUBULAR BACKUP ONLY. DISPOSE OF ALL OTHER RAIL PARTS. LOAD THE TUBULAR BACKUP ON TO STATE TRUCKS.

CALCULATED | CHECKED

GENERAL NOTES

MOE-7-3.30

ITEM 614 - MAINTAINING TRAFFIC
A MINIMUM OF ONE LANE OF TRAFFIC IN EACH DIRECTION SHALL BE MAINTAINED AT ALL TIMES BY USE OF THE EXISTING PAVEMENT, THE COMPLETED PAVEMENT, AND TEMPORARY TRAFFIC SIGNALS.

ALL EXISTING LANES SHALL BE OPEN TO TRAFFIC BETWEEN NOVEMBER 15 AND APRIL 15. NOVEMBER 15 SHALL BE CONSIDERED TO CONSTITUTE AN INTERIM COMPLETION DATE AND LIQUIDATED DAMAGES SHALL BE ASSESSED IN ACCORDANCE WITH 108.07 FOR EACH CALENDAR DAY THAT ALL LANES ARE NOT OPEN AND AVAILABLE TO TRAFFIC.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER FOR THE MAINTENANCE OF TRAFFIC.

410, TRAFFIC COMPACTED SURFACE, TYPE A OR B: 10 CU. YD.
614, ASPHALT CONCRETE FOR MAINTAINING TRAFFIC: 25 CU. YD.

FLAGGING OPERATIONS SHALL BE AS PER STANDARD DRAWING MT-97.10.

PLACE OW-128-48 OR OW-134-48 SIGNS IN FRONT OF THE CONSTRUCTION ZONE. PLACE OC-8-48 OR OC-10-48 SIGNS AT THE END OF THE CONSTRUCTION ZONE.

ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH 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 614, MAINTAINING TRAFFIC, UNLESS SEPARATELY ITEMIZED IN THE PLAN.

FULLY-ACTUATED OPERATION OF WORK ZONE TRAFFIC SIGNAL
THE WORK ZONE SIGNAL CONTROL REQUIRED FOR THIS PROJECT SHALL BE FULLY TRAFFIC-ACTUATED AND OPERATE IN A MANNER SIMILAR TO THAT DESCRIBED IN SECTION 733.02 OF THE CMS.

THE CONTRACTOR SHALL ALSO DESIGN, FURNISH, INSTALL AND MAINTAIN A TRAFFIC DETECTOR ON EACH TRAFFIC APPROACH WHICH WILL RELIABLY DETECT ALL LEGAL TRAFFIC APPROACHING (BUT NOT LEAVING) THE SIGNAL AS IT PASSES OR WAITS IN THE DESIGNATED DETECTOR ZONE SHOWN IN THE PLANS. DETECTOR DESIGNS WHICH DO NOT PROVIDE RELIABLE DETECTION, FREE FROM FALSE CALLS, SHALL BE IMMEDIATELY REPLACED BY THE CONTRACTOR.

PHASE 3 WORK ZONE MARKINGS AND SIGNS
THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY FOR USE AT LOCATIONS IDENTIFIED BY THE ENGINEER FOR WORK ZONE PAVEMENT MARKINGS AND SIGNS PER THE REQUIREMENTS 614.04 AND 614.11 DURING THE RESURFACING PHASE.

614, WORK ZONE MARKING SIGN: 6 EACH (2 EACH OF "NO EDGE LINES", "DO NOT PASS", AND "PASS WITH CARE"
614, WORK ZONE CENTER LINE, CLASS II: 0.36 MILE (1 0.02 MILE LONG APPLICATION OVER THE BOX AFTER PHASE 2 AND 2 0.17 LONG APPLICATIONS FROM 174+50 TO 183+50 ON THE INTERMEDIATE AND SUFACE COURSES.

DUST CONTROL
THE CONTRACTOR SHALL FURNISH AND APPLY WATER FOR DUST CONTROL AS DIRECTED BY THE ENGINEER. THE FOLLOWING CONTINGENCY QUANTITY HAS BEEN INCLUDED FOR DUST CONTROL PURPOSES:

616, WATER: 5 M. GAL.

ITEM 614 - WORK ZONE IMPACT ATTENUATOR, BIDIRECTIONAL
THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING EITHER OF THE FOLLOWING IMPACT ATTENUATORS:

1) THE QUADGUARD CZ, (24" WIDE 6-BAY) WORK ZONE IMPACT ATTENUATOR MANUFACTURED BY ENERGY ABSORPTION SYSTEMS, INC., ONE EAST WACKER DRIVE, CHICAGO, IL 60601 (TELEPHONE: 312-467-6750).

THE LENGTH OF THE 6-BAY QUADGUARD CZ IS 20'-9". INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AS DETAILED ON THE FOLLOWING PREAPPROVED SHOP DRAWINGS:

DWG. NO.	DRAWING NAME	DWG./ REV. DATE	ODOT APPROVAL
QSCZCVR-T4	QUADGUARD CZ SYSTEM FOR CONSTRUCTION ZONES	5/13/99 REV. J	8/27/99
35-40-10	QUADGUARD SYSTEM CONCRETE PAD, CZ, QG	11/19/97 REV. D	8/27/99
35-40-16	QUADGUARD SYSTEM BACKUP ASSEMBLY, CZ, QG	7/30/99 REV. F	8/27/99
3540512	QUADGUARD CZ SYSTEM NOSE ASSEMBLY, CZ, QG, 24,30,36	5/17/99	8/27/99
35-40-18	TRANSITION ASSEMBLY, 4 OFFSET, QG	6/25/99 REV. F	8/27/99
3540260	QUADGUARD SYSTEM PCMB ANCHOR ASSEMBLY	11/19/97 REV. C	8/27/99

2) THE TRACC (TRINITY ATTENUATING CRASH CUSHION) MANUFACTURED BY TRINITY INDUSTRY, 1170 N. STATE STREET, GIRARD, OHIO 44420 (TELEPHONE: 330-545-4373).

THE TRACC IS 21'-0" LONG AND 2'-7" WIDE. 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. NO.	DRAWING NAME	DWG./ REV. DATE	ODOT APPROVAL
SS450	CRASH CUSHION ATTENUATING TERMINAL PLAN, ELEVATION & SECTIONS	3/12/99 REV. 1	8/27/99
SS455	TRACC TRANSITION TO W-BEAM MEDIAN BARRIER PLAN, ELEVATION & SECTIONS	2/18/99	8/27/99
SS461	TRACC TRANSITION TO W-BEAM CONCRETE SAFETY SHAPE BARRIER PLAN, ELEVATION & SECTIONS	6/30/99 REV. 1	8/27/99
SS462	TRACC TRANSITION TO W-BEAM CONCRETE BARRIER SINGLE SLOPE PLAN, ELEVATION & SECTIONS	6/30/99	8/27/99

3) THE GREAT CZ IMPACT ATTENUATOR MANUFACTURED BY ENERGY ABSORPTION SYSTEMS INC. THIS ATTENUATOR MAY BE USED UNTIL JANUARY 1, 2007 IF THE ITEM WAS PURCHASED BEFORE OCTOBER 1, 1998 AND IS IN THE CONTRACTOR'S INVENTORY.

THE CONTRACTOR SHALL PROVIDE A REPLACEMENT UNIT WHEN AN IMPACT IS SEVERE ENOUGH TO REQUIRE COMPLETE REPLACEMENT OF THE ATTENUATOR. THE CONTRACTOR SHALL HAVE A SPARE PARTS PACKAGE AVAILABLE ON THE PROJECT SITE AT ALL TIMES WHEN AN ATTENUATOR IS IN PLACE. THE CONTRACTOR SHALL PROVIDE A MINIMUM OF ONE COMPLETE SPARE PARTS PACKAGE FOR EVERY 1 TO 6 UNITS INSTALLED ON THE PROJECT SITE. FOR EXAMPLE, 5 INSTALLED UNITS REQUIRE 1 SPARE PARTS PACKAGE AND 7 INSTALLED UNITS REQUIRE 2 SPARE PARTS PACKAGES.

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 614, WORK ZONE IMPACT ATTENUATOR, (UNIDIRECTIONAL OR BIDIRECTIONAL), EACH, AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT, MAINTAIN, REPAIR, REPLACE OR RELOCATE A COMPLETE AND FUNCTIONAL IMPACT ATTENUATOR SYSTEM, INCLUDING ALL RELATED BACKUPS, TRANSITIONS, LEVELING PADS, HARDWARE AND GRADING, NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.

MAINTENANCE OF TRAFFIC SEQUENCE
PHASE 1
A. WHILE USING FLAGGERS, INSTALL THE PORTABLE CONCRETE BARRIER (PCB), WORK ZONE IMPACT ATTENUATORS, AND TRAFFIC SIGNALS AS SHOWN ON THE FOLLOWING SHEET.

B. USING SIGNALS, MAINTAIN TWO WAY, ONE LANE TRAFFIC IN THE SOUTH BOUND LANE OF SR 7. SAW THROUGH THE BRIDGE AT 3.5' RIGHT AND REMOVE THE DOWN STREAM PORTION OF THE BRIDGE. BUILD THE LAST 18' OF THE BOX CULVERT FROM THE OUTLET END. WIDEN THE PAVEMENT ON THE RIGHT SIDE WITH THE ITEM 304 AND ITEM 301 LAYERS. PLACE THE ITEM 301 LAYER OVER THE BOX. INSTALL THE RIGHT SIDE GUARDRAIL.

PHASE 2
A. WHILE USING FLAGGERS, CHANGE THE PCB SETUP FROM THE PHASE 1 LAYOUT TO THE PHASE 2 LAYOUT.

B. USING SIGNALS, MAINTAIN TWO WAY, ONE LANE TRAFFIC ON THE NORTH BOUND SR 7 SHOULDER. REMOVE THE REMAINDER OF THE BRIDGE. FINISH BUILDING THE CULVERT. INSTALL THE LEFT SIDE GUARDRAIL.

PHASE 3
A. WHILE USING FLAGGERS, REMOVE THE PCB AND TRAFFIC SIGNALS. OPEN ALL LANES.

B. PLACE THE INTERMEDIATE AND SURFACE COURSES BETWEEN 174+50 AND 183+50 WHILE USING FLAGGERS TO MAINTAIN TRAFFIC.

C. COMPLETE THE PROJECT.

ALL QUANTITIES ON THIS SHEET CARRIED TO SHEET 14.

CALCULATED | CHECKED

MAINTENANCE OF TRAFFIC GENERAL NOTES

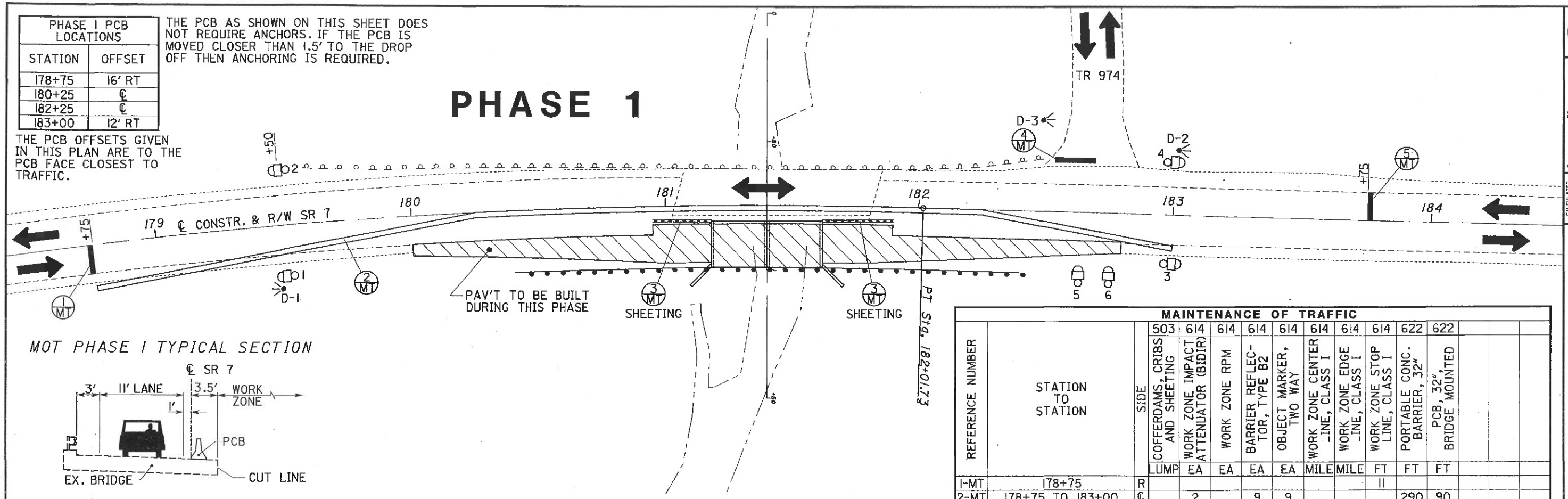
MOE-7-3.30

PHASE 1 PCB LOCATIONS	
STATION	OFFSET
178+75	16' RT
180+25	℄
182+25	℄
183+00	12' RT

THE PCB OFFSETS GIVEN IN THIS PLAN ARE TO THE PCB FACE CLOSEST TO TRAFFIC.

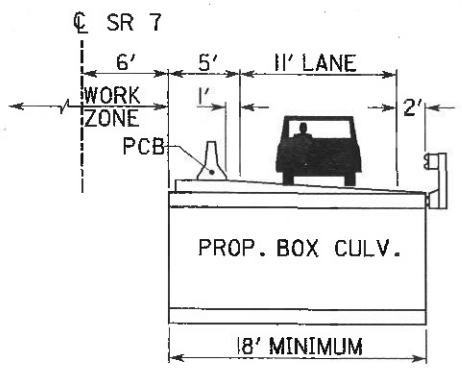
THE PCB AS SHOWN ON THIS SHEET DOES NOT REQUIRE ANCHORS. IF THE PCB IS MOVED CLOSER THAN 1.5' TO THE DROP OFF THEN ANCHORING IS REQUIRED.

PHASE 1



MOT PHASE 1 TYPICAL SECTION

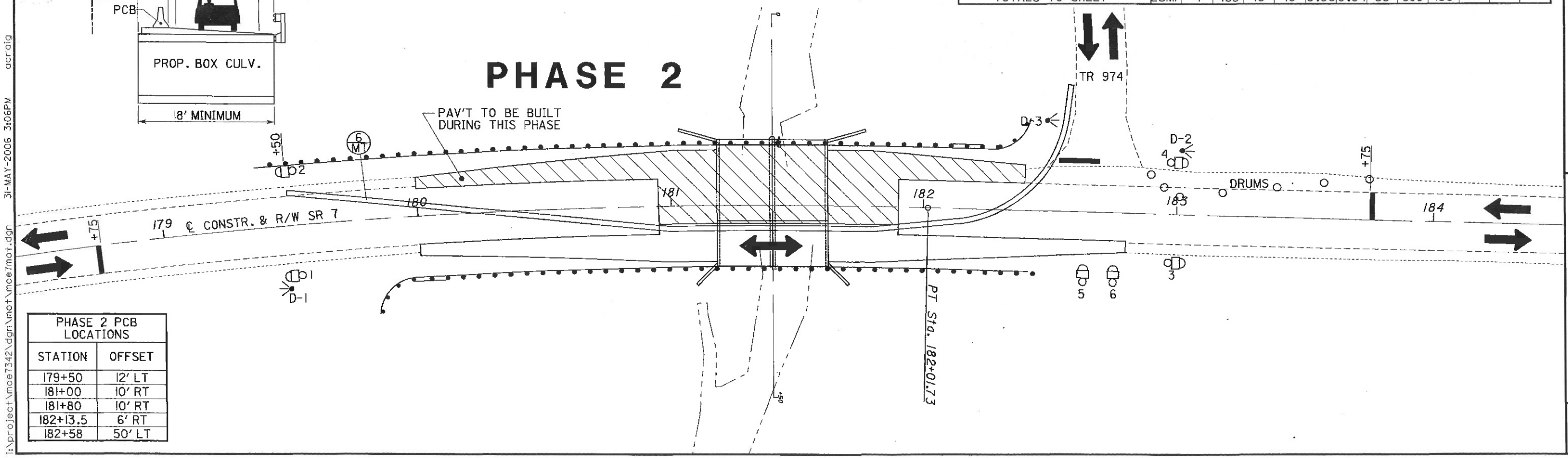
MOT PHASE 2 TYPICAL SECTION



MAINTENANCE OF TRAFFIC

REFERENCE NUMBER	STATION TO STATION	SIDE	503 COFFERDAMS, CRIBS AND SHEETING	614 WORK ZONE IMPACT ATTENUATOR (BIDIR)	614 WORK ZONE RPM	614 BARRIER REFLECTOR, TYPE B2	614 OBJECT MARKER, TWO WAY	614 WORK ZONE CENTER LINE, CLASS I	614 WORK ZONE EDGE LINE, CLASS I	614 WORK ZONE STOP LINE, CLASS I	622 PORTABLE CONC. BARRIER, 32"	622 PCB, 32" BRIDGE MOUNTED
			LUMP	EA	EA	EA	EA	MILE	MILE	FT	FT	FT
1-MT	178+75	R								11		
2-MT	178+75 TO 183+00	℄		2		9	9				290	90
3-MT	180+95 TO 181+90	L	LUMP									
4-MT	182+53 TO 182+69	L								16		
5-MT	183+75	L								11		
	PHASE 1 PAV'T MARKINGS				255			0.06	0.02			
6-MT	179+50 TO 182+58	℄		2		7	7				210	90
	PHASE 2 PAV'T MARKINGS				228				0.02			
	TOTALS TO SHEET		LUMP	4	483	16	16	0.06	0.04	38	500	180

PHASE 2



PHASE 2 PCB LOCATIONS	
STATION	OFFSET
179+50	12' LT
181+00	10' RT
181+80	10' RT
182+13.5	6' RT
182+58	50' LT

HORIZONTAL SCALE IN FEET

CALCULATED

CHECKED

MAINTENANCE OF TRAFFIC PHASE 1 AND PHASE 2

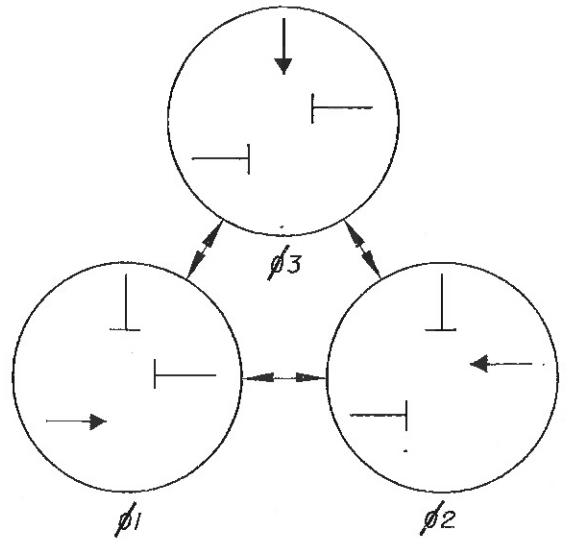
MOE-7-3.30

MOT PHASE 1 & 2 TRAFFIC SIGNAL TIMING

TIMING CHART

INTERVAL	ø1			ø2			ø3		
	1	2	3	4	5	6	7	8	9
GREEN	22			22			15		
YELLOW CHANGE		3			3			3	
ALL RED CLEARANCE			15			15			15
CYCLE LENGTH	113								

THE CONTROLLER SHALL REST IN RED

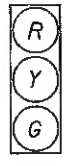


PHASING DIAGRAM

COLOR SEQUENCE CHART

INDICATIONS FACINGS	No	ø1			ø2			ø3		
		1	2	3	4	5	6	7	8	9
NORTH BOUND SR 7	1&2	G	Y	R	R	R	R	R	R	R
SOUTH BOUND SR 7	3&4	R	R	R	G	Y	R	R	R	R
TR 974	5&6	R	R	R	R	R	R	G	Y	R

1-2-3-4-5-6



12"

SIGNAL INDICATORS

TRAFFIC SIGNAL DETECTORS

	DETECTOR DESIGNATION	PULSE OR PRESENCE	LOCKING OR NON-LOCKING	CONNECT TO DETECTOR UNIT No	ASSOCIATED CONTROLLER PHASE	UNI/BI DIRECTIONAL
	D-1	PRESENCE	LOCKING	1	1	UNIDIRECTIONAL
	D-2	PRESENCE	LOCKING	2	2	UNIDIRECTIONAL
	D-3	PRESENCE	LOCKING	3	3	UNIDIRECTIONAL

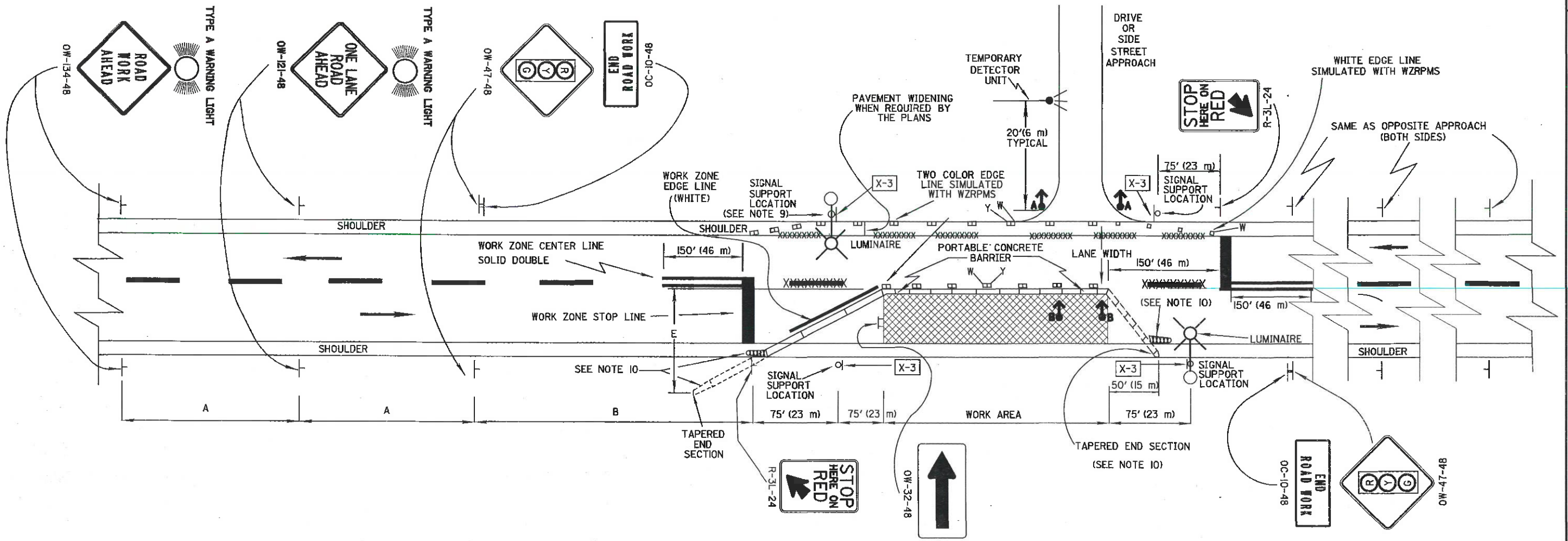
NOTE: FOR ADDITIONAL DETAILS AND NOTES, SEE THE ACTUATED WIRING DIAGRAM SHEET

CALCULATED | CHECKED

MAINTENANCE OF TRAFFIC SIGNAL TIMING

MOE-7-3.30

8
39



GENERAL NOTES:

1. Initial signal timing and phasing shall be as shown in the plans. Changes shall be approved by the Engineer.
2. Signals shall be installed and operated in accordance with the requirements of Part 6 of the Ohio Manual of Uniform Traffic Control Devices.
3. Work zone center line, solid, double, shall be installed and maintained when existing center line , solid double is not in place. 12" (300 mm) stop lines shall be installed. Work Zone Raised Pavement Markers (WZRPMs) to simulate a two color edge line shall be provided. Existing conflicting pavement markings and raised pavement marker reflectors shall be removed. Work zone edge lines which would conflict with final traffic lanes shall be removable (740.06 Type I) tape unless the area will be resurfaced in the next work phase. After completion of the work, pavement markings other than 740.06 Type I shall be removed in accordance with 641.10. The original markings and raised pavement marker reflectors shall be restored at no additional cost.
4. The horizontal or vertical alignment of the roadway may require adjustments in the location of the Advance Warning signs or the signal heads. Tree or brush trimming to provide adequate sight distance to sign and signals shall be provided as directed by the Engineer. The distances shown for Advance Warning Sign spacings in Table I are minimum.
5. The spacing between proposed signs should be adjusted to not conflict with and to provide a minimum of 200' (60 m) clearance to existing signs.
6. All traffic signal and lighting equipment used in this installation, such as signal or lighting cable, signal heads, luminaires or signal controller shall be in conformance with specification Items 625, 632, 633, 713, 732 and 733. However, the performance tests of 625.22e and 632.27(6), the working drawing requirements of 625.04, 632.03 and 633.03, the wiring diagram and service manual requirement of 633.04 and the testing and prequalification requirement of 633.05 are waived. Also the requirements of 733.01 concerning expansible 3-dial units and twelve signal circuits are waived. Used equipment is acceptable. Conflict monitors shall be used except with electromechanical pretimed controllers with camshaft.
7. If the signal is changed to flashing operation, red shall be flashed to all approaches on all signal heads.
8. Existing barrier between work zone stop lines shall be delineated with Item 614-barrier reflectors.
9. For side mounted signals, see MT-96.20. For overhead mounted signals, see MT-96.21.
10. A taper end section may be used in place of the impact attenuator at locations where the last full section of PCB can be extended outside of the clear zone for approaching traffic. See TABLE II for clear zone widths.
11. Work zone raised pavement markers shall be provided as per MT-101.20.
12. This standard drawing shall be used with standard drawing MT-101.70.

3 - PHASE SIGNAL

A-A and B-B are alternate signal locations. Signals at A-A shall be 8' above grade. Signals at B-B shall be 15' above grade. The temporary detector unit shall be; (1) a magnetic sensor attached to a light wood post at roadside if only a single approach lane, (2) loops or magnetometers imbedded in or fastened to the drive surface (imbedment shall not be used for concrete or asphalt concrete unless the surface is to be surfaced over later as a part of the work) or (3) sonic detectors, mounted on a suitable support beside or over the Road.

