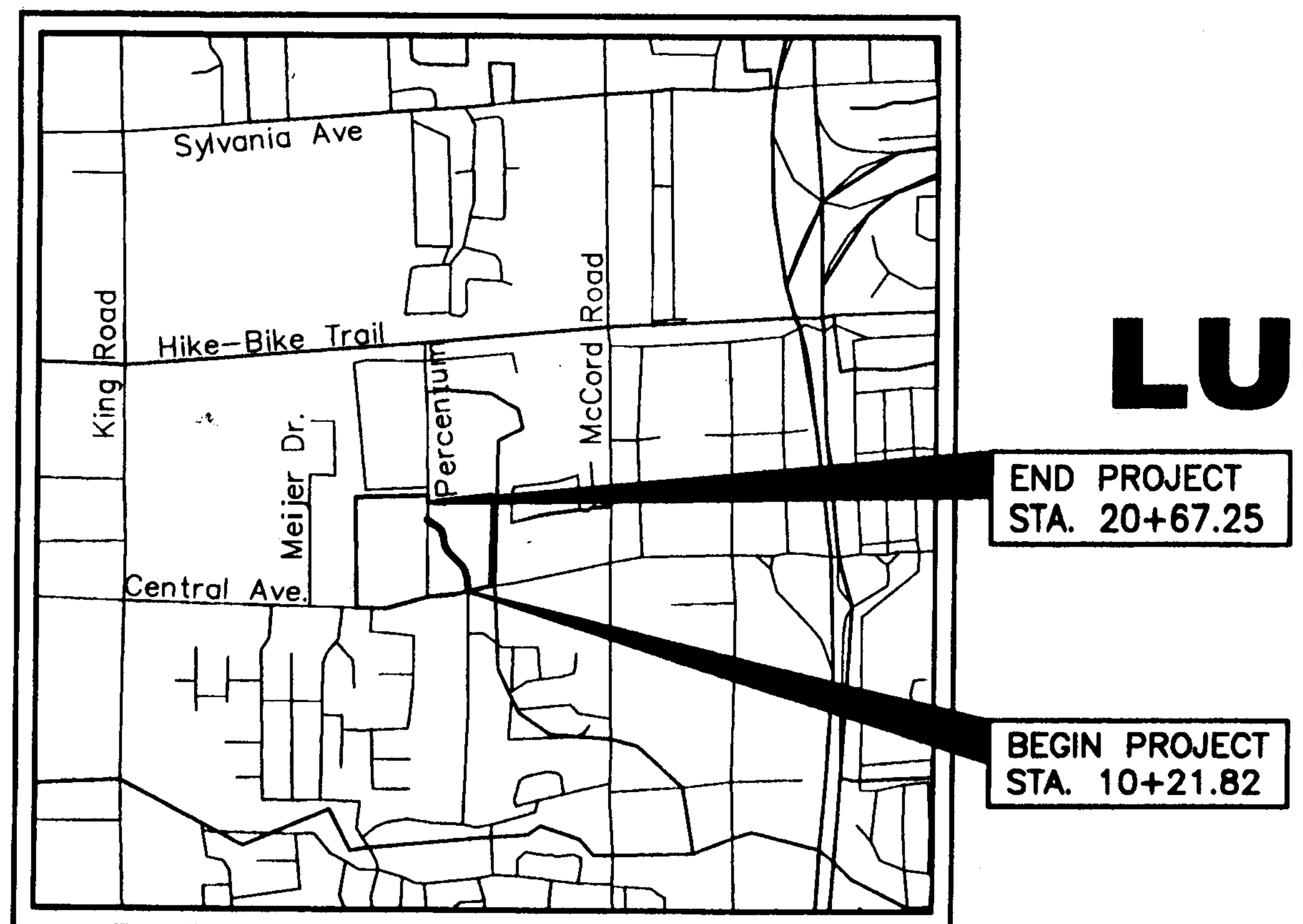


LOCATION MAP

LATITUDE : 41° 40' 15"   LONGITUDE : 83° 42' 30"

Graphic Scale 0' 1/4 1/2 1 Mile

PORTION TO BE IMPROVED.....................
STATE & FEDERAL ROUTES.....................
OTHER ROADS.....................

STATE OF OHIO
LUCAS COUNTY ENGINEER

LUC - PERCENTUM ROAD

SYLVANIA TOWNSHIP
LUCAS COUNTY

INDEX OF SHEETS

NO AS BUILTS
BUILT PER PLAN

PROJECT DESCRIPTION

IMPROVEMENT OF 0.22 MILES OF PERCENTUM ROAD BY THE REALIGNMENT AND WIDENING OF PAVEMENT INCLUDING UTILITY IMPROVEMENTS.