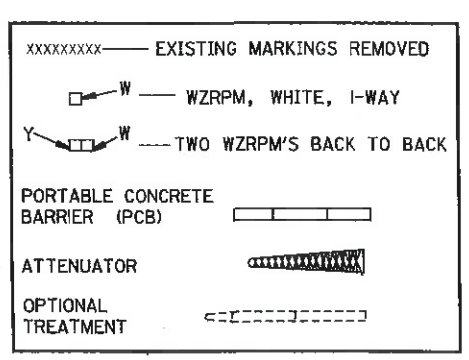


TABLE I

DISTANCE FT (m)	A	B	C
URBAN (≤ 40 MPH)	200 (60)	350 (105)	50 (15)
URBAN (≥ 45 MPH)	350 (105)	750 (230)	100 (30)
RURAL	500 (150)	750 (230)	100 (30)

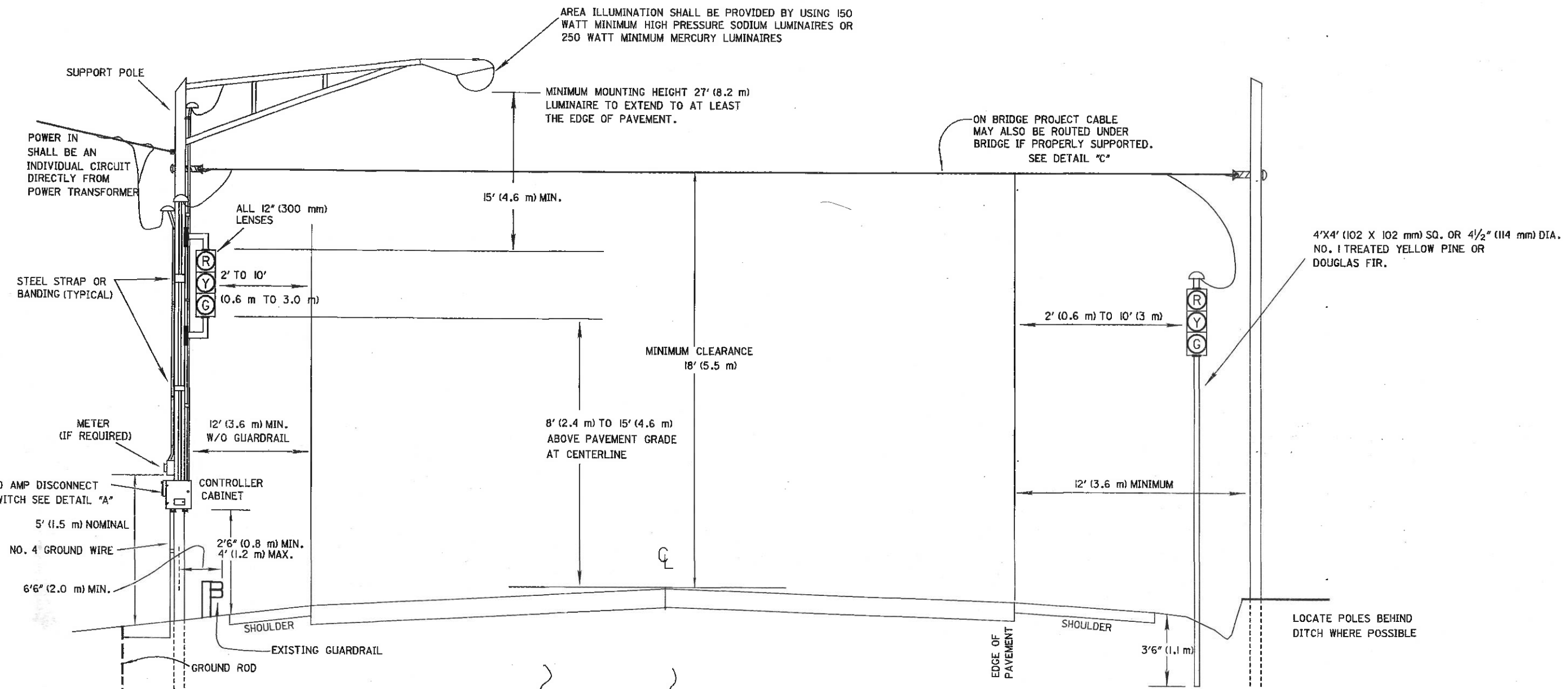
TABLE II

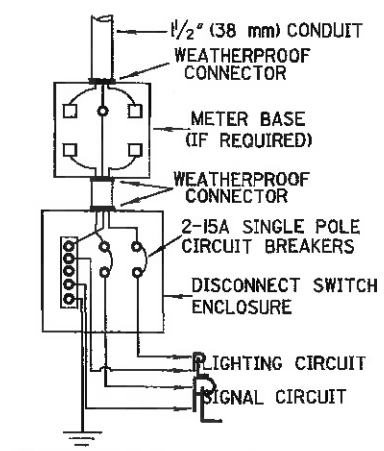
SPEED LIMIT (MPH)	CLEAR ZONE WIDTH (E) FT (m)
40 OR LESS	15 (5)
45-50	19 (6)
55	23 (7)

MAINTENANCE OF TRAFFIC - SIGNALIZED CLOSING FOR ONE LANE OF A TWO LANE HIGHWAY WITH PCB (3-PHASE)

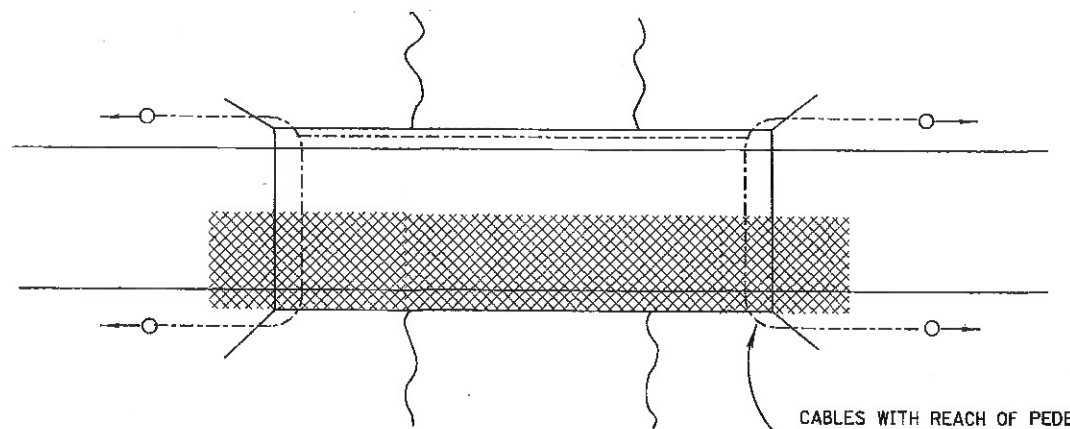
CALCULATED | CHECKED

MOE-7-3.30



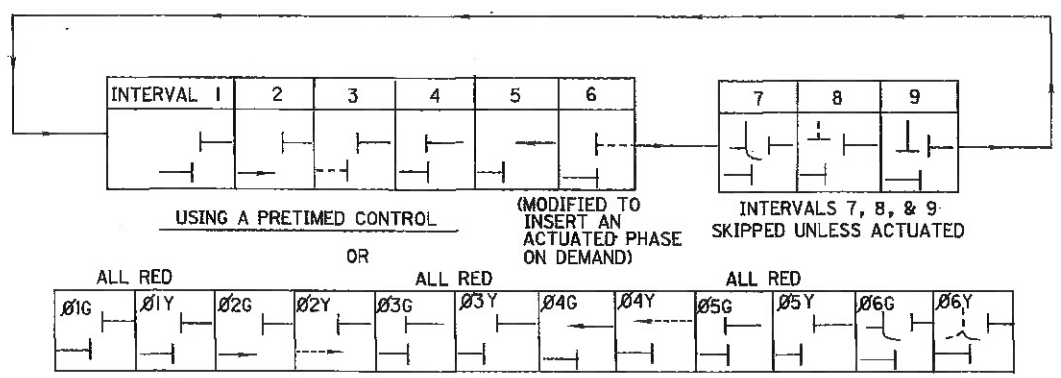


DETAIL "A"



ALTERNATE CABLE ROUTING

DETAIL "C"



WHEN CALLED FOR IN THE PLANS, Ø2 GREEN, Ø4 GREEN AND Ø6 GREEN SHALL BE ACTUATED BY DETECTORS AT APPROACH TO THE WORK ZONE. Ø1, Ø3 AND Ø5 ARE DUMMY PHASES TO TIME ALL RED INTERVAL. TIMING INITIALIZES ON PHASE ONE.

USING A 6 PHASE ACTUATED CONTROL

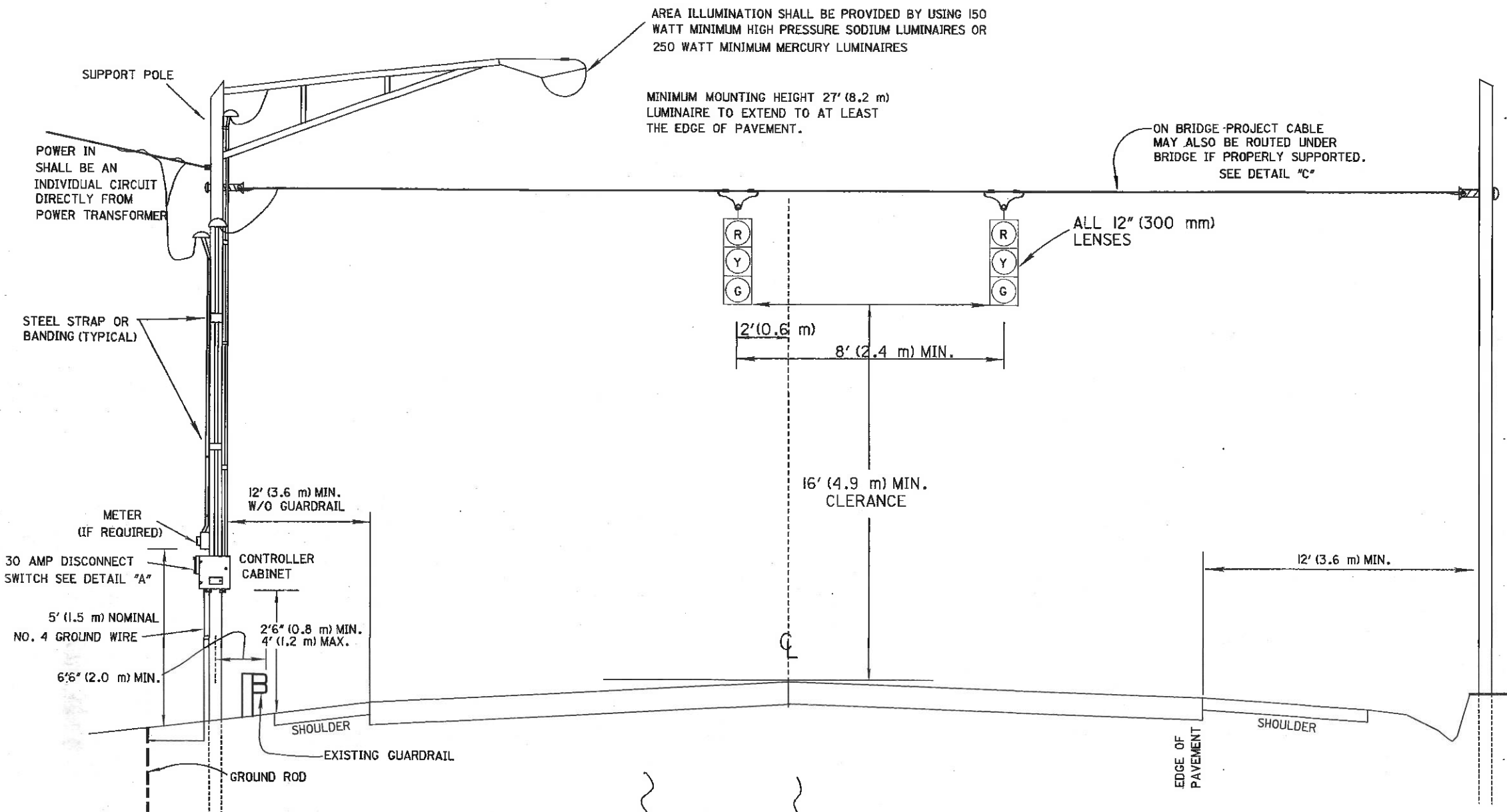
DETAIL " B "
SIGNAL PHASING

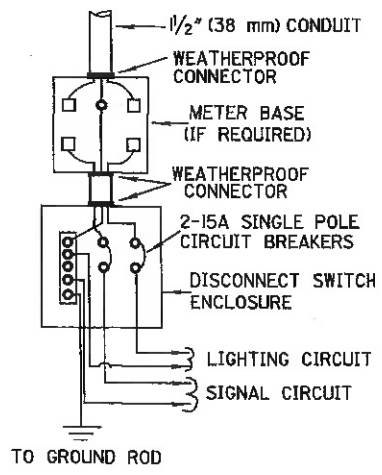
CALCULATED | CHECKED

MAINTENANCE OF TRAFFIC

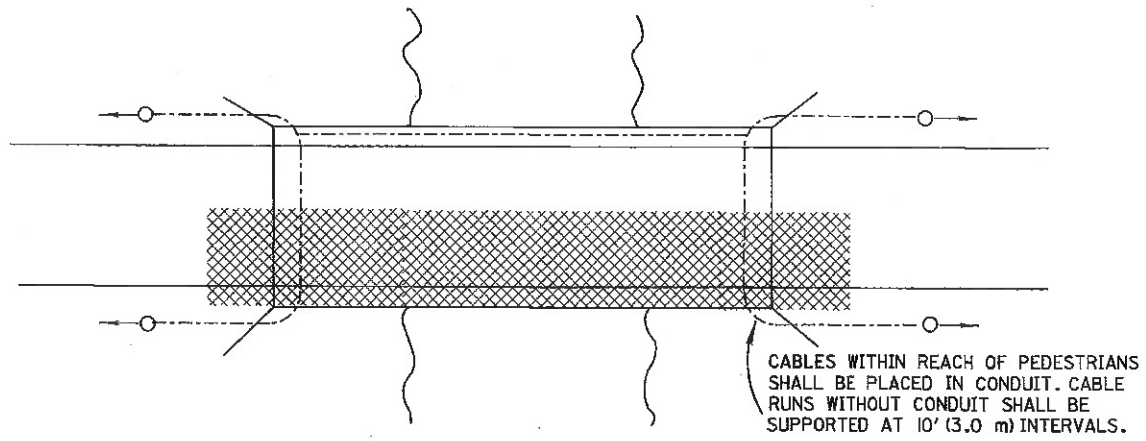
DETAILS FOR SIDE MOUNTED 3 PHASE SIGNALS

MOE-7-3.30



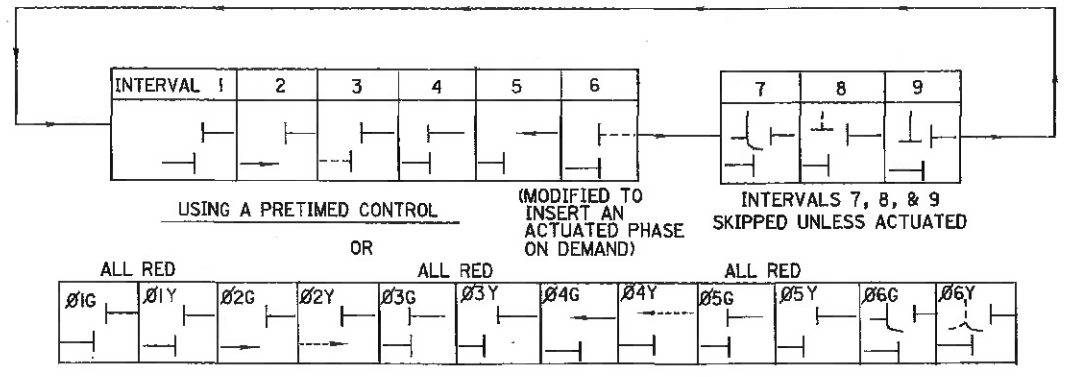


DETAIL "A"



ALTERNATE CABLE ROUTING

DETAIL "C"



WHEN CALLED FOR IN THE PLANS, Ø2 GREEN, Ø4 GREEN AND Ø6 GREEN SHALL BE ACTUATED BY DETECTORS AT APPROACH TO THE WORK ZONE. Ø1, Ø3 AND Ø5 ARE DUMMY PHASES TO TIME ALL RED INTERVAL. TIMING INITIALIZES ON PHASE ONE.

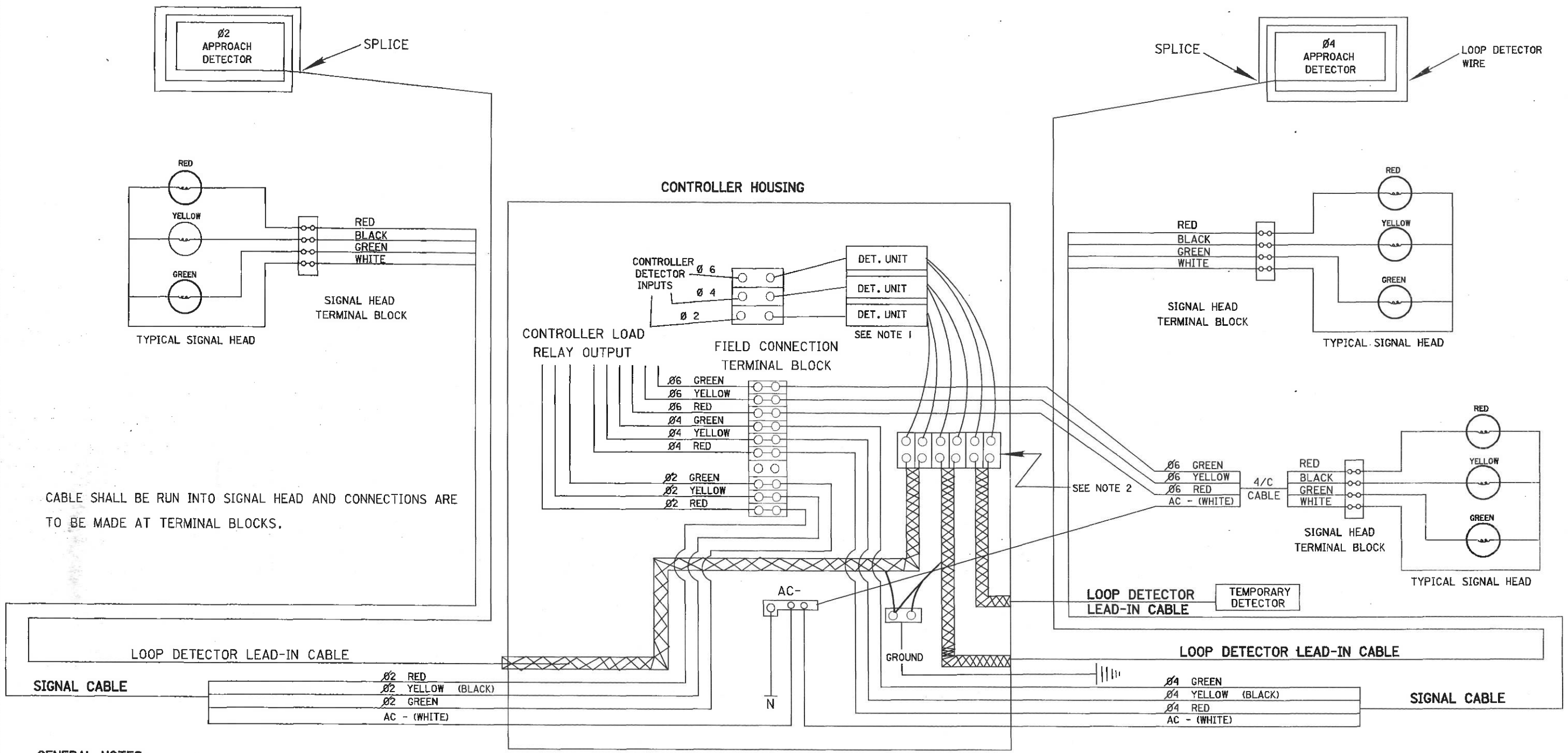
USING A 6 PHASE ACTUATED CONTROL

DETAIL " B "
SIGNAL PHASING

CALCULATED | CHECKED

MAINTENANCE OF TRAFFIC
DETAILS FOR OVERHEAD MOUNTED 3 PHASE SIGNALS

MOE-7-3.30



CABLE SHALL BE RUN INTO SIGNAL HEAD AND CONNECTIONS ARE TO BE MADE AT TERMINAL BLOCKS.

TYPICAL SIGNAL HEAD HOOK-UP

GENERAL NOTES:

1. Detection may be loop, magnetometer, sonic or infra-red but shall be chosen, installed and operated to provide dependable accurate detection on each approach without false calls resulting from other traffic. Cabling shown is for loop detectors. However, suitable cable types, as recommended by the manufacturers shall be used for other detectors.

2. Lightning protection, as required in 733.04 shall be provided for solid state electronic controllers and detectors.

3. Signal cable shall be 5/c No. 14 AWG as specified in 732.19. All electrical connections to be made at terminal blocks using lock fork terminals. Splices in signal cable should be avoided but if necessary splice kits shall be used. All connections at splice points shall be soldered.

4. Signal timing settings shall be as shown in the plans or provided to the Contractor by the Engineer prior to implementation of signal control. The Contractor shall periodically monitor the signal operation to determine failure or inefficient operation.

   All equipment failures including timing mechanisms and detectors shall be reported to the Engineer and fully repaired by the Contractor as soon as possible, but in no case longer than 8 hours following notification of the Contractor by the Engineer. All failures resulting in unsafe operations of the signal (i.e., signal or lamp failure, short-timing of yellow or all red intervals, mis-aimed signals, conflictiong displays) shall result in the Contractor using 2-way radios to control traffic through the work area until the signal is fully repaired. Failures shall include situations caused by traffic accidents, acts of God or any other cause whether under the control of the Contractor or not.

   If the Engineer determines that the signal operation, although in accordance with the plans and previous orders, is not providing acceptable safe and efficient movement of traffic, the Engineer shall order that appropriate changes such as timing alterations, signal or detector relocations, etc. be made to remedy the situation, at no additional cost to the State. Timing changes and signal relocations shall be implemented within four hours, detector relocations and changes within 24 hours. Failure to make required changes within these time limits shall result in the assessment of liquidated damages of $100.00 per calendar day until the changes are completed.

CALCULATED | CHECKED

MAINTENANCE OF TRAFFIC - ACTUATED WIRING DIAGRAM FOR 3 PHASE SIGNALIZED CLOSING OF 1 LANE OF A 2 LANE

MOE-7-3.30

SHEET NUMBER										ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
5		15	16	17		19									
														ROADWAY	
LUMP										201	11000	LUMP		CLEARING AND GRUBBING	
				LUMP						202	11000	LUMP		STRUCTURE REMOVED	
		41								202	23000	41	SQ YD	PAVEMENT REMOVED	
				438						202	38000	438	FT	GUARDRAIL REMOVED	
				150						202	38601	150	FT	BRIDGE RAILING REMOVED FOR STORAGE, AS PER PLAN	5
			12							202	54000	12	EACH	RAISED PAVEMENT MARKER REMOVED	
						822				203	10000	822	CU YD	EXCAVATION	
						1048				203	20000	1048	CU YD	EMBANKMENT	
		607								204	10000	607	SQ YD	SUBGRADE COMPACTION	
				106.26						517	72510	106.26	FT	RAILING (DEEP BEAM RAIL WITH 3 STEEL TUBULAR BACKUPS AND STEEL POSTS)	
				343.75						606	13000	243.75	FT	GUARDRAIL, TYPE 5	
				2						606	22010	2	EACH	ANCHOR ASSEMBLY, TYPE E-98	
				2						606	26500	2	EACH	ANCHOR ASSEMBLY, TYPE T	
				4						606	35140	4	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 4	
300										607	98000	300	FT	FENCE, MISC.: TEMPORARY FENCE	5
														EROSION CONTROL	
				46						601	11001	46	SQ YD	RIPRAP USING 6" REINFORCED CONCRETE SLAB, AS PER PLAN	29
				75						601	32004	75	CU YD	ROCK CHANNEL PROTECTION, TYPE A WITH FABRIC FILTER	
				6						601	32204	6	CU YD	ROCK CHANNEL PROTECTION, TYPE C WITH FABRIC FILTER	
						3114				659	10000	3114	SQ YD	SEEDING AND MULCHING	
						160				659	14000	160	SQ YD	REPAIR SEEDING AND MULCHING	
						0.42				659	20000	0.42	TON	COMMERCIAL FERTILIZER	
						0.07				659	31000	0.07	ACRE	LIME	
						17				659	35000	17	M GAL	WATER	
										832	15000	LUMP		STORM WATER POLLUTION PREVENTION PLAN	
										832	30000	1500	EACH	EROSION CONTROL	
														DRAINAGE	
				LUMP						503	21300	LUMP		UNCLASSIFIED EXCAVATION	
				6998						509	10000	6998	POUND	EPOXY COATED REINFORCING STEEL	
				84						511	47000	84	CU YD	CLASS C CONCRETE, CULVERT	
				72						512	10100	72	SQ YD	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	
				100						512	33000	100	SQ YD	TYPE 2 WATERPROOFING	
				256						512	33010	256	SQ YD	TYPE 3 WATERPROOFING	
				40						516	13600	40	SQ FT	1" PREFORMED EXPANSION JOINT FILLER	
				16						518	21200	16	CU YD	POROUS BACKFILL WITH FILTER FABRIC	
				56						SPECIAL	51822300	56	FT	STEEL DRIP STRIP	29
				0.7						602	20000	0.7	CU YD	CONCRETE MASONRY	
				84						603	04600	84	FT	12" CONDUIT, TYPE C	
				57						603	10600	57	FT	24" CONDUIT, TYPE C	
				100						603	96487	100	FT	20'X7' CONDUIT, TYPE A, 706.05, AS PER PLAN	28
				2						604	02804	2	EACH	CATCH BASIN, NO. 8 WITHOUT APRON	
				1						604	04500	1	EACH	CATCH BASIN, NO. 2-2B	
		55								605	31100	55	FT	AGGREGATE DRAINS	

CALCULATED

CHECKED

GENERAL SUMMARY

MOE-7-3.30

13
39

SHEET NUMBER							ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
6	7		15	16	17							
											PAVEMENT	
			263				301	46000	263	CU YD	ASPHALT CONCRETE BASE, PG64-22	
			103				304	20000	103	CU YD	AGGREGATE BASE	
			245				407	10000	245	GALLON	TACK COAT	
			138				407	14000	138	GALLON	TACK COAT FOR INTERMEDIATE COURSE	
			172				448	46040	172	CU YD	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG64-28	
			147				448	50000	147	CU YD	ASPHALT CONCRETE SURFACE COURSE, TYPE IH	
			9				617	10101	9	CU YD	COMPACTED AGGREGATE, AS PER PLAN	5
											TRAFFIC CONTROL	
					8		626	00300	8	EACH	BARRIER REFLECTOR, TYPE A2	
					24		630	02100	24	FT	GROUND MOUNTED SUPPORT, NO. 2 POST	
					11.3		630	80100	11.3	SQ FT	SIGN, FLAT SHEET	
					7		630	84900	7	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	
					6		630	86002	6	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	
				0.43			642	00090	0.43	MILE	EDGE LINE	
				0.22			642	00290	0.22	MILE	CENTER LINE	
				32			644	00500	32	FT	STOP LINE	
											MAINTENANCE OF TRAFFIC	
	10						410	12000	10	CU YD	TRAFFIC COMPACTED SURFACE, TYPE A OR B	
		LUMP					503	11100	LUMP		COFFERDAMS, CRIBS AND SHEETING	
		4					614	12338	4	EACH	WORK ZONE IMPACT ATTENUATOR (BIDIRECTIONAL)	6
	6						614	12460	6	EACH	WORK ZONE MARKING SIGN	
		483					614	12800	483	EACH	WORK ZONE RAISED PAVEMENT MARKER	
	25						614	13000	25	CU YD	ASPHALT CONCRETE FOR MAINTAINING TRAFFIC	
		16					614	13302	16	EACH	BARRIER REFLECTOR, TYPE B2	
		16					614	13360	16	EACH	OBJECT MARKER, TWO WAY	
		0.06					614	21000	0.06	MILE	WORK ZONE CENTER LINE, CLASS I	
	0.36						614	21400	0.36	MILE	WORK ZONE CENTER LINE, CLASS II	
		0.04					614	22000	0.04	MILE	WORK ZONE EDGE LINE, CLASS I	
		38					614	26000	38	FT	WORK ZONE STOP LINE, CLASS I	
	5						616	10000	5	M GAL	WATER	
		500					622	40020	500	FT	PORTABLE CONCRETE BARRIER, 32"	
		180					622	40040	180	FT	PORTABLE CONCRETE BARRIER, 32", BRIDGE MOUNTED	
							614	11000	LUMP		MAINTAINING TRAFFIC	
							619	16000	5	MONTH	FIELD OFFICE, TYPE A	
							623	10000	LUMP		CONSTRUCTION LAYOUT STAKES	
							624	10000	LUMP		MOBILIZATION	

CALCULATED

CHECKED

GENERAL SUMMARY

MOE-7-3.30

ITEM 448 - 1.5" ASPHALT CONC. SURF. COURSE, TYPE IH
STA. 174+50 TO STA. 180+00
550' x 31' x 1.5/12 ÷ 27 = 78.9 CY

STA. 180+00 TO STA. 181+00
100' x 37.5' AVG. x 1.5/12 ÷ 27 = 17.4 CY

STA. 181+00 TO STA. 181+18
18' x 44' x 1.5/12 ÷ 27 = 3.7 CY

STA. 181+18 TO STA. 181+62
44' x 48' x 1.5/12 ÷ 27 = 9.8 CY

STA. 181+62 TO STA. 181+80
18' x 44' x 1.5/12 ÷ 27 = 3.7 CY

STA. 181+80 TO STA. 182+50
70' x 39.5' AVG. x 1.5/12 ÷ 27 = 12.8 CY

STA. 182+50 TO STA. 182+80
30' x 34' AVG. x 1.5/12 ÷ 27 = 4.7 CY

STA. 182+80 TO STA. 183+50
70' x 33' x 1.5/12 ÷ 27 = 10.7 CY

TR 542 & TR 974 APRONS (AS DIRECTED BY THE ENGINEER) = 5.0 CY

ITEM 442, SURFACE COURSE TOTAL = 147 CY

ITEM 407 - TACK COAT FOR INTERMEDIATE COURSE
STA. 174+50 TO STA. 180+00
550' x 31' x 0.04 GAL/SY ÷ 9 = 75.8 GAL

STA. 180+00 TO STA. 181+00
100' x 37.5' AVG. x 0.04 GAL/SY ÷ 9 = 16.7 GAL

STA. 181+00 TO STA. 181+80
80' x 44' x 0.04 GAL/SY ÷ 9 = 15.6 GAL

STA. 181+80 TO STA. 182+50
70' x 39.5' AVG. x 0.04 GAL/SY ÷ 9 = 12.3 GAL

STA. 182+50 TO STA. 182+80
30' x 34' AVG. x 0.04 GAL/SY ÷ 9 = 4.5 GAL

STA. 182+80 TO STA. 183+50
70' x 33' x 0.04 GAL/SY ÷ 9 = 10.3 GAL

TR 542 APRON (AS DIRECTED BY THE ENGINEER) = 2.0 GAL

ITEM 407, INTERMEDIATE TACK TOTAL = 138 GAL

ITEM 407 - TACK COAT
STA. 174+50 TO STA. 180+00
550' x 31' x 0.07 GAL/SY ÷ 9 = 132.6 GAL

STA. 180+00 TO STA. 181+00
100' x 37.5' AVG. x 0.07 GAL/SY ÷ 9 = 29.2 GAL

STA. 181+00 TO STA. 181+80
80' x 44' x 0.07 GAL/SY ÷ 9 = 27.4 GAL

STA. 181+80 TO STA. 182+50
70' x 39.5' AVG. x 0.07 GAL/SY ÷ 9 = 21.5 GAL

STA. 182+50 TO STA. 182+80
30' x 34' AVG. x 0.07 GAL/SY ÷ 9 = 7.9 GAL

STA. 182+80 TO STA. 183+50
70' x 33' x 0.07 GAL/SY ÷ 9 = 18.0 GAL

TR 542 & TR 974 APRONS (AS DIRECTED BY THE ENGINEER) = 8.0 GAL

ITEM 407, TACK COAT TOTAL = 245 GAL

ITEM 304 - AGGREGATE BASE
STA. 180+00 TO STA. 180+95
FROM TABLE ON THIS SHEET = 30.2 CY

STA. 180+95 TO STA. 181+00
5' x 45.7' AVG. x 6/12 ÷ 27 = 4.2 CY

STA. 181+00 TO STA. 181+18
18' x 46' x 6/12 ÷ 27 = 15.3 CY

STA. 181+62 TO STA. 181+80
18' x 46' x 6/12 ÷ 27 = 15.3 CY

STA. 181+80 TO STA. 181+90
10' x 45.4' AVG. x 6/12 ÷ 27 = 8.4 CY

STA. 181+90 TO STA. 182+80
FROM TABLE ON THIS SHEET = 29.3 CY

ITEM 304 - AGGREGATE BASE TOTAL = 103 CY

ITEM 301 - ASPHALT BASE, PG64-22
STA. 180+00 TO STA. 180+95
FROM TABLE ON THIS SHEET = 47.3 CY

STA. 180+95 TO STA. 181+00
5' x 44.7' AVG. x 9/12 ÷ 27 = 6.2 CY

STA. 181+00 TO STA. 181+18
18' x 45' x 9/12 ÷ 27 = 22.5 CY

STA. 181+18 TO STA. 181+62
44' x 63.1 SF (MEASURED ON X-SECT.) ÷ 27 = 102.8 CY

STA. 181+62 TO STA. 181+80
18' x 45' x 9/12 ÷ 27 = 22.5 CY

STA. 181+80 TO STA. 181+90
10' x 44.4' AVG. x 9/12 ÷ 27 = 12.3 CY

STA. 181+90 TO STA. 182+80
FROM TABLE ON THIS SHEET = 41.5 CY

TR 542 APRON (AS DIRECTED BY THE ENGINEER) = 8.0 CY

ITEM 301 - ASPHALT BASE TOTAL = 263 CY

ITEM 204 - SUBGRADE COMPACTION
STA. 180+00 TO STA. 180+95
95' x 18.2' AVG. ÷ 9 = 192.1 SY

STA. 180+95 TO STA. 181+00
5' x 46.7' AVG. ÷ 9 = 25.9 SY

STA. 181+00 TO STA. 181+18
18' x 47' ÷ 9 = 94.0 SY

STA. 181+62 TO STA. 181+80
18' x 47' ÷ 9 = 94.0 SY

STA. 181+80 TO STA. 181+90
10' x 46.4' AVG. ÷ 9 = 51.6 SY

STA. 181+90 TO STA. 182+50
60' x 18.8' AVG. ÷ 9 = 125.3 SY

STA. 182+50 TO STA. 182+80
30' x 7' AVG. ÷ 9 = 23.3 SY

ITEM 204 - SUBGRADE COMPACTION = 607 SY

ITEM 202 - PAVEMENT REMOVED
STA. 180+95 TO STA. 181+03.4
8.4' (MEASURED AT ℄) x 22' ÷ 9 = 20.5 SY

STA. 181+81.8 TO STA. 181+90
8.2' (MEASURED AT ℄) x 22' ÷ 9 = 20.0 SY

ITEM 202, PAVEMENT REMOVED TOTAL = 41 SY

ITEM 605 - AGGREGATE DRAINS
PLACE AGGREGATE DRAINS AT 180+50 LEFT, 181+00 LEFT, 181+05 RIGHT, 181+75 RIGHT, AND 181+80 LEFT.
5 x 11' AVG. = 55'

ITEM 605, AGGREGATE DRAIN TOTAL = 55 FT

ITEM 617 - COMPACTED AGGREGATE, TYPE A, A.P.P.
STA. 174+50 TO STA. 176+50, LEFT SIDE ONLY
200' x 4' x 2" AVG./12÷ 27 = 4.9 CY

STA. 182+80 TO STA. 183+50, LEFT AND RIGHT
2 x 70' x 4' x 2" AVG./12÷ 27 = 3.5 CY

ITEM 617, COMPACTED AGGREGATE TOTAL = 9 CY

ITEM 448 - ASPHALT CONC. INT. COURSE, TYPE 2
STA. 174+50 TO STA. 180+95
FROM TABLE ON THIS SHEET = 134.7 CY

STA. 180+95 TO STA. 181+00
5' x 43.7' AVG. x 1.75/12 ÷ 27 = 1.2 CY

STA. 181+00 TO STA. 181+18
18' x 44' x 1.75/12 ÷ 27 = 4.3 CY

STA. 181+18 TO STA. 181+62
44' x 34' x 1.75/12 ÷ 27 = 8.1 CY

STA. 181+62 TO STA. 181+80
18' x 44' x 1.75/12 ÷ 27 = 4.3 CY

STA. 181+80 TO STA. 181+90
10' x 43.4' AVG. x 1.75/12 ÷ 27 = 2.3 CY

STA. 181+90 TO STA. 183+50
FROM TABLE ON THIS SHEET = 16.9 CY

ITEM 448, INTERMEDIATE COURSE TOTAL = 172 CY

STATION	ITEM 448 INT. AREA* (SF)	ITEM 448 INT. VOL.** (CY)	ITEM 301 AREA* (SF)	ITEM 301 VOL.** (CY)	ITEM 304 AREA* (SF)	ITEM 304 VOL.** (CY)
174+50	0					
		4.4				
175+00	4.8					
		12.9				
175+50	9.1					
		16.3				
176+00	8.5					
		13.6				
176+50	6.2					
		10.4				
177+00	5.0					
		9.1				
177+50	4.8					
		9.5				
178+00	5.5					
		10.4				
178+50	5.7					
		9.4				
179+00	4.4					
		7.9				
179+50	4.1					
		9.8				
180+00	6.5		8.3		5.5	
		10.7		21.1		13.1
180+50	5.1		14.5		8.7	
		10.3		26.2		17.1
180+95	7.3		16.9		11.8	
181+90	5.3		16.3		11.5	
		1.9		5.9		4.1
182+00	5.2		15.3		10.7	
		8.4		23.9		16.9
182+50	3.9		10.5		7.5	
		4.3		11.7		8.3
182+80	3.9		10.5		7.5	
		1.7				
183+00	0.7					
		0.6				
183+50	0					

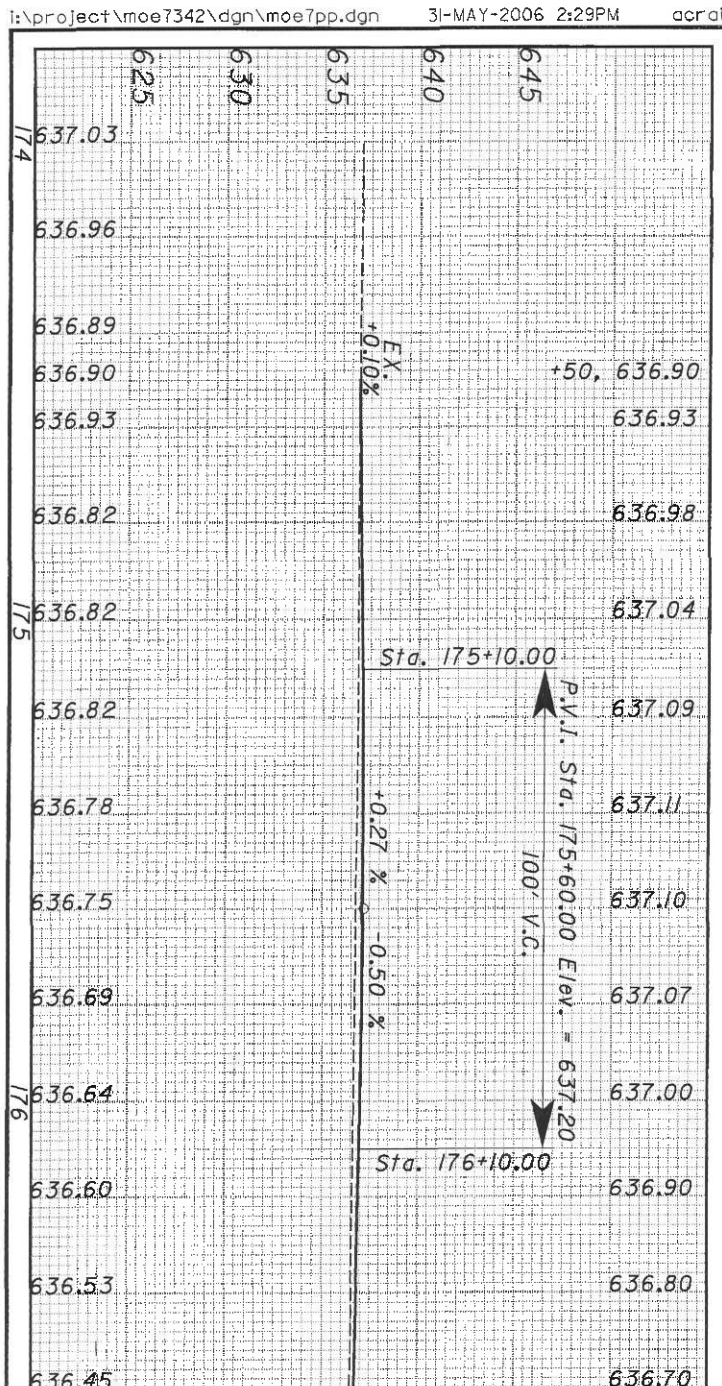
*THE AREAS WERE MEASURED ON THE CROSS SECTIONS.
** VOLUME = DISTANCE x ((AREA1 + AREA2) ÷ 2) ÷ 27

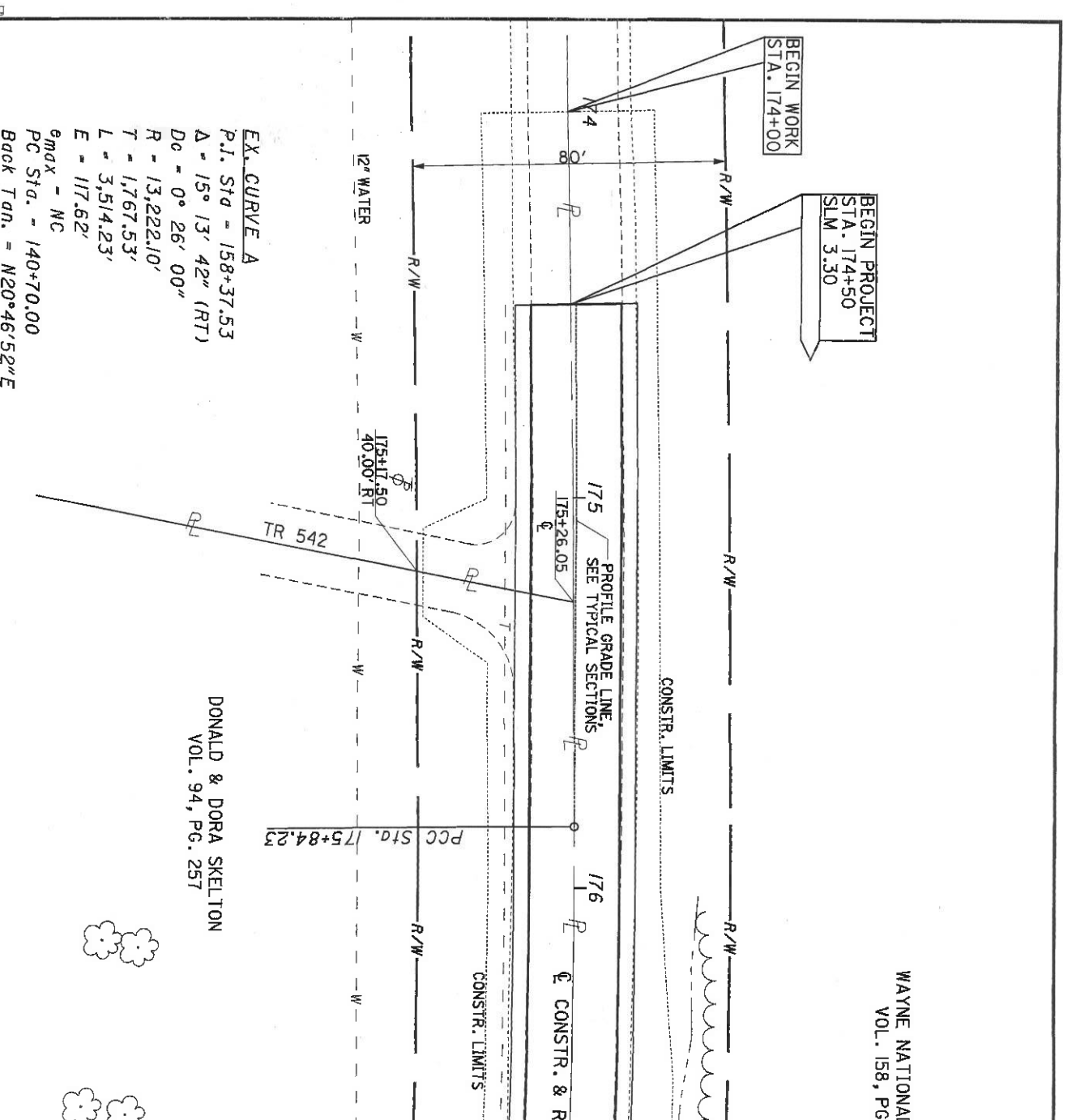
QUANTITIES ON THIS SHEET ARE CARRIED TO SHEETS 13 & 14

CALCULATED
CHECKED

CALCULATIONS

MEG-7-3.30





ESTIMATED QUANTITIES

REFERENCE NUMBER	STATION TO STATION	SIDE	642 EDGE LINE MI	642 CENTER LINE MI	644 STOP LINE FT	202 RAISED PAVEMENT MARKER REMOVED EA	SEE SHEET NO.
	174+00 TO 185+25	℄	0.43	0.22	32	12	
	TOTALS TO GEN. SUMMARY		0.43	0.22	32	12	

16/39

MOE-7-3.30

PLAN AND PROFILE
STA. 174+00 TO STA. 178+40

CALCULATED

CHECKED

0 20 10 40
HORIZONTAL SCALE IN FEET

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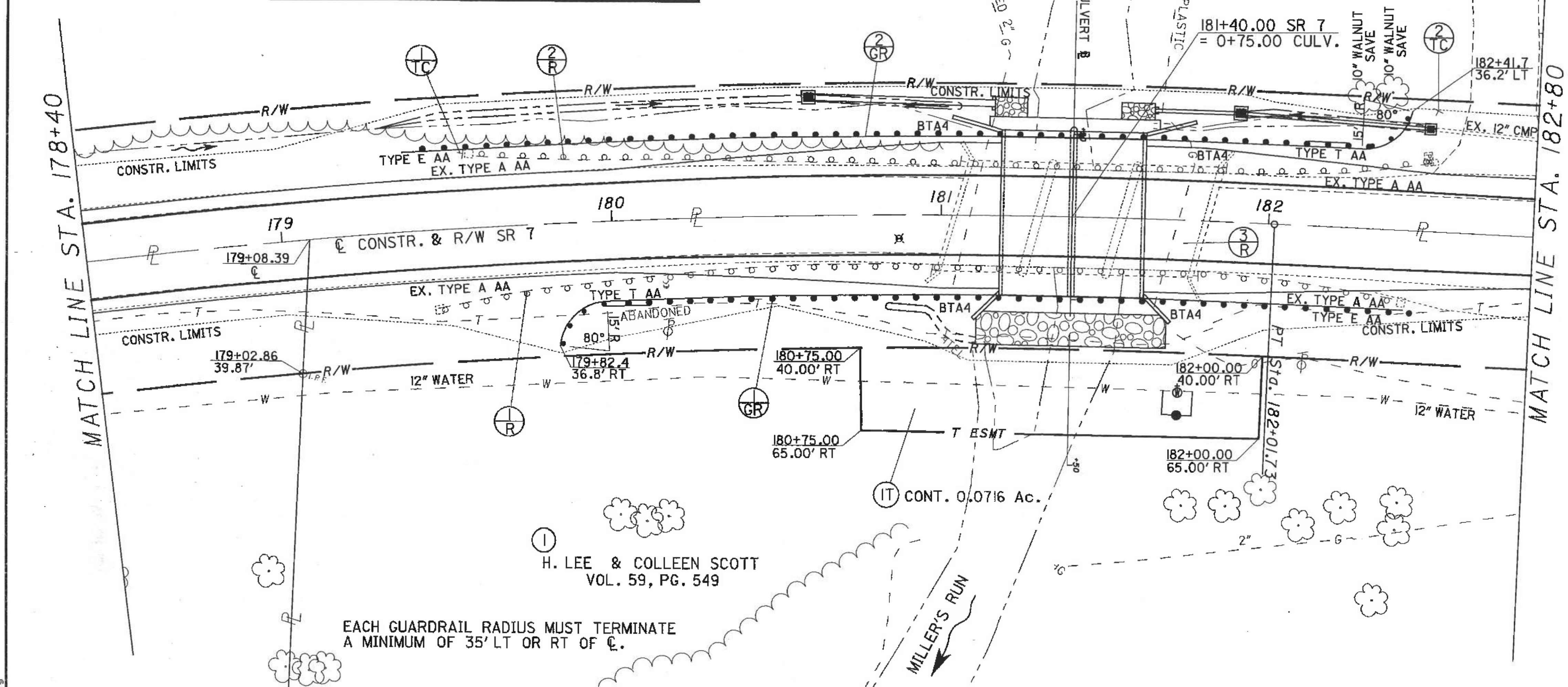
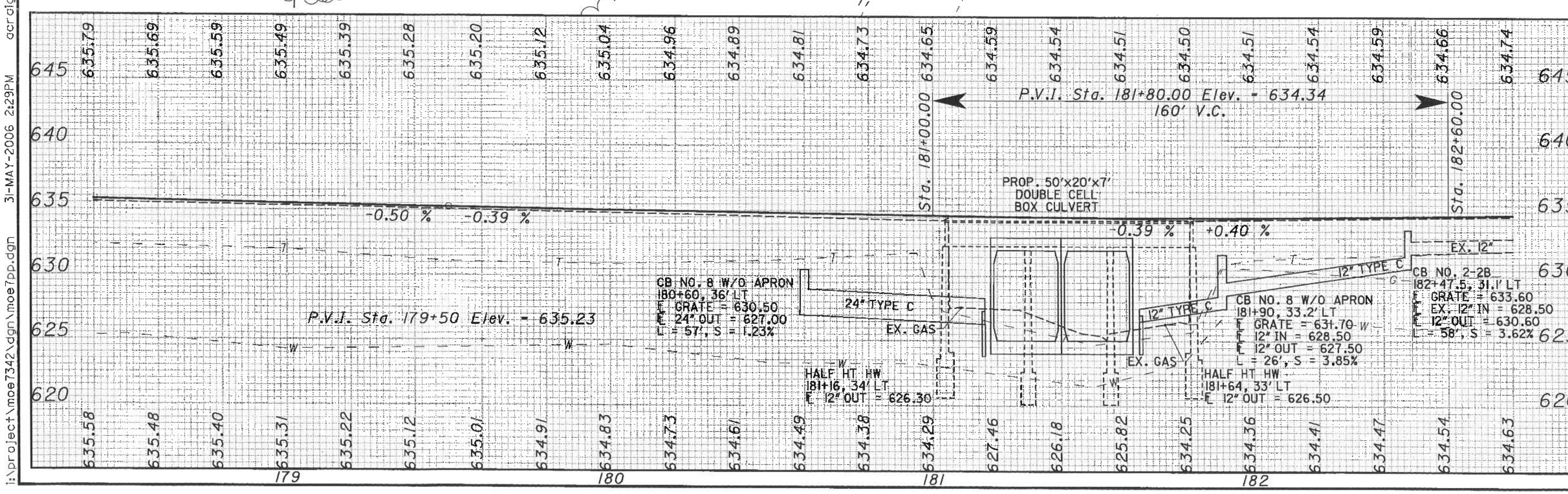
EXISTING STRUCTURE

TYPE: 3 SPAN, 18" THICK REINF. CONCRETE SLAB
ROADWAY: 30'-0" FACE TO FACE GUARDRAIL
SPANS: 24'-0", 24'-0", 24'-0"
ALIGNMENT: 2°39'59" RIGHT CURVE
SKEW: 20°0'0" LEFT FORWARD
LOADING: S-12.1
CROWN: SUPERELEVATED 0.031 MAX.
APPROACH SLABS: NONE
WEARING SURFACE: 6" THICK ASPHALT CONCRETE ON TOP OF 4" THICK CONCRETE WEARING COURSE (SLAB THICKNESS PLUS WEARING SURFACE THICKNESSES = 2'-4")

PROPOSED STRUCTURE

TYPE: DOUBLE CELL PRECAST REINF. CONCRETE BOX CULVERT, 20'-0" x 7'-0" CELLS
ROADWAY: 48'-0" FACE TO FACE GUARDRAIL
LENGTH: 50'-0"
ALIGNMENT: 2°39'59" RIGHT CURVE
SKEW: NONE
LOADING: HS-25 AND ALT. MILITARY LOADING
CROWN: SUPERELEVATED 0.057 MAX.
APPROACH SLABS: NONE
WEARING SURFACE: VARIABLE THICKNESS ASPHALT PAVEMENT TO BE PLACED ON TOP OF THE CULVERT

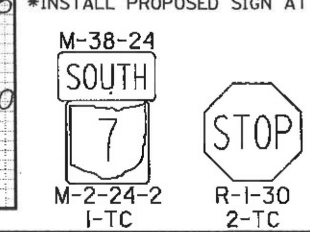




ESTIMATED QUANTITIES

REFERENCE NUMBER	STATION TO STATION	SIDE	202 STRUCTURE REMOVED (LS)	202 GUARDRAIL REMOVED (FT)	202 BRIDGE RAILING REMOVED FOR STORAGE (FT)	517 RAILING (DEEP BEAM W/3 TUB. BACKUPS & STEEL POSTS) (FT)	606 GUARDRAIL, TYPE 5 (FT)	606 ANCHOR ASSEMBLY, TYPE E-98 (EA)	606 ANCHOR ASSEMBLY, TYPE T (EA)	606 BRIDGE TERMINAL ASSEMBLY, TYPE 4 (EA)	626 BARRIER REFLECT., TYPE A2 (EA)	503 UNCLASSIFIED EXCAVATION (LS)	509 EPOXY COATED REINFORCING STEEL (LB)	511 CLASS C CONCRETE, CULVERT (CY)	512 TYPE 2 WATERPROOFING (SY)	512 TYPE 3 WATERPROOFING (SY)	516 1" PREFORMED EXP. JOINT FILLER (SF)	518 POROUS BACKFILL W/FILTER FARIC (CY)	SPEC STEEL DRIP STRIP (FT)	601 RIPRAP USING 6" CONC., A.P.P. (SY)	601 RCP, TYPE A WITH FABRIC FILTER (CY)	601 RCP, TYPE C WITH FABRIC FILTER (CY)	602 CONCRETE MASONRY (CY)	603 12" CONDUIT, TYPE C (FT)	603 24" CONDUIT, TYPE C (FT)	603 20'x7' CONDUIT, TYPE A, 706.05, A.P.P. (FT)	604 CATCH BASIN, NO. 2-2B (EA)	604 CATCH BASIN, NO. 8 W/O APRON (EA)	512 SEALING OF CONC. SURFACES (E-U) (SY)	630 REMOVAL OF GRD MTD POST/DISPOSAL (EA)	630 REMOVAL OF GRD MTD SIGN/DISPOSAL (EA)	630 GRD MTD SUPPORT, NO. 2 POST (FT)	630 SIGN, FLAT SHEET (SF)	SEE SHEET NO.
1-R	179+50 TO 182+42	R		219	75																													
2-R	179+57 TO 182+49	L		219	75																													
3-R	181+40	℄	LS																															
1-GR	180+38.5 TO 182+41.6	R				53.13	150	1	1	2	4																							
2-GR	180+38.4 TO 182+41.5	L				53.13	193.75	1	1	2	4																							
1-D	180+60 TO 181+16	L																				3.2	0.46		57			1						
2-D	181+40	℄										LS	6927	84	100	256	40	16	56	51	75					100			72					27
3-D	181+64 TO 182+47.5	L																				2.8	0.21	84			1	1						
1-TC	179+56*	L																												1	2	12	5	
	BRIDGE OBJECT MARKERS (X-6)	℄																												4	4			
2-TC	182+50	L																												1	1	12	6.25	
TOTALS TO GEN. SUMMARY			LS	438	150	106.26	343.75	2	2	4	8	LS	6927	84	100	256	40	16	56	51	75	6	0.7	84	57	100	1	2	72	6	7	24	11.25	

*INSTALL PROPOSED SIGN AT 181+00 LT



CALCULATED
CHECKED

HORIZONTAL SCALE IN FEET (0, 10, 20, 40)

PLAN AND PROFILE
STA. 178+40 TO STA. 182+80

MOE-7-3.30

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MATCH LINE STA. 182+80

WAYNE NATIONAL FOREST
VOL. 158, PG. 44

PROP. 2" WATER

CISTERN

ASPHALT R/W

GRAVEL

EX. 12" CMP

183

ABANDONED

GRAVEL

183+34.32
39.85' RT

183+76.83
40.56' RT

183+76.74 ℄

END PROJECT
STA. 183+50
SLM 3.48

H. LEE & COLLEEN SCOTT
VOL. 59, PG. 549

184

184+00.95
40.00' LT

184+05.30 ℄

WOVEN WIRE FENCE

JACKSON TWP. TRUSTEES
O.R.. 79, PG. 631

SHELTER

CONSTR. LIMITS

CONSTR. LIMITS

N52°28'29"E

185

GRAVEL

185+26.70
41.70' LT

185+28.56 ℄

END WORK
STA. 185+25

185+88.95 ℄

185+88.97
29.82' RT

ABANDONED

EDNA SUTER & NANCY SMITH
O.R.. 47, PG. 677

SHED

186

℄ CONSTR. & R/W SR 7

GRAVEL

GILBERT & BARBARA WHITEHAIR
O.R.. 61, PG. 638

PROP. 12" WATER

WOVEN WIRE FENCE

EX. TELE.

MICHAEL & REBBECCA LOLLATHIN
VOL. 96, PG. 471

187

183 184 185 186 187

634.63 634.74
634.70 634.82
+10, 634.86
634.77 634.87
634.86 634.89
634.90 +50, 634.90
634.94
635.03
635.15
635.25
635.34
635.40
635.46
635.54
635.62
635.68
635.74
635.82
635.91
636.01
636.10
636.18
636.26

TAPER TO MEET EX. PAVT OVER 40'

+0.40% +0.10%

EX. +0.40%

P.V.I. Sta. 183+10
Elev. = 634.86

620 625 630 635 640 645

ESTIMATED QUANTITIES

REFERENCE NUMBER	STATION TO STATION	SIDE		SEE SHEET NO.
TOTALS TO GEN. SUMMARY				

18/39

MOE-7-3.30

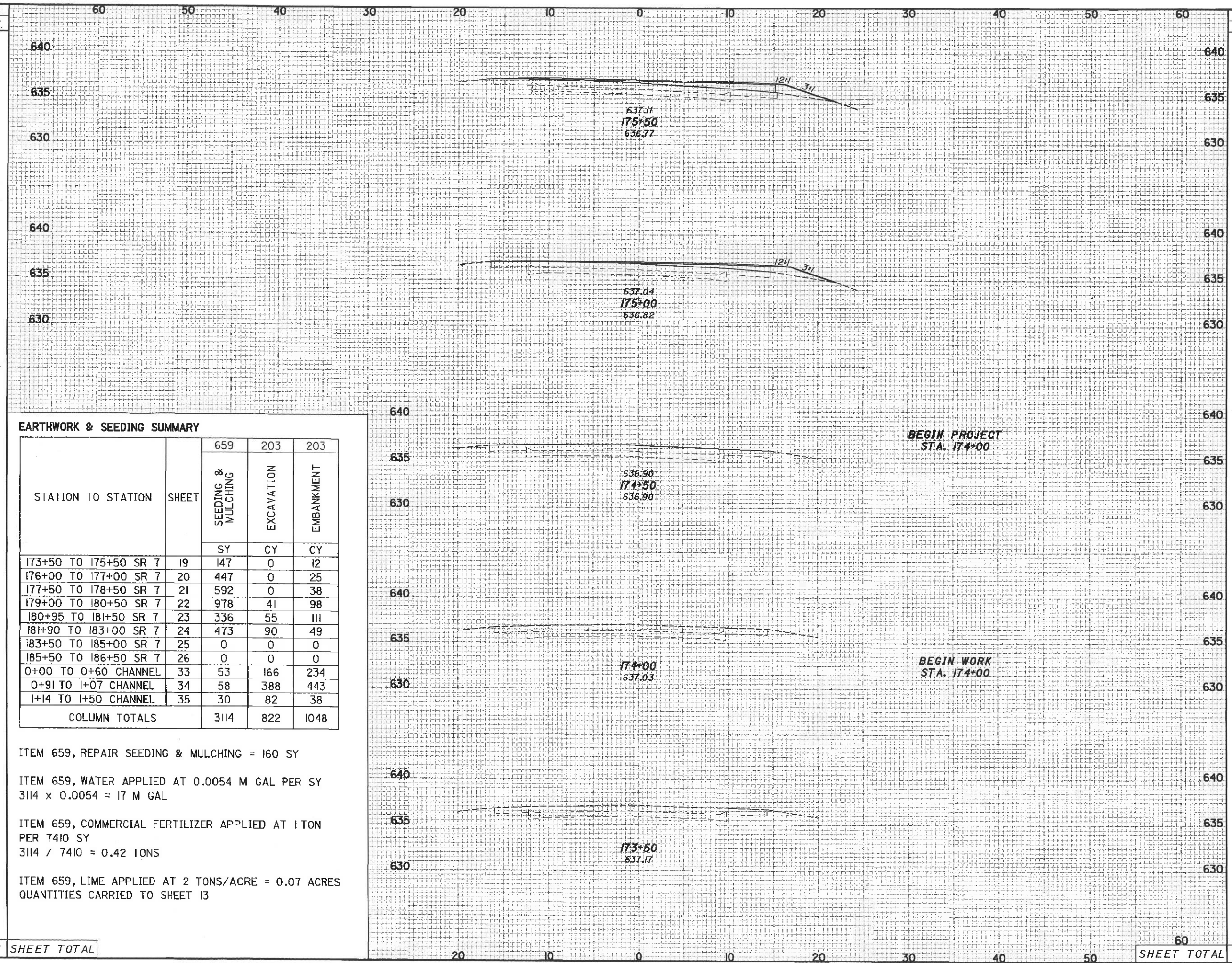
PLAN AND PROFILE
STA. 182+80 TO STA. 187+00

CALCULATED

CHECKED

0 20
10 40
HORIZONTAL SCALE IN FEET

SEEDING END WIDTH	SEEDING SQ. YDS.
17	97
18	50
0	
	147 SHEET TOTAL



END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
0	4	0	8
0	4		
		0	4
0	0		
		0	12
	SHEET TOTAL		

CALCULATED

CHECKED

SR 7 CROSS SECTIONS
STA. 173+50 TO STA. 175+50

MOE-7-3.30

19
39

EARTHWORK & SEEDING SUMMARY

STATION TO STATION	SHEET	659 SEEDING & MULCHING SY	203 EXCAVATION CY	203 EMBANKMENT CY
173+50 TO 175+50 SR 7	19	147	0	12
176+00 TO 177+00 SR 7	20	447	0	25
177+50 TO 178+50 SR 7	21	592	0	38
179+00 TO 180+50 SR 7	22	978	41	98
180+95 TO 181+50 SR 7	23	336	55	111
181+90 TO 183+00 SR 7	24	473	90	49
183+50 TO 185+00 SR 7	25	0	0	0
185+50 TO 186+50 SR 7	26	0	0	0
0+00 TO 0+60 CHANNEL	33	53	166	234
0+91 TO 1+07 CHANNEL	34	58	388	443
1+14 TO 1+50 CHANNEL	35	30	82	38
COLUMN TOTALS		3114	822	1048

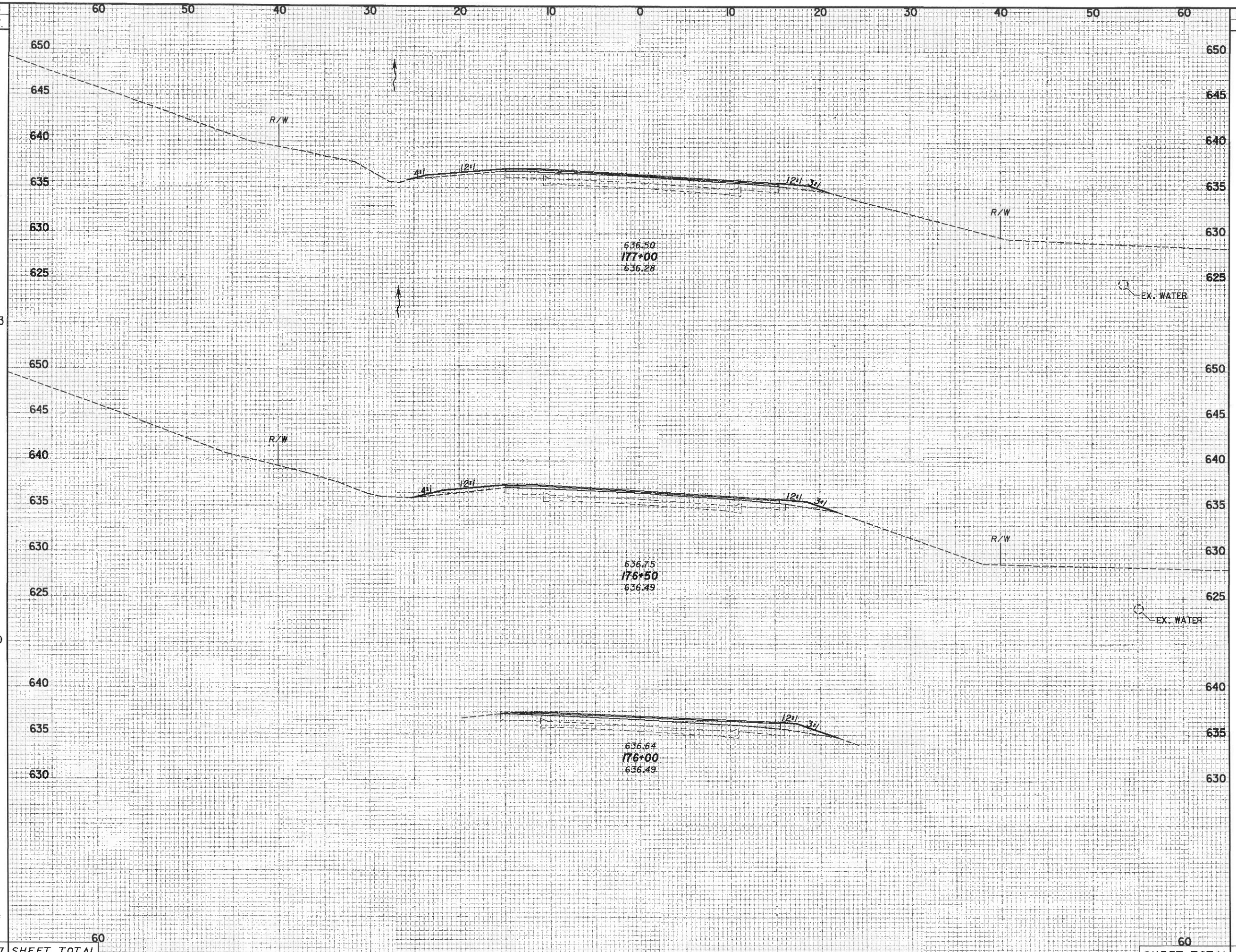
ITEM 659, REPAIR SEEDING & MULCHING = 160 SY

ITEM 659, WATER APPLIED AT 0.0054 M GAL PER SY
3114 x 0.0054 = 17 M GAL

ITEM 659, COMMERCIAL FERTILIZER APPLIED AT 1 TON PER 7410 SY
3114 / 7410 = 0.42 TONS

ITEM 659, LIME APPLIED AT 2 TONS/ACRE = 0.07 ACRES
QUANTITIES CARRIED TO SHEET 13

SEEDING END WIDTH	SEEDING SQ. YDS.
36	203
37	150
17	94
	447



END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
0	5		
		0	10
0	6		
		0	8
0	3		
		0	7
SHEET TOTAL		0	25

CALCULATED

CHECKED

SR 7 CROSS SECTIONS
STA. 176+00 TO STA. 177+00

MOE-7-3.30

20
39

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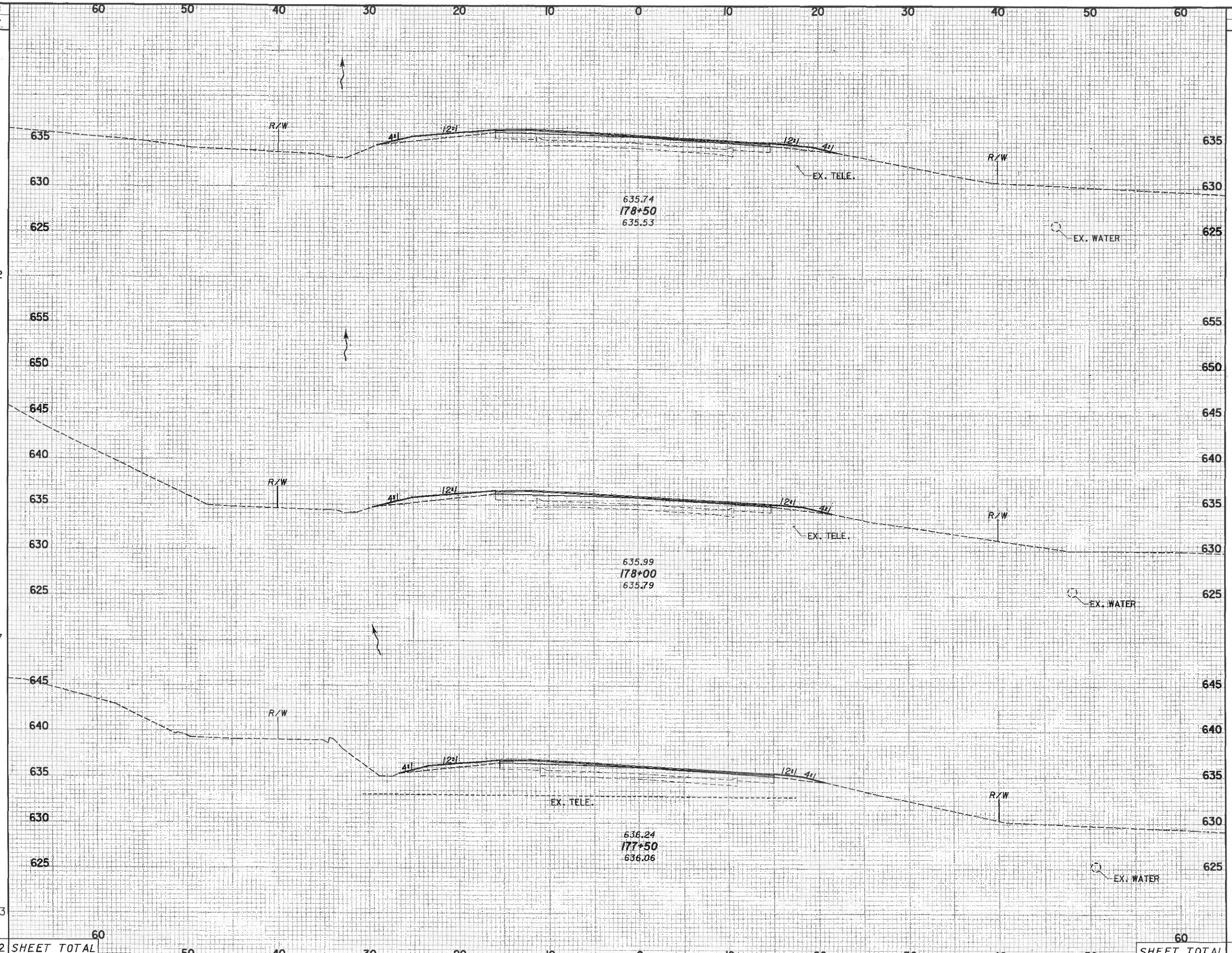
SEEDING END WIDTH	SEEDING SQ. YDS.
21	
	172
41	
	217
37	
	203
	592



END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
0	8		
		0	15
0	8		
		0	13
0	6		
		0	10
		0	38

SHEET TOTAL

CALCULATED

CHECKED

SR 7 CROSS SECTIONS
STA. 177+50 TO STA. 178+50

MOE-7-3.30

21
39

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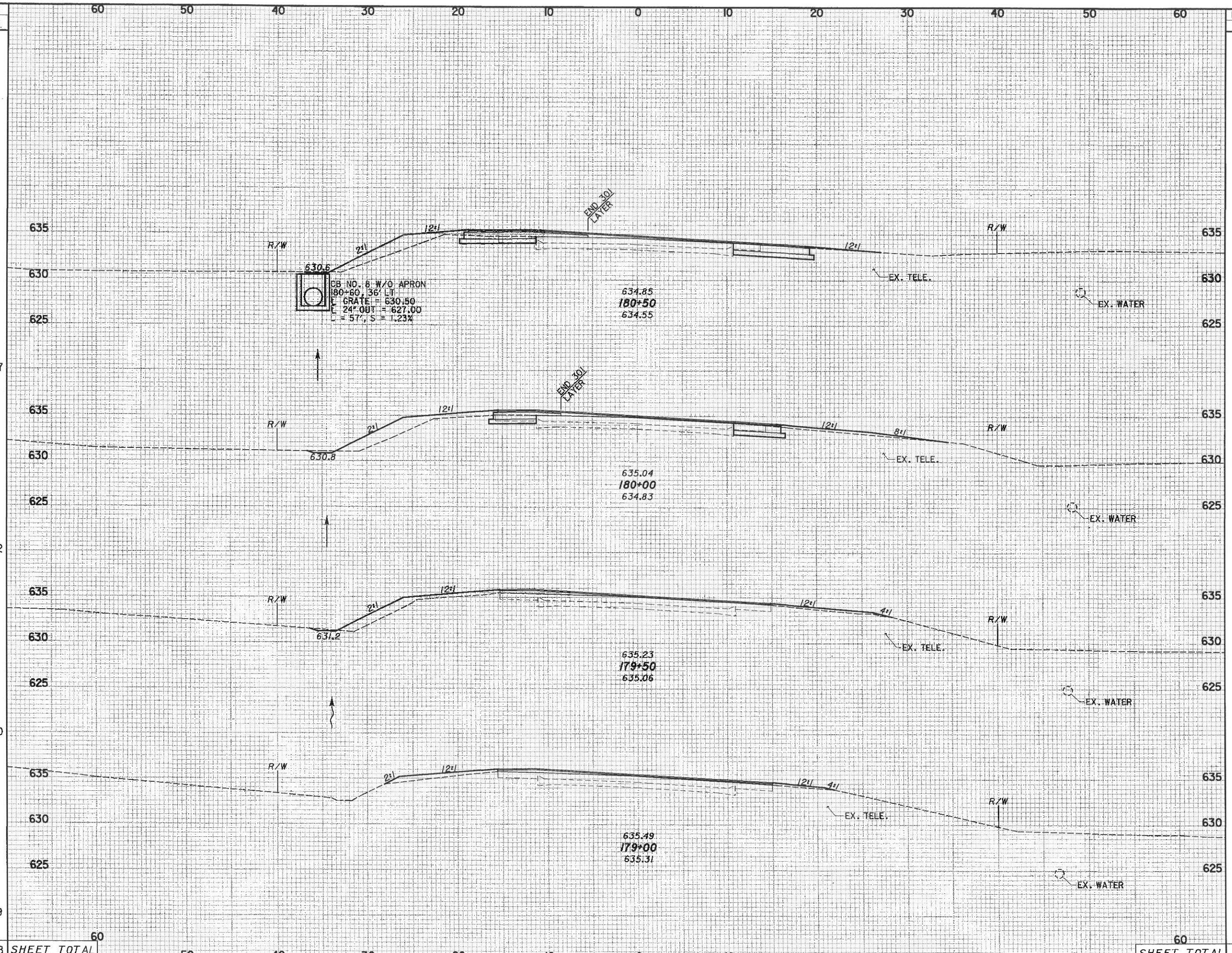
SEEDING END WIDTH	SEEDING SQ. YDS.
41	267
55	292
50	250
40	169
	978



END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
18	14	28	32
12	20	12	32
1	15	1	20
0	7	0	14
		41	98

SHEET TOTAL

CALCULATED

CHECKED

SR 7 CROSS SECTIONS
STA. 179+00 TO STA. 180+50

MOE-7-3.30

22
39

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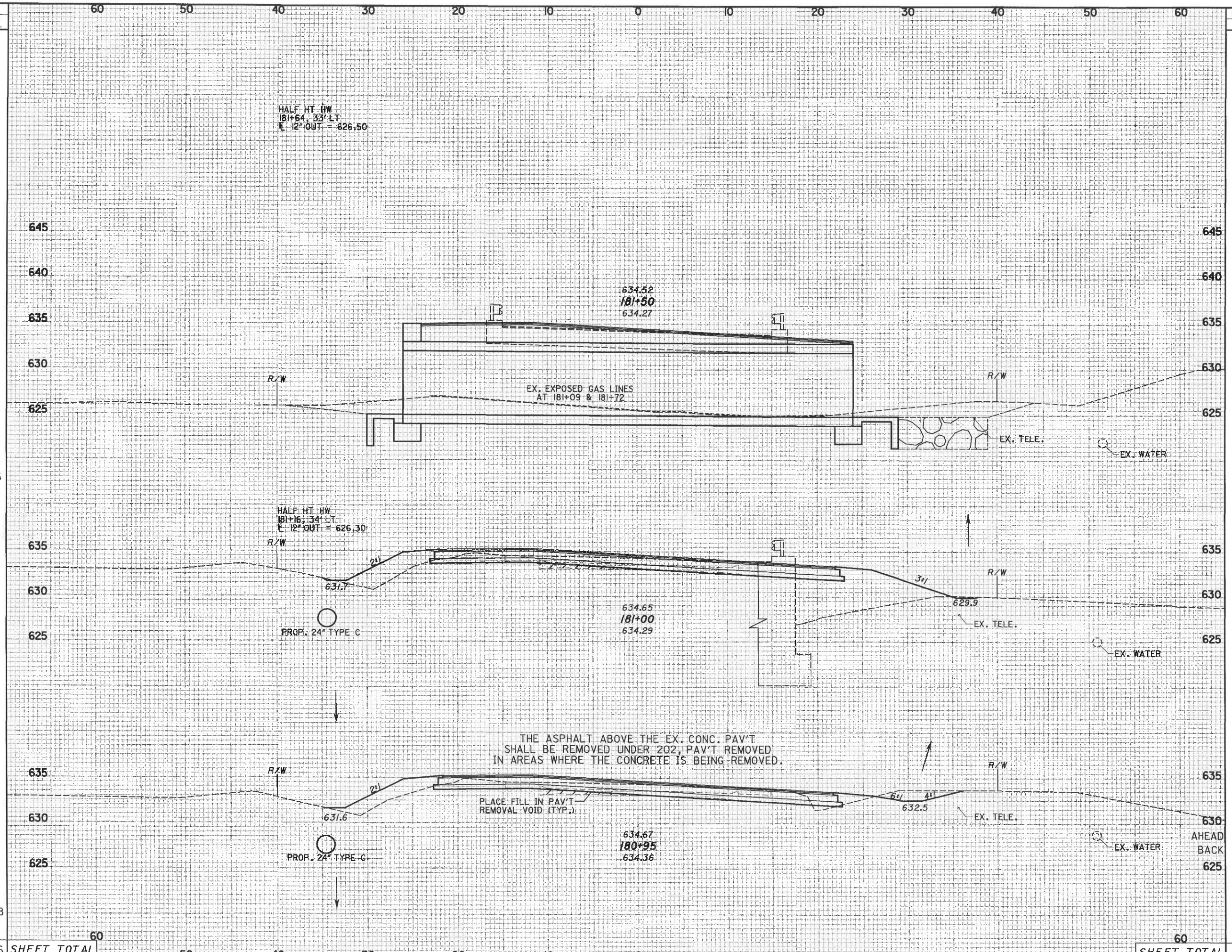
SEEDING	
END WIDTH	SQ. YDS.
0	
	106
	38
	22
	42
	208
	336



END AREA		VOLUME	
CUT	FILL	CUT	FILL
0	0		
		13	73
14	79		
		4	10
AHEAD 28	24		
BACK 28	20		
		38	28
		55	111

CALCULATED

CHECKED

SR 7 CROSS SECTIONS
STA. 180+95 TO STA. 181+50

MOE-7-3.30

23
39

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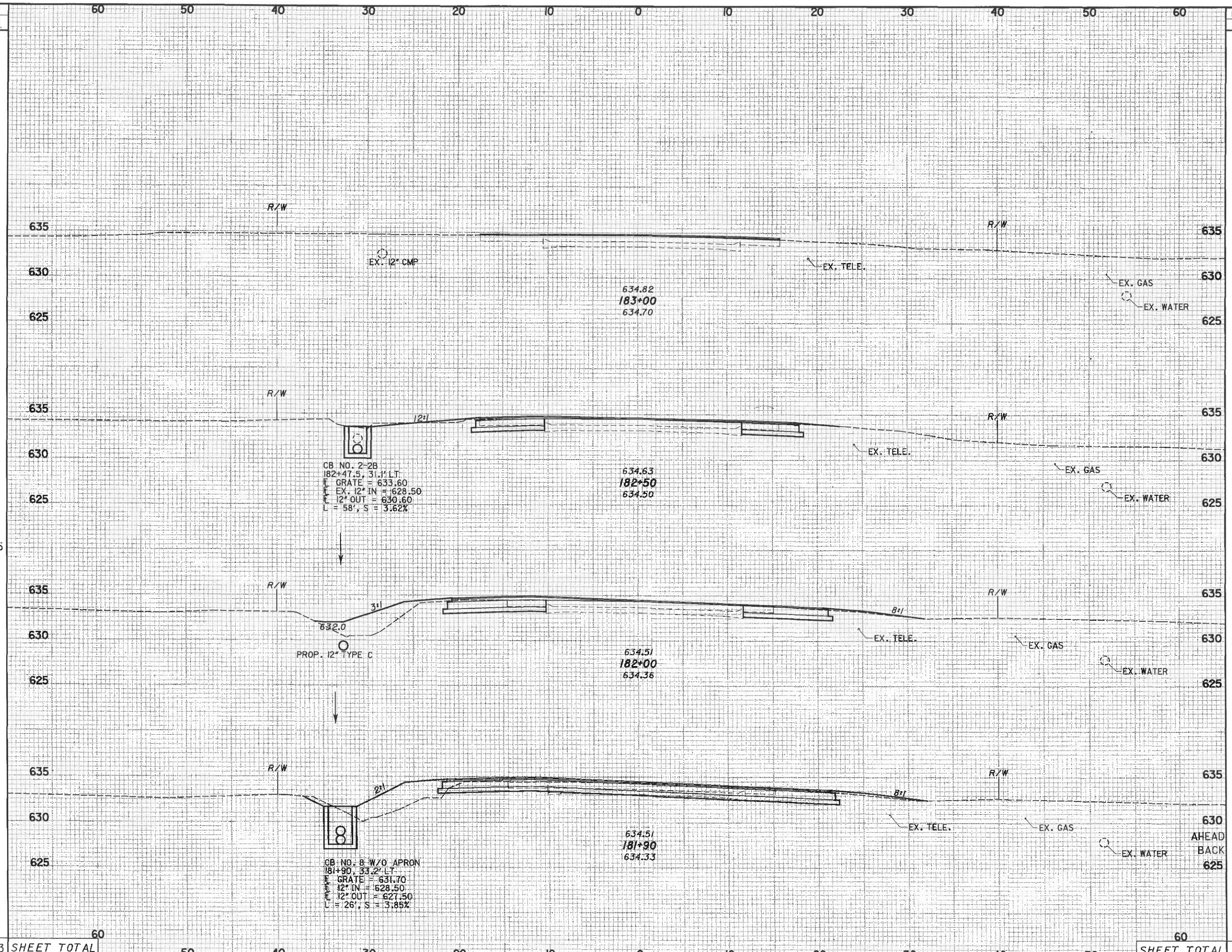
SEEDING END WIDTH	SEEDING SQ. YDS.
0	
	111
40	
	225
41	
	46
41	
	91
	473



END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
0	0		
		18	2
19	2		
		42	20
26	20		
		10	8
		20	19
AHEAD 27	25		
BACK 27	26		
473 SHEET TOTAL		90	49

CALCULATED

CHECKED

SR 7 CROSS SECTIONS
STA. 181+90 TO STA. 183+00

MOE-7-3.30

24
39

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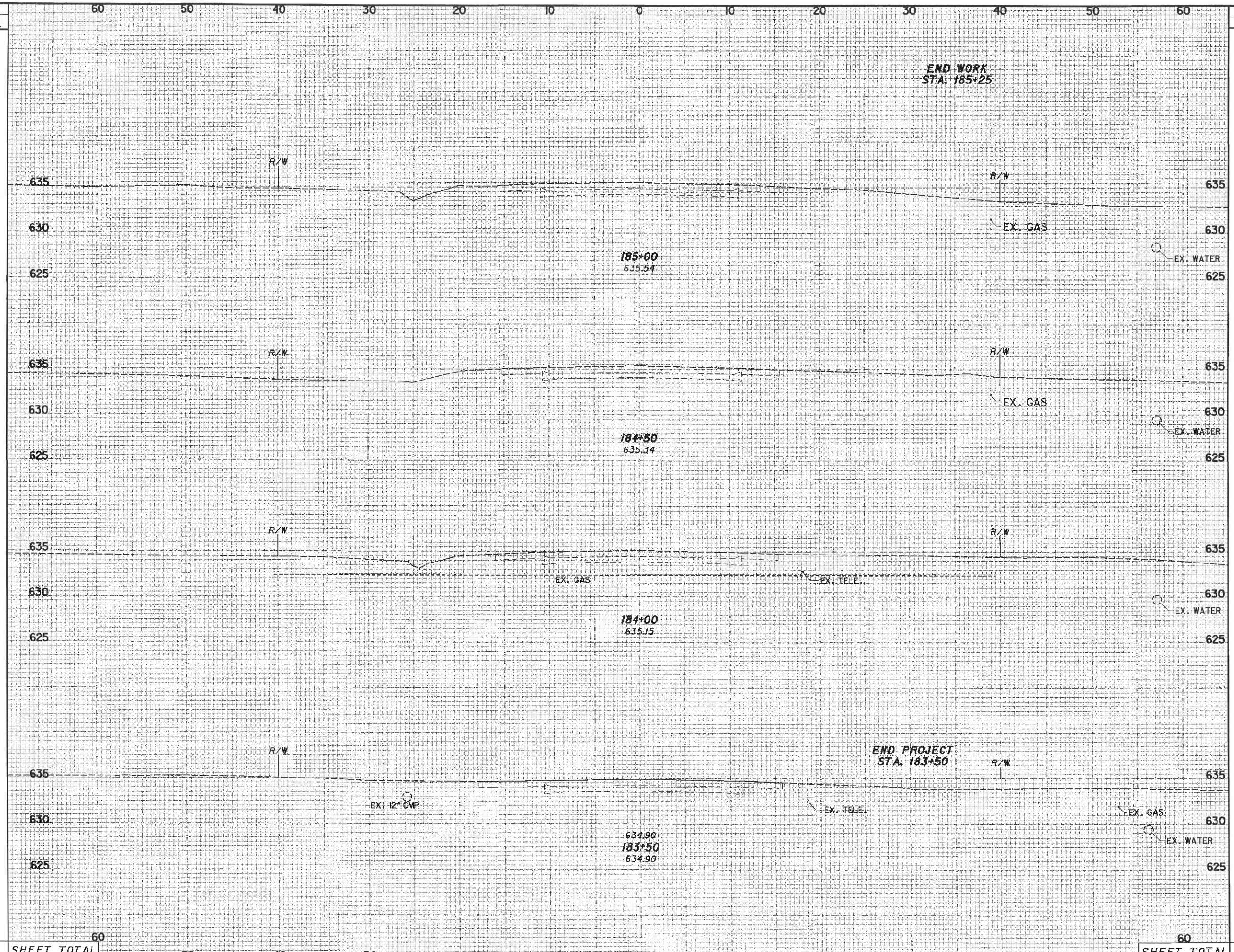
SEEDING	
END WIDTH	SQ. YDS.
	0
	0
0	SHEET TOTAL

END AREA		VOLUME	
CUT	FILL	CUT	FILL
		0	0
		0	0
0	0		

CALCULATED

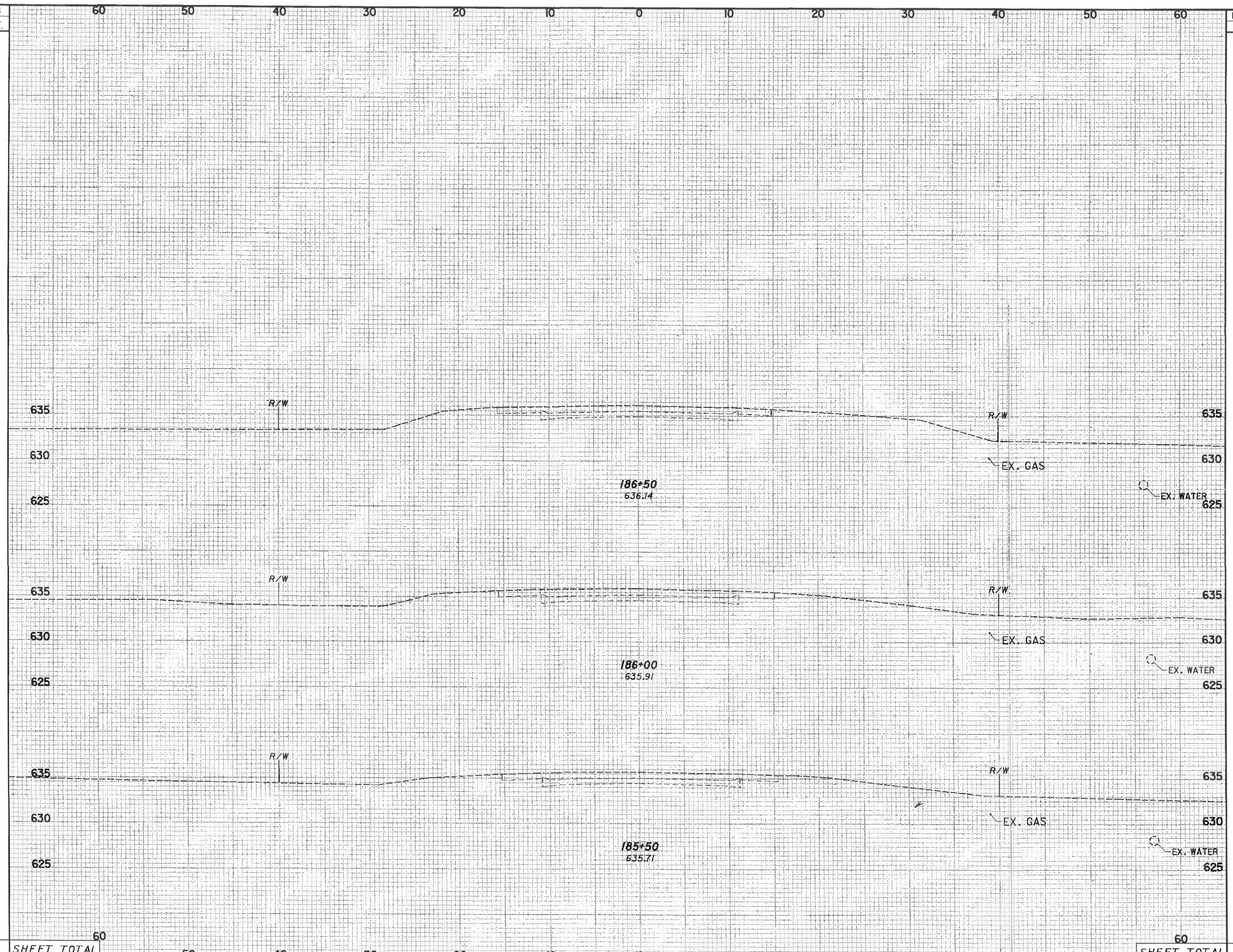
CHECKED



SR 7 CROSS SECTIONS
STA. 183+50 TO STA. 185+00

MOE-7-3.30

SEEDING	
END WIDTH	SQ. YDS.
0	SHEET TOTAL



END AREA		VOLUME	
CUT	FILL	CUT	FILL
		0	0

CALCULATED

CHECKED

SR 7 CROSS SECTIONS
STA. 185+50 TO STA. 186+50

MOE-7-3.30

26
39

DRAINAGE AREA = 2290 ACRES
Q25 = 1230 CFS
Q50 = 1500 CFS
Q100 = 1760 CFS
V25 = 12.4 FPS
V50 = 13.3 FPS
V100 = 13.4 FPS
HW25 = 629.9
HW50 = 630.7
HW100 = 630.8

PT Sta. 182+01.73

182

1.5" PLASTIC

RCP, TYPE C W/FF
L=10', W=5', T=1.5'

181+40.00 SR 7
= 0+75.00 CULV.

0 CULV. ℄
S39°10'18"E

+50

90° TO TAN.

RCP, TYPE C W/FF
L=10', W=5.75', T=1.5'

ABANDONED 2" G

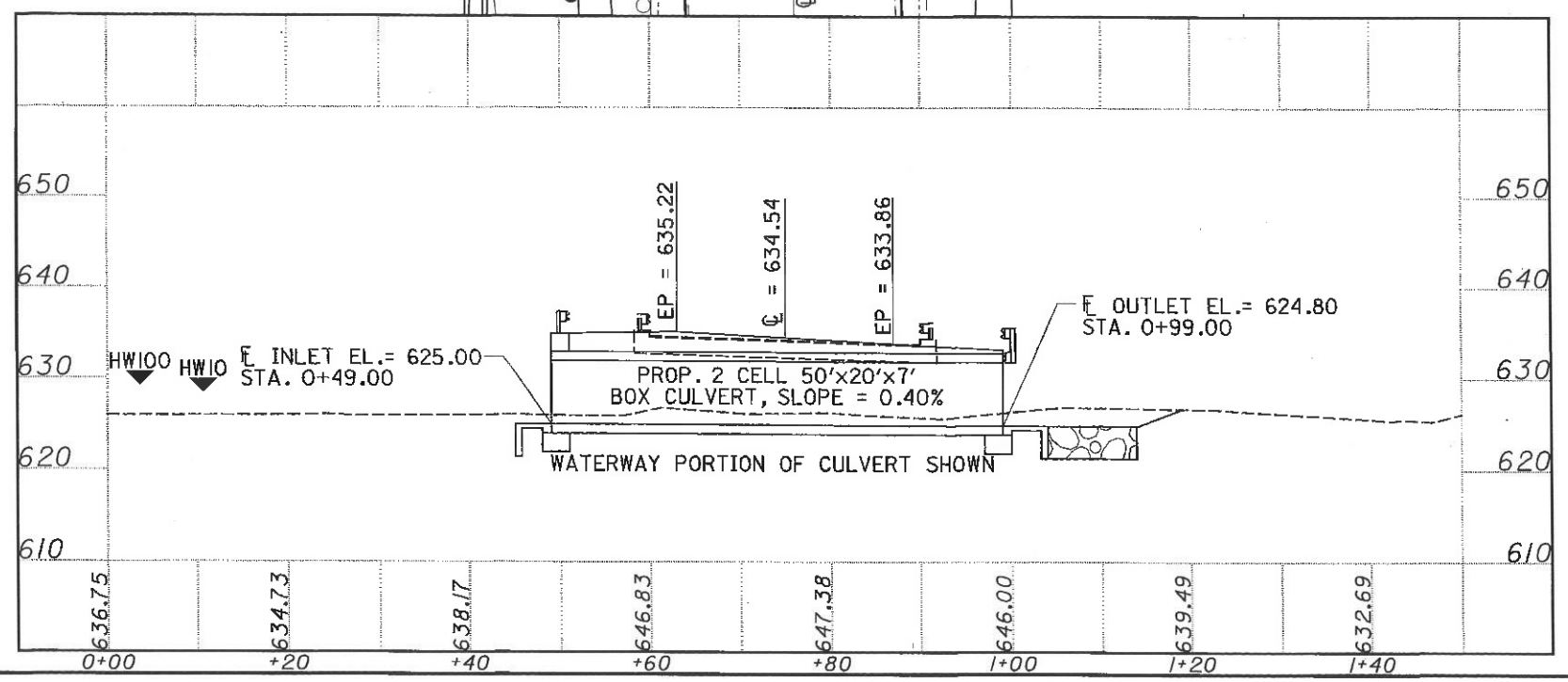
RCP, TYPE A W/FF
L=10', W=58' MAX.,
T=3.5'

MILLER'S RUN

181

℄ CONSTR. & R/W SR 7

PROPOSED 12" WATERLINE



ITEM 503, UNCLASSIFIED EXCAVATION = LUMP SUM
ITEM 601, ROCK CHANNEL PROTECTION, TYPE A WITH FABRIC FILTER = 75 CY
ITEM 603, 20' x 7' CONDUIT, TYPE A, 706.05, A.P.P. = 100 FEET
FOR ADDITIONAL QUANTITIES, SEE HEADWALL DETAIL SHEET 29
QUANTITIES CARRIED TO SHEET 17

HORIZONTAL SCALE IN FEET
0 5 10 20
CALCULATED
CHECKED

CULVERT DETAIL

MOE-7-3.30

27
39

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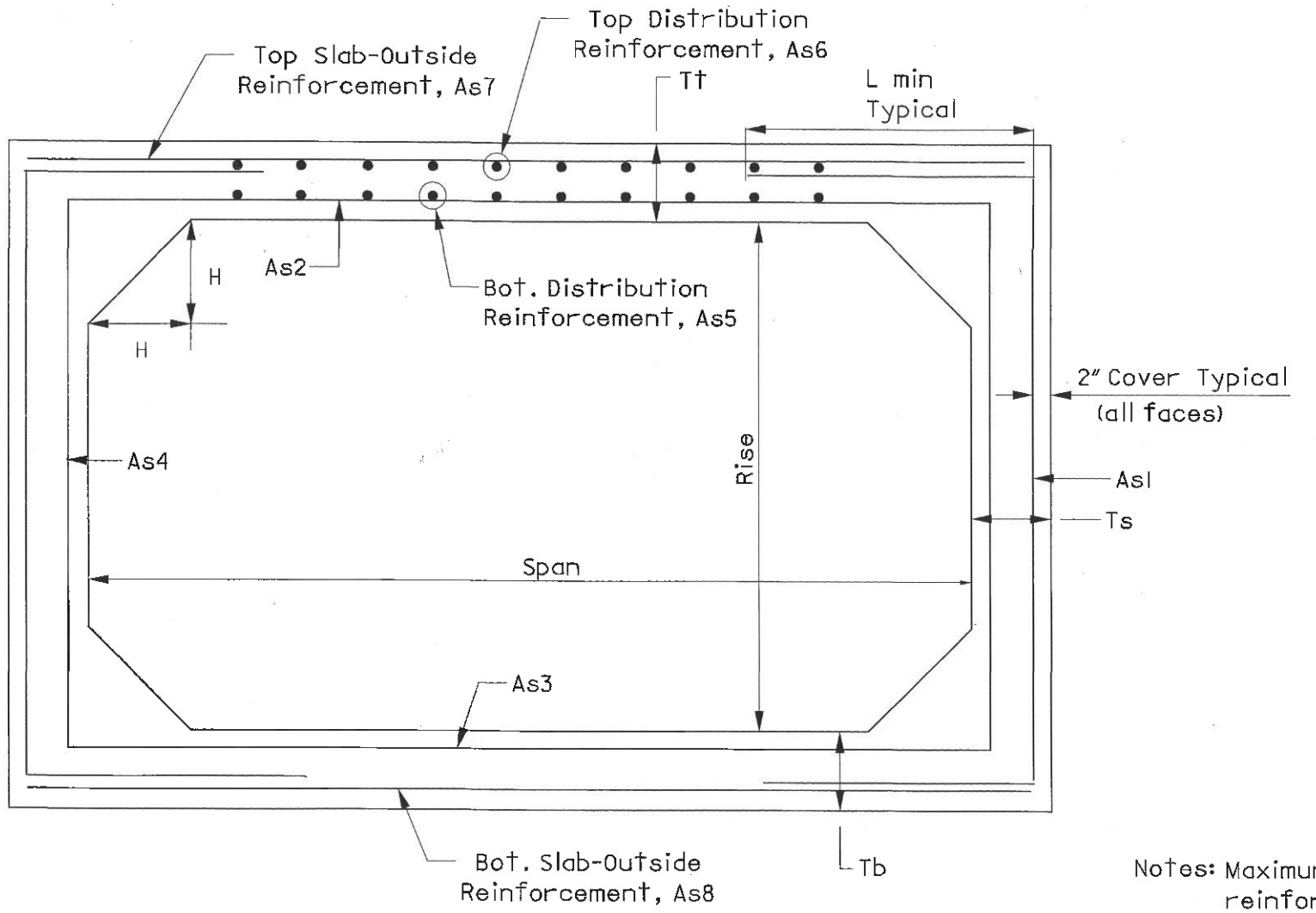
ITEM 603 - 20'x7' CONDUIT, TYPE A, 706.05, AS PER PLAN

1. ALL REQUIREMENTS OF 706.05 AND ASTM C1433 SHALL BE MET EXCEPT AS DETAILED HEREIN.
2. THE FIRST BOX SECTION AT THE INLET AND THE LAST BOX SECTION AT THE OUTLET SHALL BE A MINIMUM OF 6 FEET LONG AND THE EXPOSED ENDS SHALL BE CAST WITH FLUSH ENDS (NO BELL & SPIGOT).
3. GUARDRAIL POST ANCHORS SHALL BE CAST INTO THE BOX CULVERT. SEE THE DETAILS ON SHEET 30.
4. MECHANICAL CONNECTORS SHALL BE CAST INTO THE BOX CULVERT. SEE THE DETAILS ON SHEETS 31 AND 32.



Loading: HS25 & ALT. MILITARY
Depth of Cover = 1.5 to 2.5'
FWS = 60 psf

Span	20'
Rise	7'
Tt	12"
Tb	12"
Ts	12"
H	12"
As1	1.32
As2	1.6
As3	1.32
As4	0.29
As5	0.29
As6	0.29
As7	0.29
As8	0.29
L min	66"

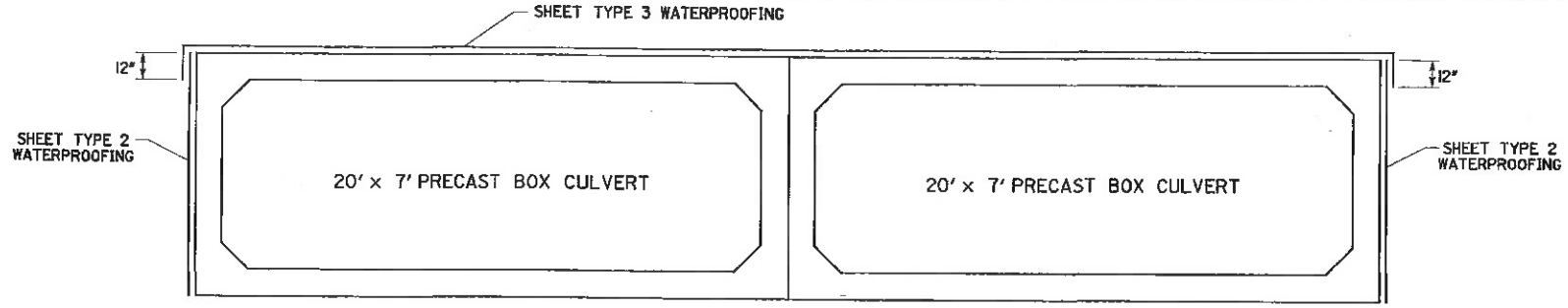
Notes: Maximum spacing of the circumferential reinforcing shall be 4".
Minimum yield strength for reinforcing shall be 60 ksi.
Minimum concrete compressive strength shall be 5000 psi.
As min = 0.002 X Gross Section Area

CALCULATED | CHECKED

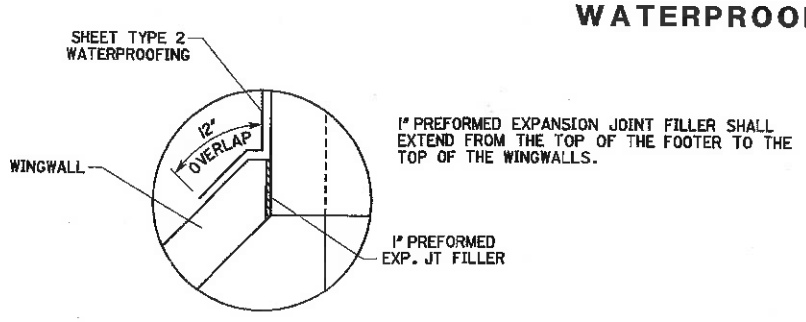
CULVERT DETAIL

MOE-7-3.30

28
39

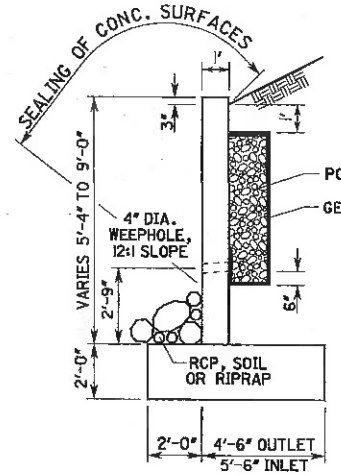


WATERPROOFING LIMITS



1" PREFORMED EXPANSION JOINT FILLER SHALL EXTEND FROM THE TOP OF THE FOOTER TO THE TOP OF THE WINGWALLS.

DETAIL A



SEAL THE INLET AND OUTLET BOX CULVERT FACES ALSO. SEALER COLOR SHALL BE FEDERAL COLOR NO. 17778.

POROUS BACKFILL, 1.5' THICK, SHALL BE PLACED BEHIND THE WINGWALLS AND SHALL EXTEND TO 1' BELOW THE EMBANKMENT SURFACE. GEOTEXTILE FABRIC SHALL BE PLACED BETWEEN THE POROUS BACKFILL AND REPLACED EXCAVATION ADJACENT TO THE STRUCTURE. IT SHALL TURN UNDER THE BOTTOM OF THE POROUS BACKFILL AND RETURN 6" ABOVE THE WEEPHOLE. IT SHALL WRAP OVER THE TOP.

POROUS BACKFILL & SEALING DETAIL

ITEM 601 - RIPRAP USING 6" REINFORCED CONCRETE SLAB, AS PER PLAN

CONSTRUCT AS PER STANDARD DRAWING DM-1.1 EXCEPT FOR THE FOLLOWING:

1. THE CUTOFF WALL SHALL BE 3'-6" TALL INSTEAD OF 2'-6".

2. WHEN THE CULVERT FOOTER IS WITHIN 6" OF THE BOTTOM OF THE RIPRAP PAD, INCREASE THE THICKNESS OF THE PAD TO 12" WHERE THE PAD IS OVER THE FOOTER. SEE SECTION C-C ON SHEET 30 FOR THIS DETAIL.

ITEM SPECIAL - STEEL DRIP STRIP

PLACE DRIP STRIP ON THE OUTLET END ONLY AS PER STANDARD DRAWING DS-1-92.

CALCULATIONS

ITEM 511, CLASS C CONCRETE, CULVERT
OUTLET FOOTER: [2 x 6.5' x (11.25' + 10.8333')/2 + 4.25' x (40.3333' + 50.1667')/2] x 2' = 671.7 CF
OUTLET WINGWALLS: [(5.3333' + 9')/2 x 10.75' x 1' + 0.4142 SF x 9'] x 2 = 161.5 CF
INLET FOOTER: [19.6667' x 7.5' x 2 + 1.5' x 5' + 4.25' x (36' + 38.1667')/2] x 2' = 905.2 CF
INLET WINGWALLS: [(9' + 11')/2 x 15.5' x 1' + 0.4142 SF x 11'] x 2 = 319.1 CF
NOSE: [(3.14159 x 1' x 1')/2 + 0.2917' x 2'] x 7' = 15.1 CF
INLET HEADWALL: 44' x 2' x 2' = 176 CF
TOTAL: (671.7 CF + 161.5 CF + 905.2 CF + 319.1 CF + 15.1 CF + 176 CF) ÷ 27 = 83.3 CY

ITEM 512, TYPE 2 WATERPROOFING
9' x 50' x 2 SIDES ÷ 9 = 100 SY

ITEM 512, TYPE 3 WATERPROOFING
46' x 50' ÷ 9 = 256 SY

ITEM 516, 1" PREFORMED EXPANSION JOINT FILLER
(1' x 9' + 1' x 11') x 2 = 40 SF

ITEM 518, POROUS BACKFILL WITH FILTER FABRIC
OUTLET: 2 x [1.5' x 10.75' x (1.75' + 5.4167')/2 + 0.83' x 5.4167'] = 124.6 CF
INLET: 2 x [1.5' x 15.5' x (5.4167' + 7.4167')/2) + (1.5' x 7.4167' x 0.27')] = 304.4 CF
TOTAL: (304.4 CF + 124.6 CF) ÷ 27 = 15.9 CY

ITEM SPECIAL, STEEL DRIP STRIP
OUTLET: 44' ÷ 8 GR POSTS x 1.5' = 56 FEET

ITEM 601, RIPRAP USING 6" REINFORCED CONCRETE SLAB, A.P.P.
OUTLET: [42' + 2((1' + 5'1/2 + COSINE 26.57°)] x 5' = 249.1 SF
INLET: 42' x 4' = 2.15 SF (BULLNOSE) + (2 x 1.07' x (1' + 5'1/2 + COSINE 26.57°) + (2 x 2.93' x 5'/COSINE 26.57°) = 163.8 SF
TOTAL: (249.1 SF + 163.8 SF) ÷ 9 = 46 SY

ITEM 512, SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)
OUTLET WINGWALLS: (7.5' x 10.75'/2 x 2 + (11.36' x 1' + 0.4142 SF) x 2 + (1' x 0.25') x 2 + (11.36' + 0.83') x 0.25' x 2= 110.8 SF
FACE TOP SIDES BACK
BOX CULVERT AT OUTLET: 75.5 SF (FACE)
INLET WINGWALLS: (9.5' x 15.5'/2 x 2 + (15.63' x 1' + 0.1333 SF) x 2 + (1' x 0.25') x 2 + (15.63' + 0.27') x 0.25' x 2= 187.3 SF
FACE TOP SIDES BACK
INLET HEADWALL: 44' x (2' (FACE) + 2' (TOP)) = 176.0 SF
BULLNOSE: [(3.14159 x 1' + 0.2917' x 2) (SIDES) + ((3.14159 x 1' x 1')/2 + 0.2917' x 2') (TOP)] x 6' = 35.3 SF
BOX CULVERT AT INLET: 63.5 SF (FACE)
TOTAL: (110.8 SF + 75.5 SF + 187.3 SF + 176.0 SF + 35.3 SF + 63.5 SF) ÷ 9 = 72.0 SY

QUANTITIES CARRIED TO SHEET 17

CAST MECHANICAL CONNECTOR IN BOX CULVERT WALL →

CAST MECHANICAL CONNECTOR IN BOX CULVERT WALL →

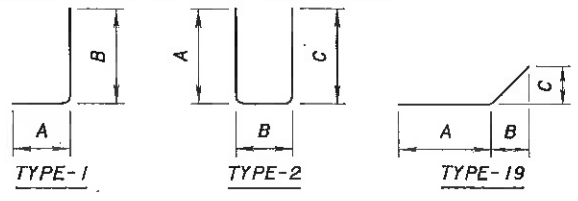
INLET REINFORCING STEEL LIST

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	INCR.
W511	24	15'-2"	380	STR				
W512	4	12'-9"	53	STR				
W513	4	15'-3"	64	STR				
	2	8'-8"						
W514	SER.	TO	222	STR				2 3/8"
	OF 11	10'-8"						
	2	8'-8"						
W611	SER.	TO	319	STR				2 3/8"
	OF 11	10'-8"						
F605	44	3'-9"	248	STR				
F611	34	7'-0"	358	STR				
F612	18	18'-8"	505	STR				
F603	4	14'-3"	86	19	11'-4"	2'-1"	2'-1"	
F604	2	13'-3"	40	19	10'-4"	2'-1"	2'-1"	
F613	8	5'-3"	63	STR				
F614	8	42'-0"	505	STR				
F615	2	4'-6"	14	STR				
F701	42	8'-8"	744	1	2'-4"	6'-6"		
H501	58	4'-7"	277	2	1'-8"	1'-6"	1'-8"	
H502	116	1'-8"	202	STR				
H503	58	2'-8"	*	2	4 5/8"	1'-6"	4 5/8"	
H504	7	43'-8"	319	STR				
N501	4	6'-5"	27	STR				
N502	4	2'-7"	11	2	11 1/2"	1'-2"	8 1/2"	
N503	4	7'-1/2"	29	1	2'-3"	4'-11"		
N504	1	2'-6"	3	2	8 1/2"	1'-2"	8 1/2"	
INLET STEEL QTY.			4469	POUNDS				

*PAYMENT FOR THIS STEEL SHALL BE INCLUDED IN THE BOX CULVERT PRICE.
PAYMENT FOR MECHANICAL CONNECTORS SHALL BE INCLUDED IN THE BOX CULVERT PRICE.

OUTLET REINFORCING STEEL LIST

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	INCR.
W501	16	10'-6"	176	STR				
	4	3'-0"						
W502	SER.	TO	44	STR				4'-4"
	OF 2	7'-4"						
W503	4	11'-1"	47	STR				
	2	5'-1"						
W504	SER.	TO	114	STR				6"
	OF 8	8'-7"						
	2	5'-1"						
W601	SER.	TO	165	STR				6"
	OF 8	8'-7"						
F601	16	6'-0"	145	STR				
F602	16	10'-4"	248	STR				
F603	4	14'-3"	86	19	11'-4"	2'-1"	2'-1"	
F604	2	13'-3"	40	19	10'-4"	2'-1"	2'-1"	
F605	56	3'-9"	316	STR				
	4	1'-6"						
F606	SER.	TO	26	STR				1'-3"
	OF 2	2'-9"						
F607	4	21'-8"	131	STR				
	4	24'-6"						
F608	SER.	TO	460	STR				1'-0"
	OF 3	26'-6"						
F701	30	8'-8"	531	1	2'-4"	6'-6"		
OUTLET STEEL QTY.			2529	POUNDS				

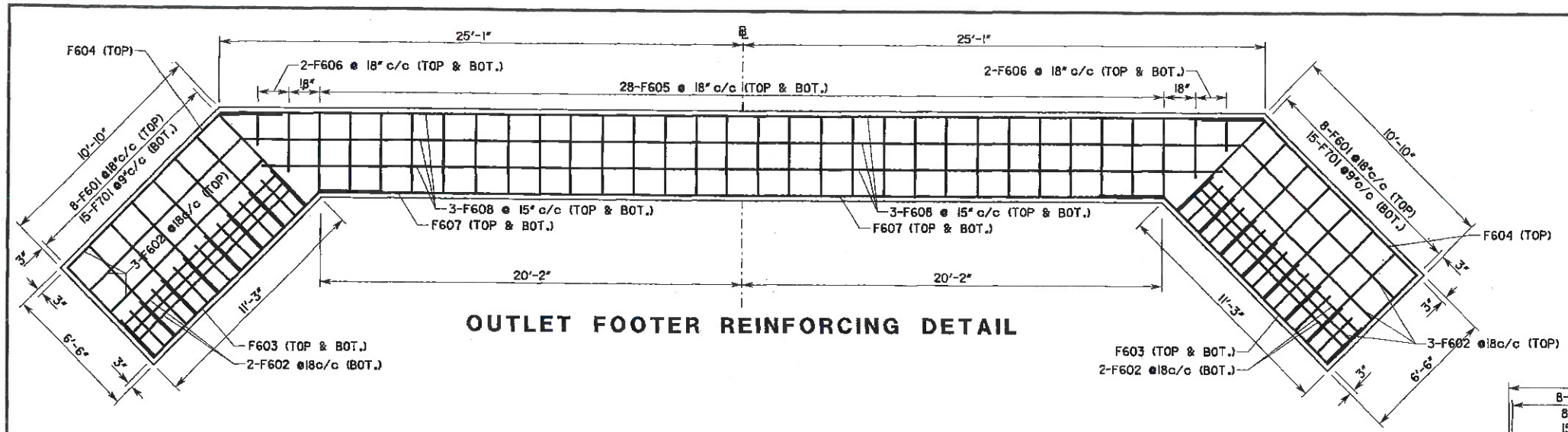


CALCULATED | CHECKED

DOUBLE CELL BOX CULVERT DETAILS

20' x 7' PRECAST

MOE-7-3.30

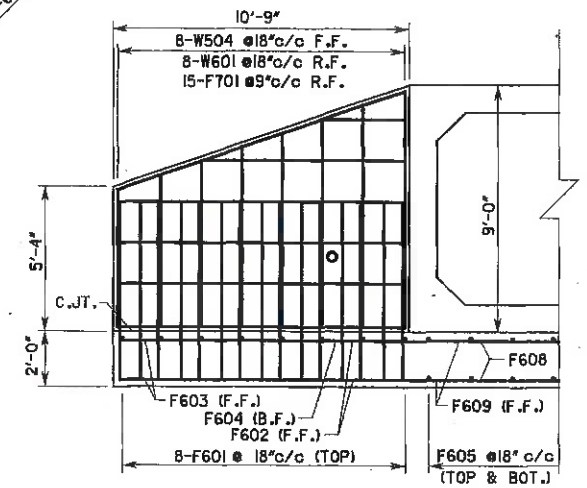


OUTLET FOOTER REINFORCING DETAIL

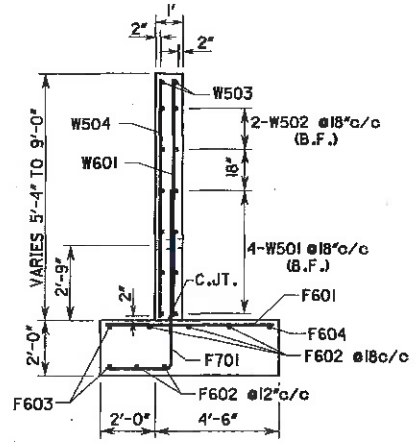
MINIMUM REBAR COVER
WINGWALL: 2" CLEARANCE
FOOTER: 2" CLEARANCE TOP, 3" CLEARANCE BOTTOM & SIDES

ABBREVIATIONS
F.F. = FRONT FACE
R.F. = REAR FACE
B.F. = BOTH FACES
C.JT. = CONSTRUCTION JOINT
MECH. CON. = MECHANICAL CONNECTOR

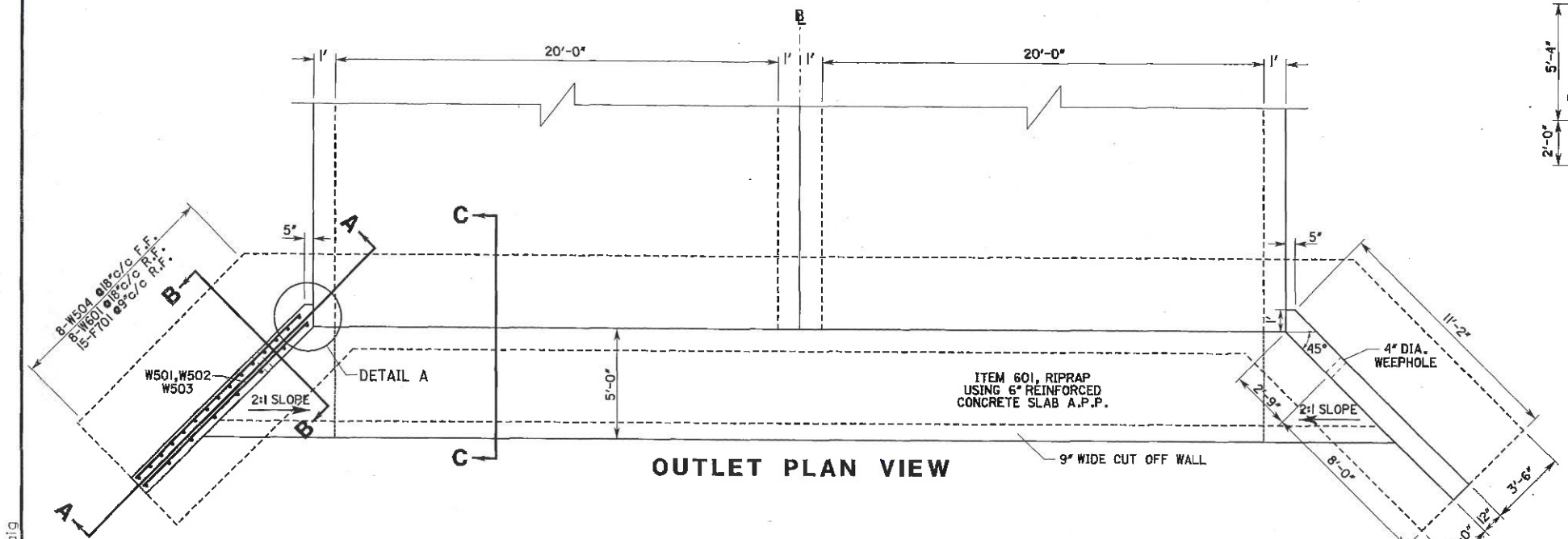
USE A $\frac{3}{4}$" CHAMFER ON ALL EXPOSED OUTSIDE CORNERS



SECTION A-A

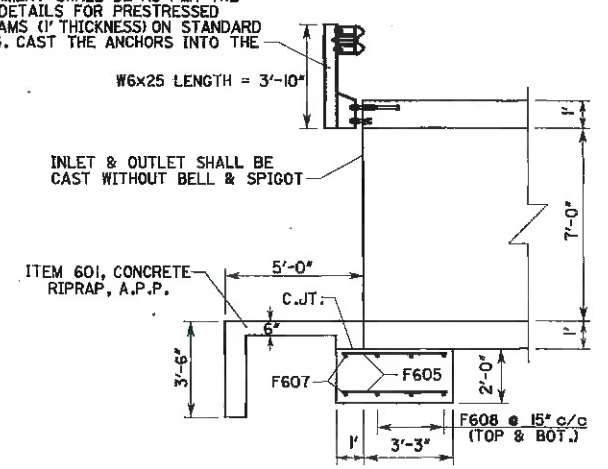


SECTION B-B



OUTLET PLAN VIEW

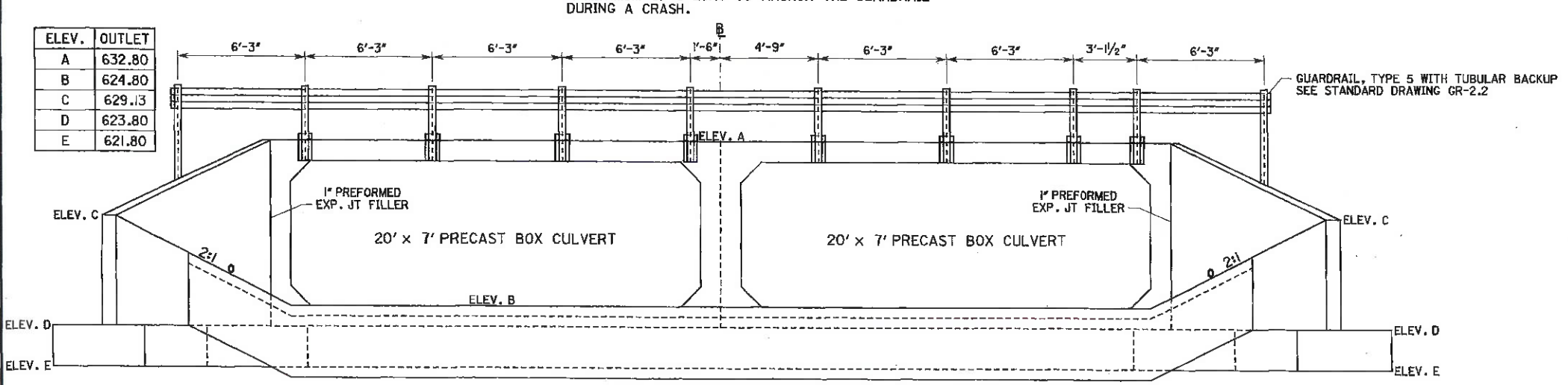
GUARDRAIL ATTACHMENT SHALL BE AS PER THE POST ANCHORAGE DETAILS FOR PRESTRESSED CONCRETE BOX BEAMS (1" THICKNESS) ON STANDARD DRAWING DBR-2-73. CAST THE ANCHORS INTO THE BOX CULVERT.



SECTION C-C

THE FIRST BOX CULVERT SECTION AT THE INLET AND THE LAST SECTION AT THE OUTLET SHALL BE A MINIMUM OF 6' LONG TO ANCHOR THE GUARDRAIL DURING A CRASH.

ELEV.	OUTLET
A	632.80
B	624.80
C	629.13
D	623.80
E	621.80



OUTLET ELEVATION

20' x 7' PRECAST DOUBLE CELL BOX CULVERT OUTLET HEADWALL DETAIL

CALCULATED | CHECKED

MOE-7-3.30

30
39

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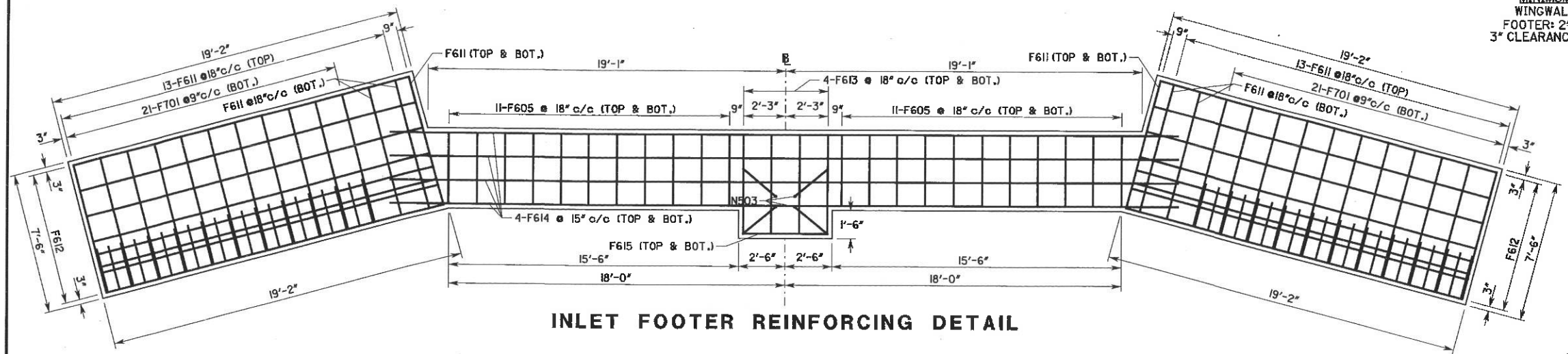
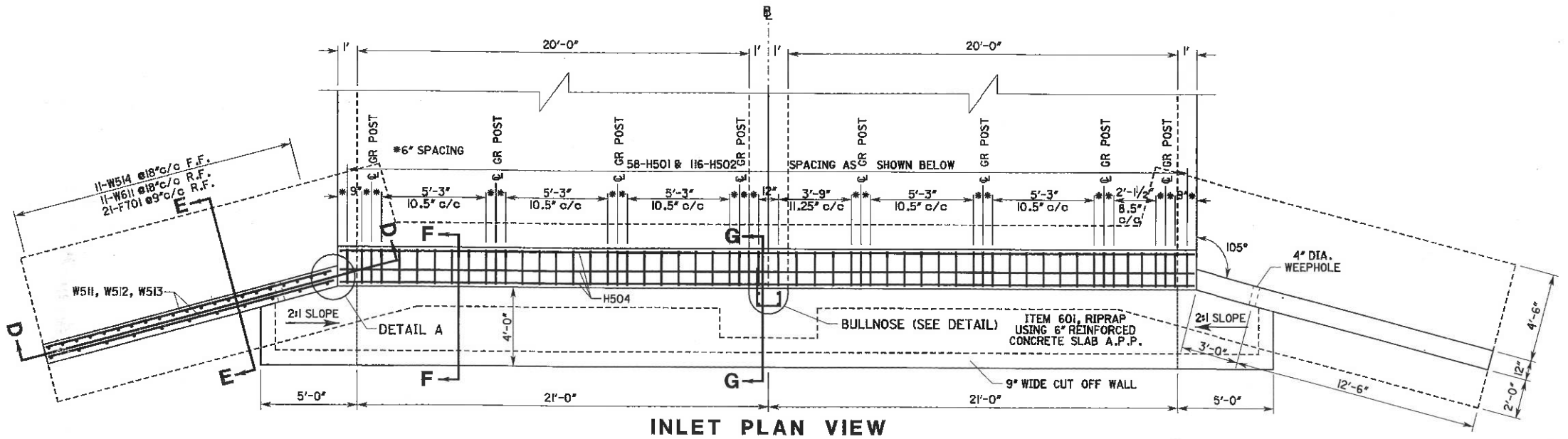
MINIMUM REBAR COVER
WINGWALL: 2" CLEARANCE
FOOTER: 2" CLEARANCE TOP, 3" CLEARANCE BOTTOM & SIDES

ABBREVIATIONS
F.F. = FRONT FACE
R.F. = REAR FACE
B.F. = BOTH FACES
C.JT. = CONSTRUCTION JOINT
MECH. CON. = MECHANICAL CONNECTOR

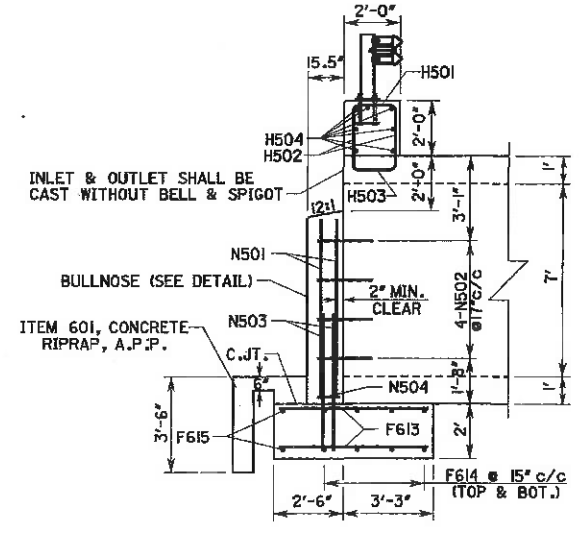
USE A ¾" CHAMFER ON ALL EXPOSED OUTSIDE CORNERS



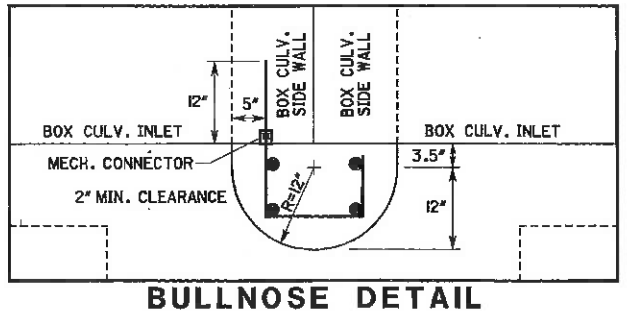
INLET FOOTER REINFORCING DETAIL



INLET PLAN VIEW



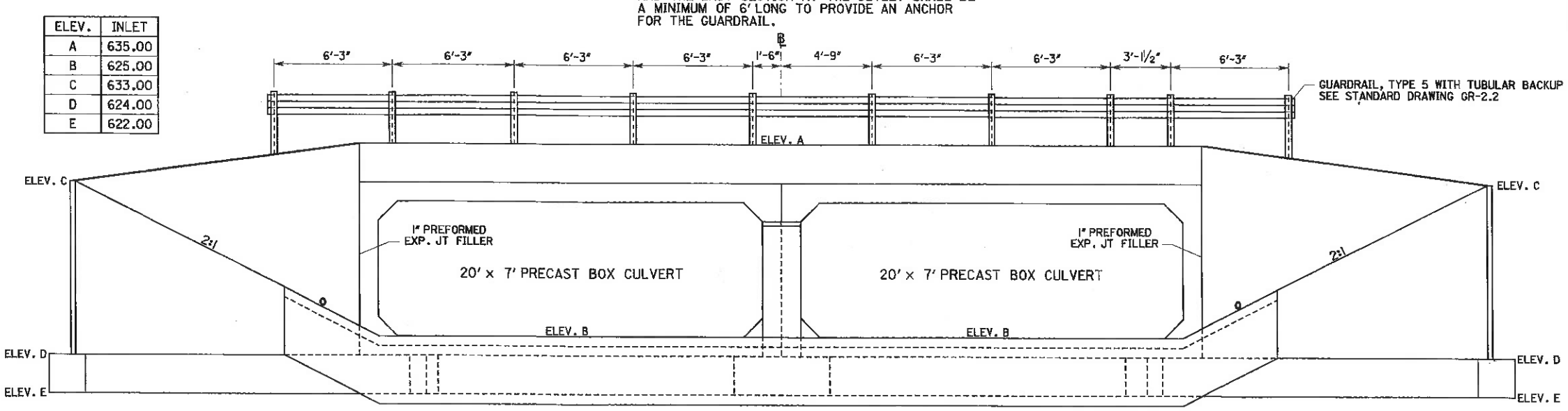
SECTION G-G



BULLNOSE DETAIL

ELEV.	INLET
A	635.00
B	625.00
C	633.00
D	624.00
E	622.00

THE FIRST BOX CULVERT SECTION AT THE INLET AND THE LAST SECTION AT THE OUTLET SHALL BE A MINIMUM OF 6' LONG TO PROVIDE AN ANCHOR FOR THE GUARDRAIL.

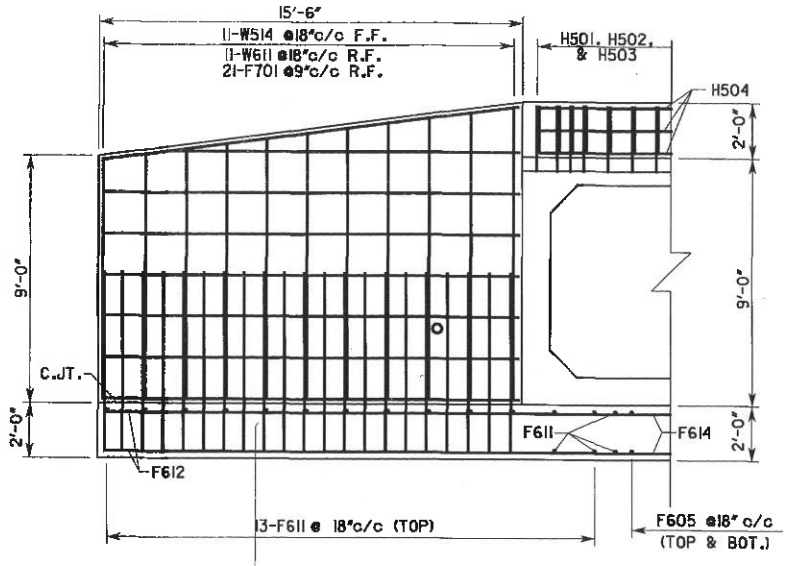


INLET ELEVATION

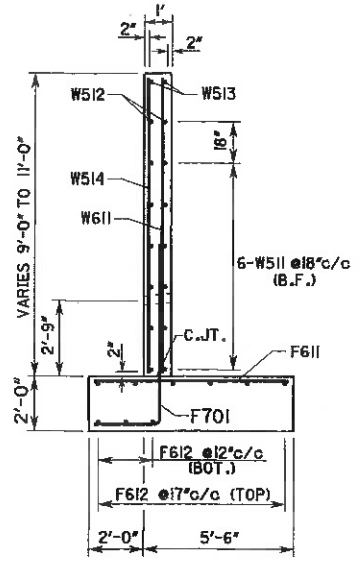
20' x 7' PRECAST DOUBLE CELL BOX CULVERT INLET HEADWALL DETAIL

CALCULATED | CHECKED

MOE-7-3.30



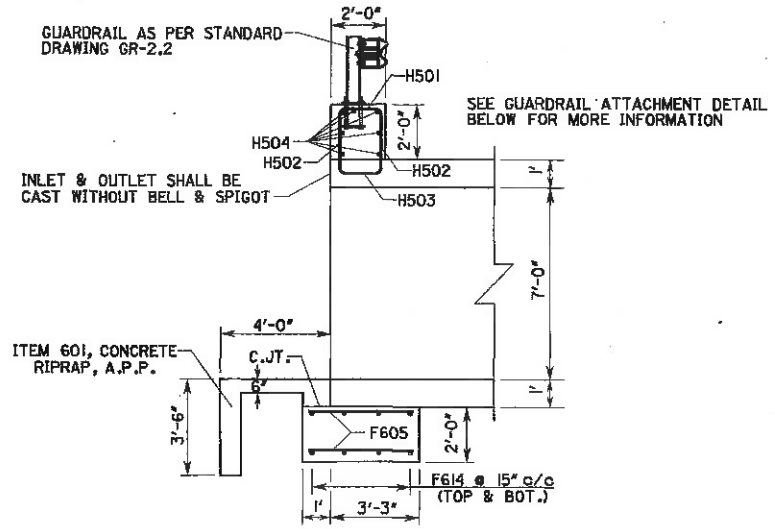
SECTION D-D



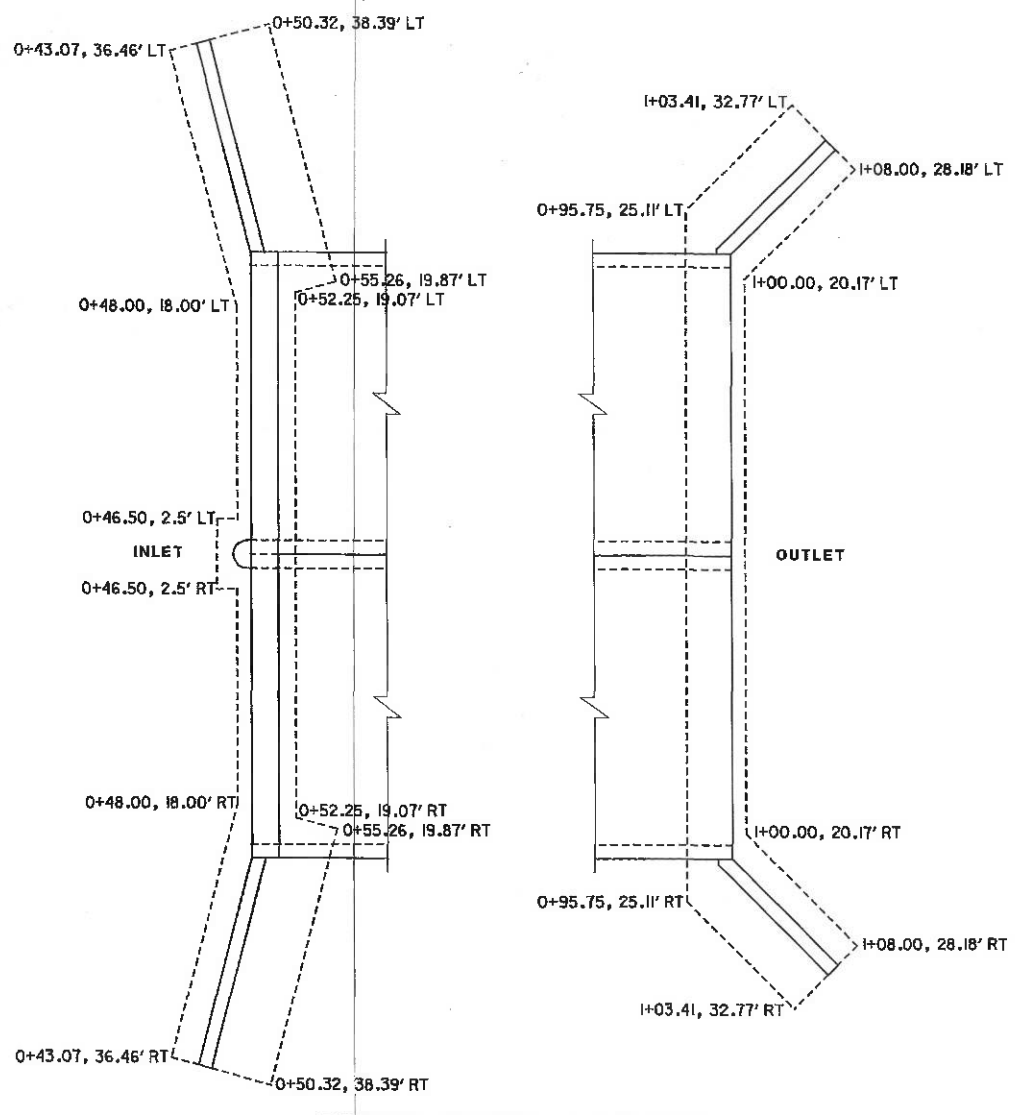
SECTION E-E

MINIMUM REBAR COVER
WINGWALL: 2" CLEARANCE
FOOTER: 2" CLEARANCE TOP, 3" CLEARANCE BOTTOM & SIDES

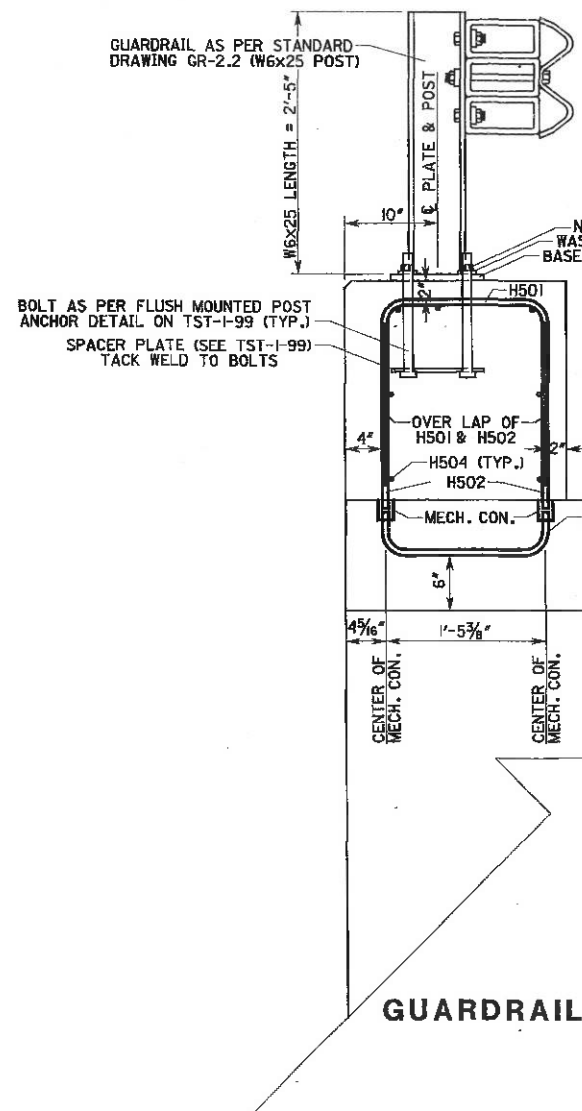
ABBREVIATIONS
F.F. = FRONT FACE
R.F. = REAR FACE
B.F. = BOTH FACES
C.JT. = CONSTRUCTION JOINT
MECH. CON. = MECHANICAL CONNECTOR



SECTION F-F



FOUNDATION LAYOUT



GUARDRAIL ATTACHMENT DETAIL

POST MOUNTING
POSTS SHALL BE PLACED PERPENDICULAR TO THE ROADWAY. THE RAIL FACE SHALL BE VERTICAL. POSTS SHALL BE SEATED ON ELASTOMERIC PADS (711.21) HAVING THE SAME DIMENSIONS AS THE BASE PLATE AND 1/16" THICKNESS. ADDITIONAL PADS OR HALF PADS MAY BE USED FOR SHIMMING.

GALVANIZE HARDWARE AS PER THE GENERAL NOTES ON STANDARD DRAWING TST-I-99.

FASTENERS SHALL CONFORM TO THE REQUIREMENTS OF THE TST-I-99 GENERAL NOTES.

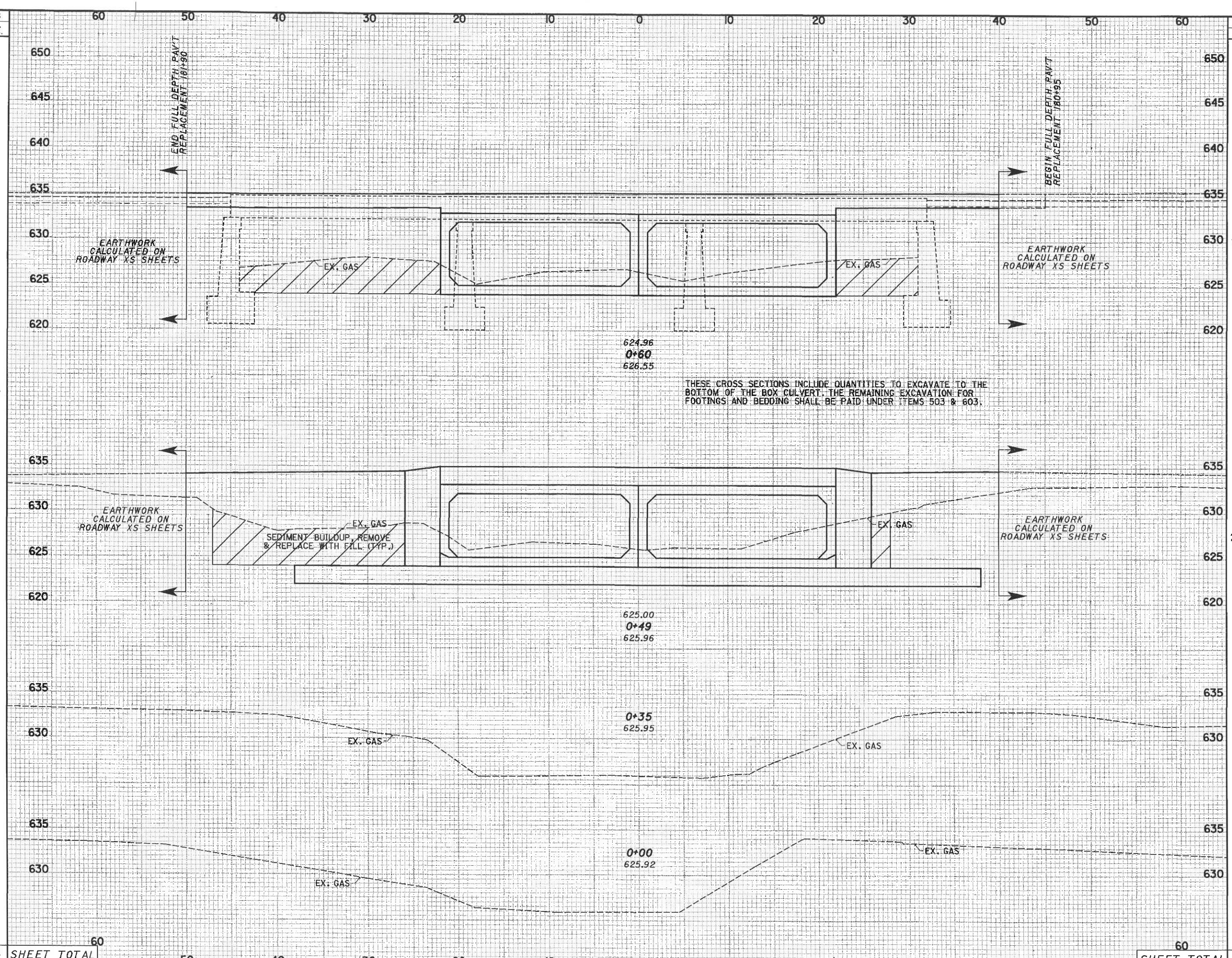
WELDS SHALL BE AS PER TST-I-99.

CALCULATED | CHECKED

20' x 7' PRECAST DOUBLE CELL BOX CULVERT INLET HEADWALL DETAIL

MOE-7-3.30

SEEDING END WIDTH	SEEDING SQ. YDS.
0	
	23
38	
	30
0	
0	
0	
	53



END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
228	301	99	137
259	373	67	97
0	0	0	0
0	0		
SHEET TOTAL		166	234

CALCULATED

CHECKED

CHANNEL CROSS SECTIONS
STA. 0+00 TO STA. 0+60

MOE-7-3.30

33
39

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SEEDING END WIDTH	SEEDING SQ. YDS.	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
0	58				
44	38	291	51	76	47
0	20	221	265	63	77
42	38	206	255	249	319
				388	443

SHEET TOTAL

EARTHWORK CALCULATED ON ROADWAY XS SHEETS

END FULL DEPTH PAV'T REPLACEMENT 181+90

EARTHWORK CALCULATED ON ROADWAY XS SHEETS

EX. GAS

EARTHWORK CALCULATED ON ROADWAY XS SHEETS

EX. GAS

EX. GAS

EX. GAS

EX. GAS

EX. GAS

EARTHWORK CALCULATED ON ROADWAY XS SHEETS

BEGIN FULL DEPTH PAV'T REPLACEMENT 180+95

EARTHWORK CALCULATED ON ROADWAY XS SHEETS

624.80
1+07
626.85

624.80
0+99
626.23

624.83
0+91
625.66

SHEET TOTAL

CHANNEL CROSS SECTIONS
STA. 0+91 TO STA. 1+07

MOE-7-3.30

34
39

CALCULATED

CHECKED

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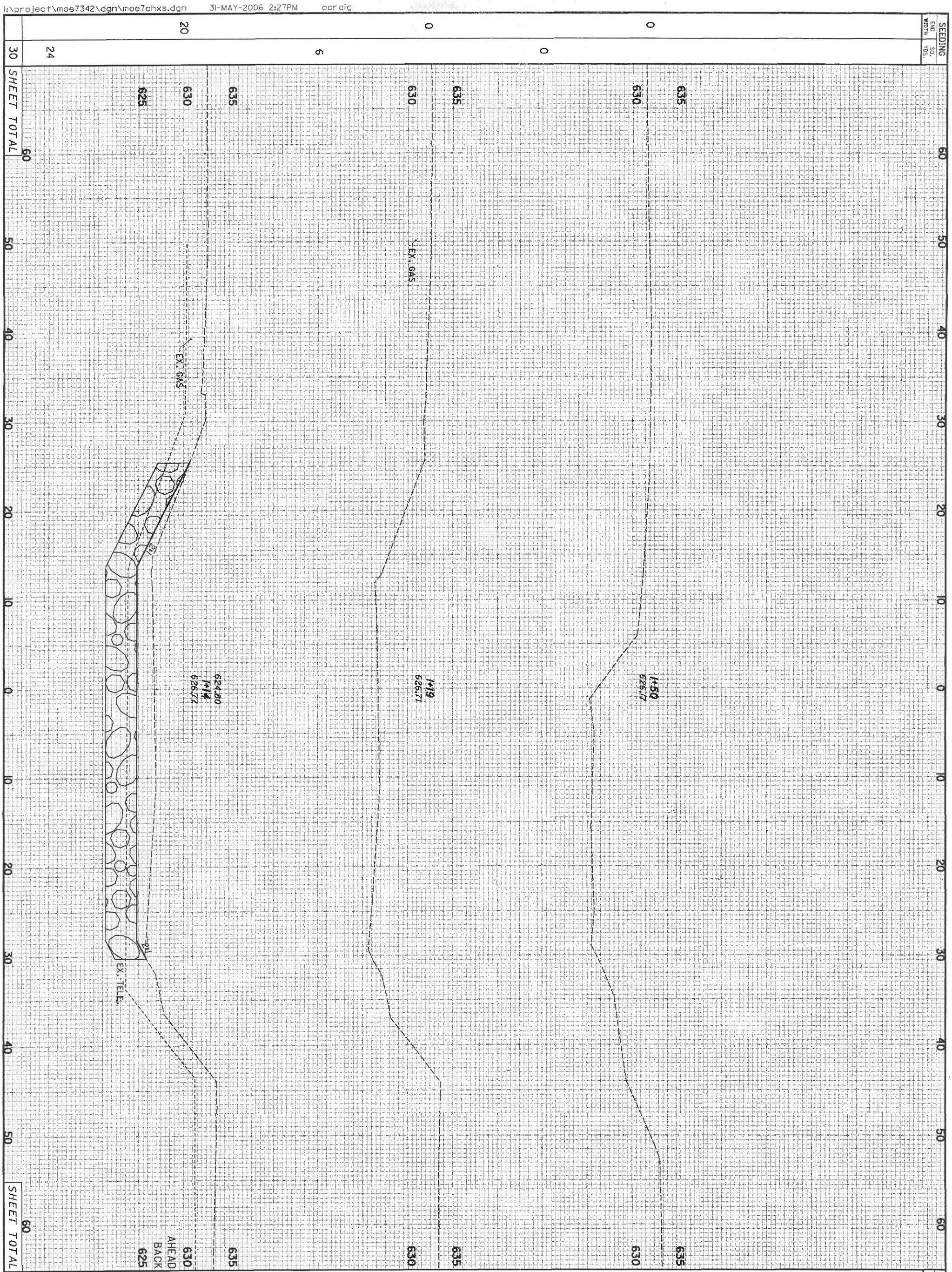
SEEDING	
END WIDTH	0
SQ. YDS.	0



	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
	0	0	0	0
	0	0	0	0
	0	0	8	0
	0	0	0	0
SHEET TOTAL	85	0	74	38
	279	0	82	38

MOE-7-3.30

35/39

CHANNEL CROSS SECTIONS
STA. 1+14 TO STA. 1+50

CALCULATED

CHECKED

SUPERELEVATION TABLE

PI STA. 178+95.12 | Dc = 2°39'59"

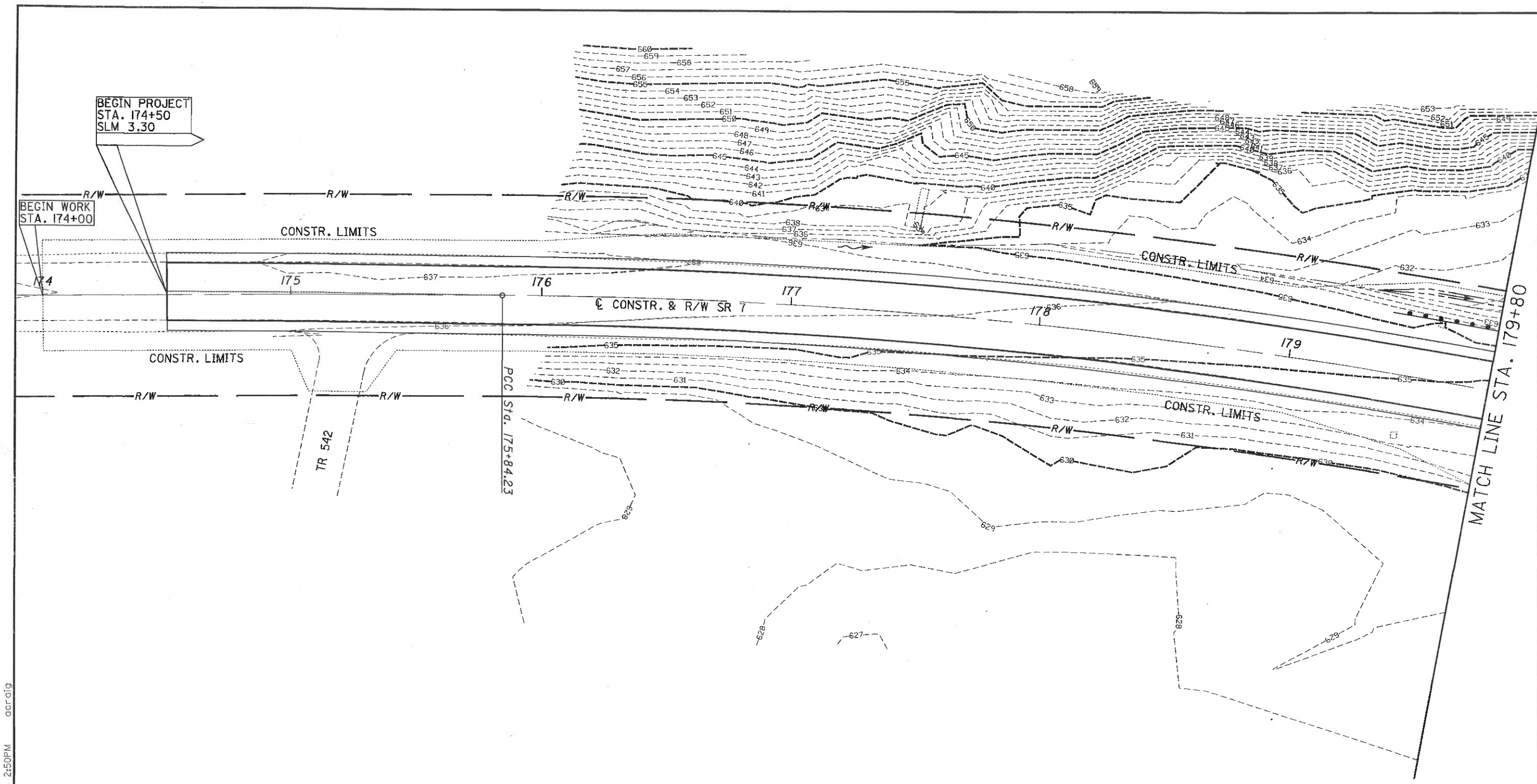
LEFT SIDE					CENTERLINE CONTROL		RIGHT SIDE					
EDGE ELEVATION	TRANSITION RATE	ELEVATION CORRECTION	CROSS SLOPE	WIDTH	STATION	PROFILE GRADE	WIDTH	CROSS SLOPE	ELEVATION CORRECTION	TRANSITION RATE	EDGE ELEVATION	REMARKS
636.74		-0.184	-0.016	11.5	174+58	636.92	11.5	-0.016	-0.184		636.74	NC
636.86		-0.110	-0.010	11.5	174+75	636.97	11.5	-0.016	-0.184		636.79	
637.04		0.000	0.000	11.5	175+00	637.04	11.5	-0.016	-0.184		636.86	HL
637.21		0.109	0.009	11.5	175+25	637.10	11.5	-0.016	-0.184		636.92	
637.29	229:1	0.183	0.016	11.5	175+42	637.11	11.5	-0.016	-0.184		636.93	CR
637.33		0.218	0.019	11.5	175+50	637.11	11.5	-0.019	-0.218	229:1	636.89	
637.41		0.327	0.028	11.5	175+75	637.08	11.5	-0.028	-0.327		636.75	
637.42		0.368	0.032	11.5	175+84.23	637.05	11.5	-0.032	-0.368		636.68	PC
637.44		0.437	0.038	11.5	176+00	637.00	11.5	-0.038	-0.437		636.56	
637.42		0.546	0.047	11.5	176+25	636.87	11.5	-0.047	-0.546		636.32	
637.41		0.655	0.057	11.5	176+50	636.75	11.5	-0.057	-0.655		636.09	FS
637.28		0.656	0.057	11.5	176+75	636.62	11.5	-0.057	-0.656		635.96	
637.16		0.656	0.057	11.5	177+00	636.50	11.5	-0.057	-0.656		635.84	
637.03		0.656	0.057	11.5	177+25	636.37	11.5	-0.057	-0.656		635.71	
636.90		0.656	0.057	11.5	177+50	636.24	11.5	-0.057	-0.656		635.58	
636.78		0.656	0.057	11.5	177+75	636.12	11.5	-0.057	-0.656		635.46	
636.65		0.656	0.057	11.5	178+00	635.99	11.5	-0.057	-0.656		635.33	
636.52		0.656	0.057	11.5	178+25	635.86	11.5	-0.057	-0.656		635.20	
636.40		0.656	0.057	11.5	178+50	635.74	11.5	-0.057	-0.656		635.08	
636.27		0.656	0.057	11.5	178+75	635.61	11.5	-0.057	-0.656		634.95	
636.15		0.656	0.057	11.5	179+00	635.49	11.5	-0.057	-0.656		634.83	
636.02		0.656	0.057	11.5	179+25	635.36	11.5	-0.057	-0.656		634.70	
635.89		0.656	0.057	11.5	179+50	635.23	11.5	-0.057	-0.656		634.57	
635.77		0.656	0.057	11.5	179+75	635.11	11.5	-0.057	-0.656		634.45	
635.72		0.656	0.057	11.5	180+00	635.06	11.5	-0.057	-0.656		634.40	
635.61		0.670	0.057	11.75	180+25	634.94	11.75	-0.057	-0.670		634.27	
635.53		0.684	0.057	12	180+50	634.85	12	-0.057	-0.684		634.17	
635.43		0.684	0.057	12	180+75	634.75	12	-0.057	-0.684		634.07	
635.33		0.684	0.057	12	181+00	634.65	12	-0.057	-0.684		633.97	
635.25		0.684	0.057	12	181+25	634.57	12	-0.057	-0.684		633.89	
635.20		0.684	0.057	12	181+50	634.52	12	-0.057	-0.684		633.84	FS
635.07		0.570	0.047	12	181+75	634.50	12	-0.047	-0.570		633.93	
634.98		0.456	0.038	12	182+00	634.52	12	-0.038	-0.456	219:1	634.06	
634.90		0.448	0.037	12	182+01.73	634.45	12	-0.037	-0.448		634.00	PT
634.89	219:1	0.342	0.028	12	182+25	634.55	12	-0.028	-0.342		634.21	
634.85		0.224	0.019	11.8	182+50	634.63	11.8	-0.019	-0.224		634.41	
634.85		0.187	0.016	11.72	182+58	634.66	11.72	-0.016	-0.188		634.47	CR
634.83		0.109	0.009	11.55	182+75	634.72	11.55	-0.016	-0.185		634.54	
634.82		0.000	0.000	11.5	183+00	634.82	11.5	-0.016	-0.184		634.64	HL
634.77		-0.110	-0.010	11.5	183+25	634.88	11.5	-0.016	-0.184		634.70	
634.71		-0.184	-0.016	11.5	183+42	634.89	11.5	-0.016	-0.184		634.71	NC

NC = NORMAL CROWN
HL = HALF LEVEL
CR = CROWN REMOVED
FS = FULL SUPERELEVATION

CALCULATED | CHECKED

SUPERELEVATION TABLE

MOE-7-3.30



PROJECT DATA	
TOTAL AREA (RIGHT OF WAY)	2.1 ACRES
PROJECT EARTH DISTURBED AREA	0.6 ACRES
ESTIMATED CONTRACTOR EARTH DISTURBED AREA	0.5 ACRES
NOTICE OF INTENT EARTH DISTURBED AREA	4.9 ACRES
IMPERVIOUS (PAVED) AREA FOR PRE-CONSTRUCTION SITE	0.81 ACRES
IMPERVIOUS (PAVED) AREA FOR POST-CONSTRUCTION SITE	0.88 ACRES
RUNOFF COEFFICENT FOR PRE-CONSTRUCTION SITE	0.59
RUNOFF COEFFICENT FOR POST CONSTRUCTION SITE	0.61
SOIL & WATER CONSERVATION MAP	72
IMMEDIATE RECEIVING WATERS	MILLER'S RUN
SUBSEQUENT RECEIVING WATERS	OHIO RIVER

USGS MAP DATA

USGS QUADRANT NO. N3930-W8052.5/7.5
PADEN CITY, W.VA.-OHIO
LONGITUDE: 80°59'40"
LATITUDE: 39°34'56"

PROJECT DESCRIPTION

REPLACE A BRIDGE OVER MILLER'S RUN WITH A TWO CELL, PRECAST BOX CULVERT AND RESURFACE 0.17 MILES OF SR 7 TO CORRECT THE HORIZONTAL CURVE SUPERELEVATION.

HORIZONTAL SCALE IN FEET
0 20 40

CALCULATED
CHECKED

STORM WATER PLAN BASE MAP
STA. 174+00 TO STA. 179+80

MOE-7-3.30

37
39

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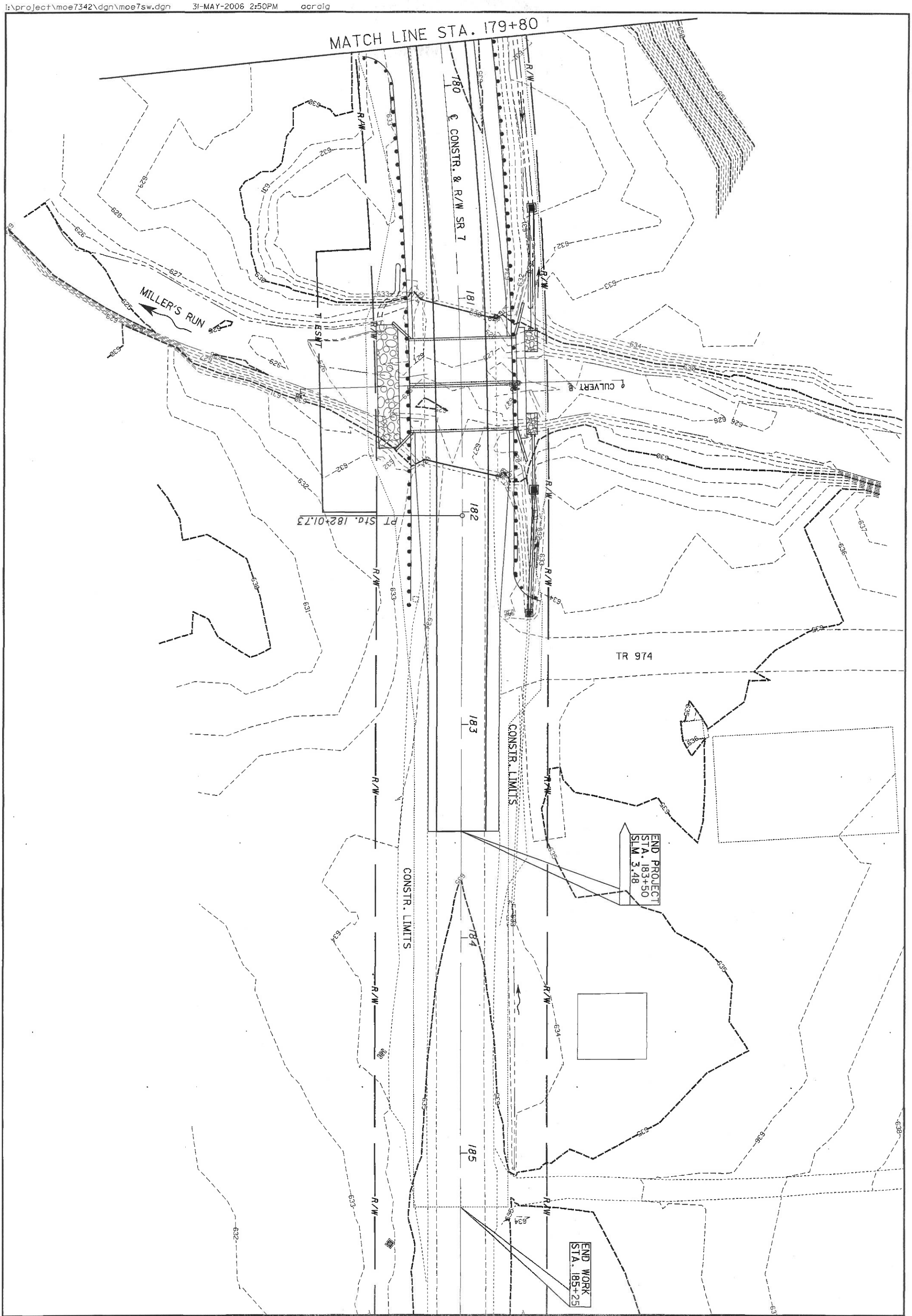
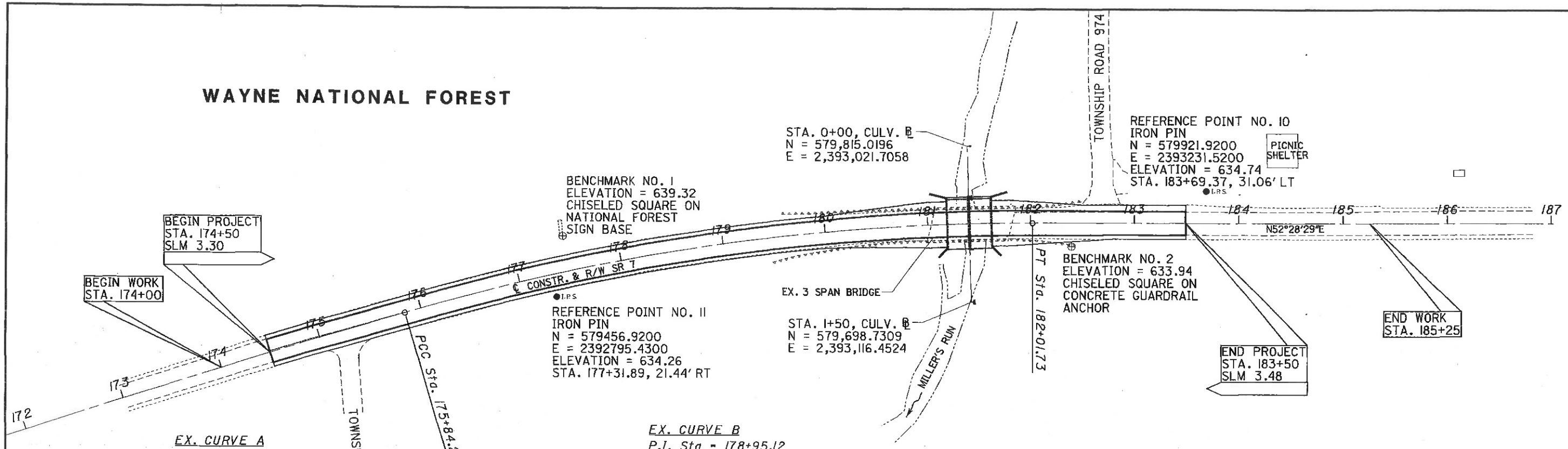


38/39	MOE-7-3.30	STORM WATER PLAN BASE MAP STA. 179+80 TO STA. 185+50	CALCULATED CHECKED 0 20 10 40 HORIZONTAL SCALE IN FEET

WAYNE NATIONAL FOREST



EX. CURVE A
P.I. Sta = 158+37.53
Δ = 15° 13' 42" (RT)
Dc = 0° 26' 00"
R = 13,222.10'
T = 1,767.53'
L = 3,514.23'
E = 117.62'
e_{max} = NC
PC Sta = 140+70.00
BACK TAN = N20°46'52"E
AHEAD TAN = N36°00'34"E

EX. CURVE B
P.I. Sta = 178+95.12
Δ = 16° 27' 55" (RT)
Dc = 2° 39' 59"
R = 2,148.79'
T = 310.89'
L = 617.50'
E = 22.37'
e_{max} = 0.057
BACK TAN = N36°00'34"E

STATION	NORTHING	EASTING	POINT TYPE
158+37.53	577,924.5223	2,391,648.9852	PC
140+70.00	576,271.9795	2,391,021.8706	PI
173+00.00	579,122.6191	2,392,523.5276	POC
173+50.00	579,163.6337	2,392,552.1248	POC
174+00.00	579,204.5398	2,392,580.8769	POC
174+50.00	579,245.3369	2,392,609.7836	POC
175+00.00	579,286.0244	2,392,638.8443	POC
175+50.00	579,326.6017	2,392,668.0586	POC
175+84.23	579,354.3171	2,392,688.1471	PCC
176+00.00	579,367.0397	2,392,697.4653	POC
176+50.00	579,406.9199	2,392,727.6225	POC
177+00.00	579,446.0876	2,392,758.6995	POC
177+50.00	579,484.5217	2,392,790.6793	POC
178+00.00	579,522.2012	2,392,823.5447	POC
178+50.00	579,559.1060	2,392,857.2779	POC
178+95.12	579,605.8067	2,392,870.9275	PI
179+00.00	579,595.2158	2,392,891.8607	POC
179+50.00	579,630.5113	2,392,927.2742	POC
180+00.00	579,664.9732	2,392,963.4994	POC
180+50.00	579,698.5830	2,393,000.5165	POC
181+00.00	579,731.3224	2,393,038.3057	POC
181+50.00	579,763.1737	2,393,076.8463	POC
182+00.00	579,794.1196	2,393,116.1176	POC
182+01.73	579,795.1769	2,393,117.4931	PT
182+50.00	579,824.5758	2,393,155.7714	POL
183+00.00	579,855.0315	2,393,195.4255	POL
183+50.00	579,885.4871	2,393,235.0797	POL
184+00.00	579,915.9428	2,393,274.7339	POL

PI = POINT OF INTERSECTION
PC = POINT OF CURVE
PT = POINT OF TANGENT
PCC = POINT OF CURVE TO CURVE
POC = POINT ON CURVE
POL = POINT ON LINE

HORIZONTAL SCALE IN FEET
0 25 50 100
CALCULATED
CHECKED

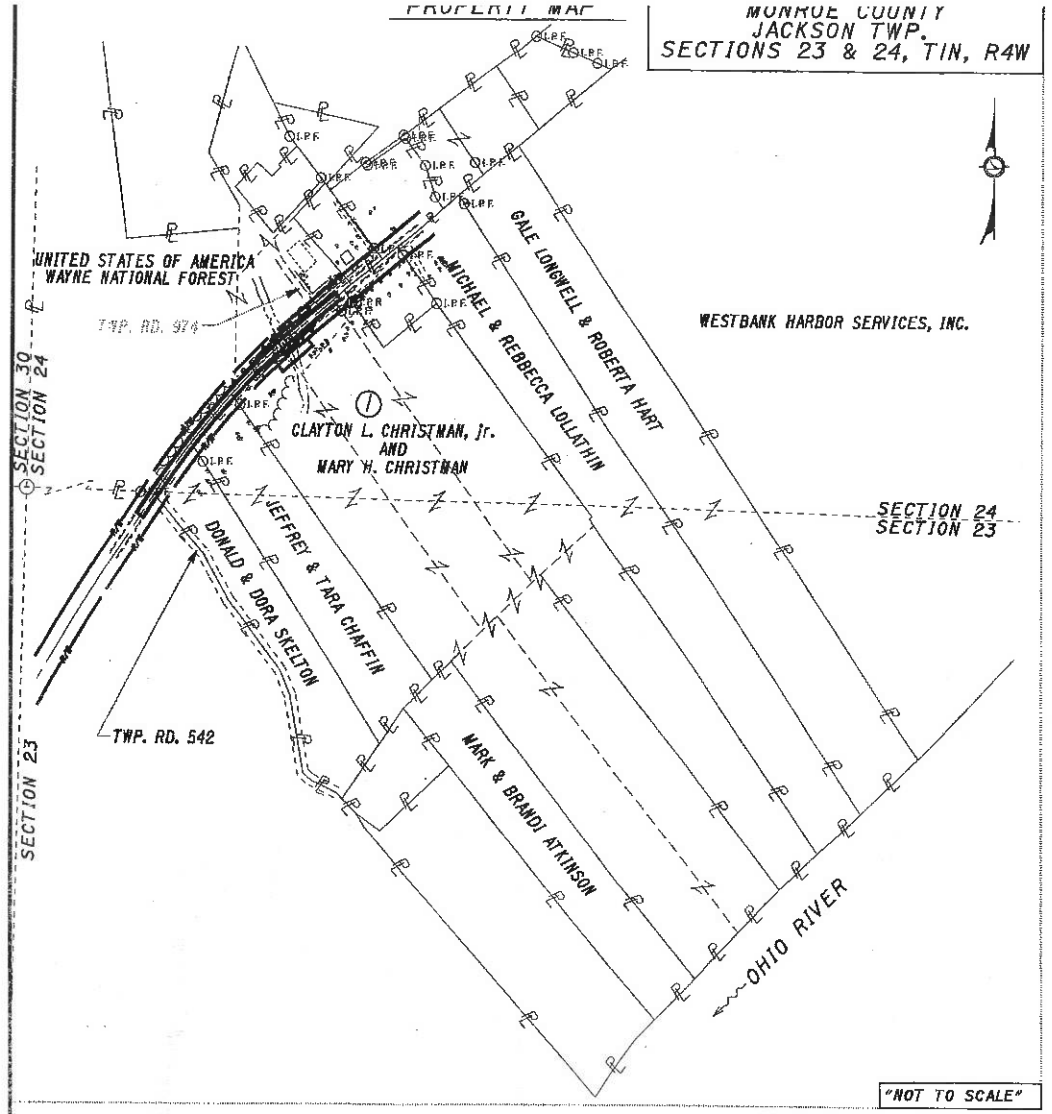
BENCHMARKS AND REFERENCES

MOE-7-3.30

STATE OF OHIO DEPARTMENT OF TRANSPORTATION
MONROE COUNTY, JACKSON TOWNSHIP, SECTIONS 23 & 24, T1N, R4W

PROPERTY MAP

MONROE COUNTY
JACKSON TWP.
SECTIONS 23 & 24, T1N, R4W



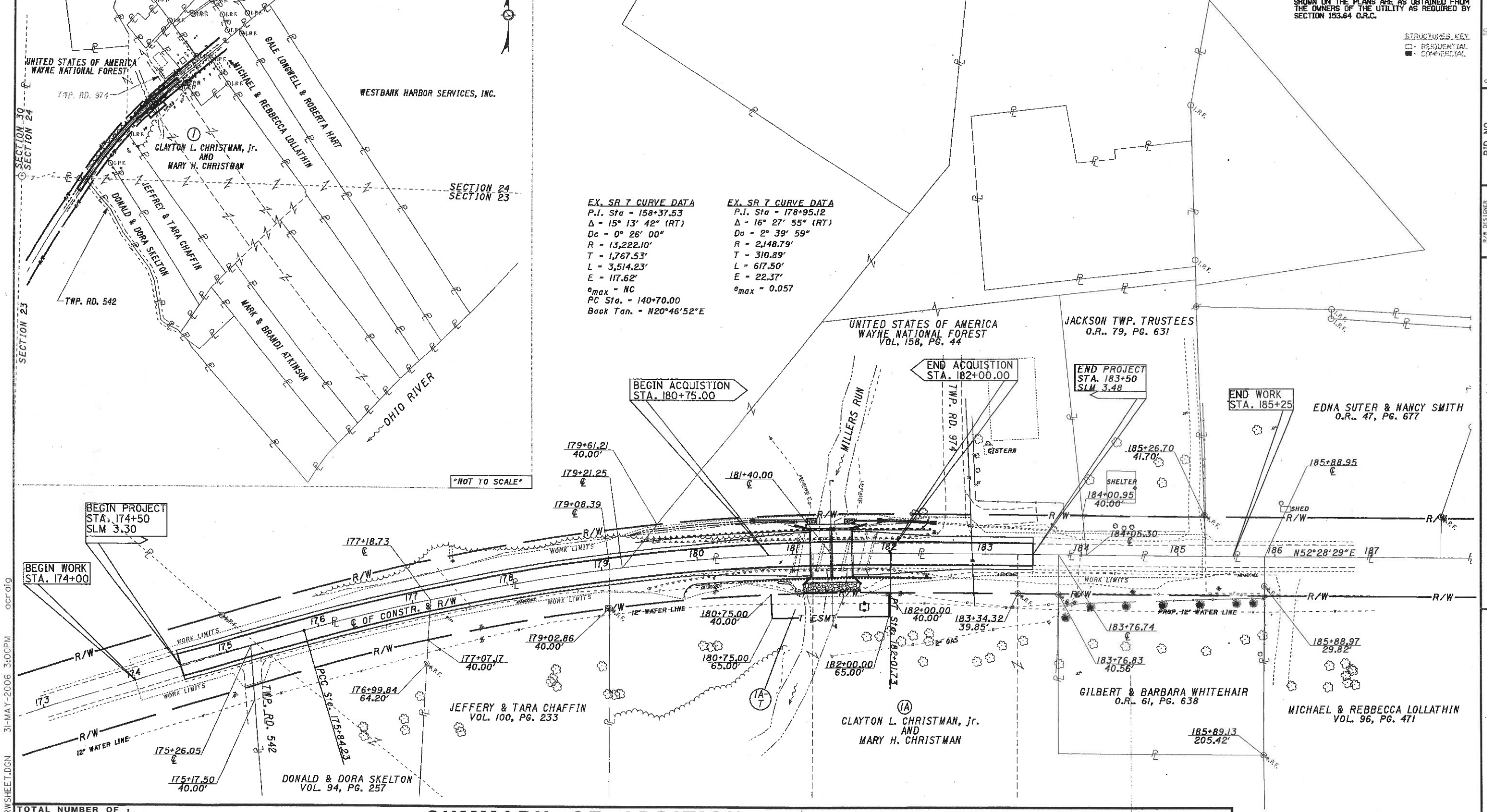
EX. SR 7 CURVE DATA
P.I. Sta = 158+37.53
Δ = 15° 13' 42" (RT)
Dc = 0° 26' 00"
R = 13,222.10'
T = 1,767.53'
L = 3,514.23'
E = 117.62'
e_{max} = NC
PC Sta. = 140+70.00
Back Tan. = N20°46'52"E

EX. SR 7 CURVE DATA
P.I. Sta = 178+95.12
Δ = 16° 27' 55" (RT)
Dc = 2° 39' 59"
R = 2,148.79'
T = 310.89'
L = 617.50'
E = 22.37'
e_{max} = 0.057

GENERAL NOTE:
ALL BEARINGS SHOWN ARE FOR PROJECT USE ONLY. THESE BEARINGS ARE TO AN ASSUMED MERIDIAN. THEY ARE USED TO DELINATE ANGLES ONLY, AND ARE FROM SURVEYS MADE BY O.D.O.T. SURVEY DEPARTMENT AND EXISTING RIGHT OF WAY PLANS ON RECORD IN THE DISTRICT OFFICE.

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

STRUCTURES KEY
- R - RESIDENTIAL
- C - COMMERCIAL



SUMMARY OF ADDITIONAL RIGHT OF WAY

TOTAL NUMBER OF :
___ OWNERSHIPS ___ OWNERSHIPS WITH STRUCTURES INVOLVED
___ TOTAL TAKES ___ OWNERSHIPS WITH "P" ITEMS

NOTE: NET RESIDUE IS THE AUDITOR'S RECORDED AREA MINUS THE TOTAL PRO. MINUS THE NET TAKE.

PARCEL NO.	OWNER	SHEET NO.	OWNERS RECORD BOOK	OWNERS RECORD PAGE	AUDITOR'S PARCEL	RECORD AREA(AC.)	TOTAL P.R.O.	GROSS TAKE	P.R.O. IN TAKE	NET TAKE	STRUCTURE	NET RESIDUE LEFT	NET RESIDUE RIGHT	TYPE FUND	REMARKS AND PERSONALTY	AS ACQUIRED BOOK	AS ACQUIRED PAGE
IA-T	CLAYTON L.CHRISTMAN & MARY H.CHRISTMAN		O.R. 127	292	10-016005.000	2.315	0.432	0.072	0.000	0.072	NO		2.315				
					10-016044.000	3.208							3.208				
					10-016043.000	4.054							4.054				
					10-021035.0000	1.131							1.131				
					10-021036.0000	1.935							1.935				
					10-021037.0000	2.836							2.836				
					10-021038.0000	5.165							5.165				
					10-021039.0000	5.165							5.165				

REV.	DATE	DESCRIPTION
L.L.	8/29/05	REVISED PID No. and PARCEL 1 to IA
FILING DATE: 8/1/05		

SCALE IN FEET
0 25 50 100

PID NO. 25080

R/W DESIGNER
R/W REVIEWER

RIGHT OF WAY PLAN

MOE - 7 - 3.30

1 / 1

39 / 39

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