1997 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 REQUIRE THE CLOSING OF THE HIGHWAY TO TRAFFIC AS NOTED ON SHT. 6/31, AND THAT DETOURS WILL BE PROVIDED AS INDICATED ON THE LOCATION & DETOUR MAP, SHEET 6/31.

DESIGN DESIGNATION

EXISTING A.D.T. (2000) .... = 200
OPENING DAY A.D.T. (2001) .... = 12,000
DESIGN YEAR A.D.T. (2020) .... = 14,000
D.H.V. (2020) .... = 1400
D .... = 55%
T .... = 6%
DESIGN SPEED .... = 25 MPH
LEGAL SPEED .... = 25 MPH
FUNCTIONAL CLASSIFICATION .... = LOCAL ROAD

STANDARD CONSTRUCTION DRAWINGS						SPECIAL PROVISION		SUPPLEMENTAL SPECIFICATIONS	
ODOT STANDARD DRAWINGS						DWG	DATE	NO.	DATE
DWG	DATE	DWG	DATE	DWG	DATE	.	.	.	.
BP 5.1	7-28-00	HL-30.11M	03-31-95	MT-95.31M	04-25-94	.	.	870	3/27/01
BP 7.1	7-28-00	HL-30.21M	05-01-95	MT-95.32M	04-25-94	.	.	877	4/13/99
RM 1.1	4-29-99	HL-30.22M	03-31-95	MT-35.10	04-25-94	.	.	830	10/21/98
CB 2-3	5-1-79	HL-60.11M	05-01-95	MT-95.41M	04-25-94	.	.	842	1/6/99
CB 3A	5-1-79	HL-60.12M	03-31-95	MT-95.60M	04-25-94	.	.	899	10/21/98
HW-4B	4-1-80	TC-21.20M	12-10-96	MT-97.10M	04-25-94	.	.	906	5/5/98
MH-5	6-12-85	TC-81.10M	12-10-96	MT-101.60M	04-25-94	.	.	908	11/7/00
TC 41.20	6-21-94	TC-82.10	01-19-00	MT-105.10M	04-25-94	.	.	.	.
TC 42.20	3-26-79	TC-82.11	01-19-00	MT-105.11M	04-25-94	.	.	.	.
TC 52.10	4-3-79	TC-83.20M	11-24-93	VPM-1-90M	9-26-90				
TC 52.20	4-3-79	TC-84.20M	11-24-93	DM-2.1M	6-30-95				
TC 71.10	9-10-91	TC-85.20M	11-24-93	CB-1.2M	6-30-95				

LUCAS COUNTY CONSTRUCTION STANDARD		SPECIFICATIONS
DWG	DATE	
PAVEMENT JOINTS & CURB DETAILS	3-89	
PIPE CRADLE & ROCK CHANNEL PROTECTION	3-89	
TYPE 1 CONCRETE BLOCK MANHOLE/ENDWALLS	3-89	
NO. 4 MANHOLE	3-89	
TYPE A-1 CONCRETE BLOCK CATCH BASIN	3-89	
MANHOLE CASTINGS & MONUMENT ASSEMBLY	3-89	

UNDERGROUND UTILITIES

TWO WORKING DAYS BEFORE YOU DIG

CALL 800-362-2764 (TOLL FREE)
OHIO UTILITIES PROTECTION SERVICE

NON MEMBERS
MUST BE CALLED DIRECTLY

PLANS PREPARED BY:

MANNIK & SMITH INC.
CONSULTING ENGINEERS AND SURVEYORS
1800 INDIAN WOOD CIRCLE
MAUMEE, OHIO 43537

BY: [signature] DATE: 8-31-01
REGISTERED PROFESSIONAL ENGINEER

APPROVALS

APPROVED: ____________
DATE: ________ THE BENCH MARK GROUP

APPROVED: Keith Earley
DATE: 8-31-01 LUCAS COUNTY ENGINEER

APPROVED: ____________
DATE: ________ DISTRICT DEPUTY DIRECTOR

APPROVED: ____________
DATE: ________ DIRECTOR, DEPARTMENT OF TRANSPORTATION

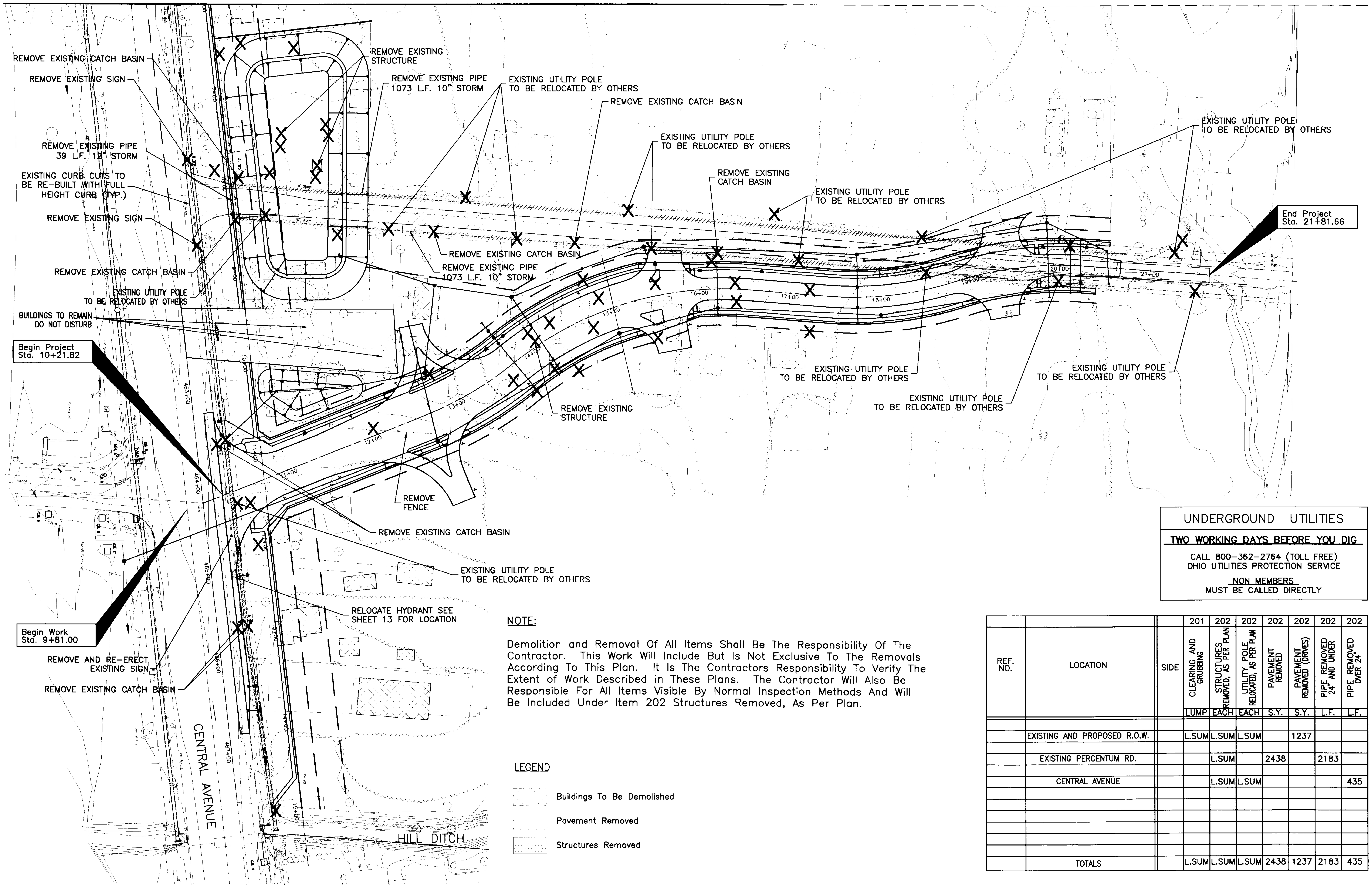
FEDERAL PROJECT NUMBER NONE
P.I.D. NUMBER NONE
CONSTRUCTION PROJECT NO. NONE
RAILROAD INVOLVEMENT NONE

LUC - PERCENTUM ROAD

B157A1D

FILE 774

MATCH LINE STA. 6+00
SEE SHEET 3/31



UNDERGROUND UTILITIES

TWO WORKING DAYS BEFORE YOU DIG

CALL 800-362-2764 (TOLL FREE)
OHIO UTILITIES PROTECTION SERVICE

NON MEMBERS
MUST BE CALLED DIRECTLY

NOTE:

Demolition and Removal Of All Items Shall Be The Responsibility Of The Contractor. This Work Will Include But Is Not Exclusive To The Removals According To This Plan. It Is The Contractors Responsibility To Verify The Extent of Work Described in These Plans. The Contractor Will Also Be Responsible For All Items Visible By Normal Inspection Methods And Will Be Included Under Item 202 Structures Removed, As Per Plan.

LEGEND

Buildings To Be Demolished

Pavement Removed

Structures Removed

			201	202	202	202	202	202	202
REF. NO.	LOCATION	SIDE	CLEARING AND GRUBBING	STRUCTURES REMOVED, AS PER PLAN	UTILITY POLE RELOCATED, AS PER PLAN	PAVEMENT REMOVED	PAVEMENT REMOVED (DRIVES)	PIPE REMOVED 24" AND UNDER	PIPE REMOVED OVER 24"
			LUMP	EACH	EACH	S.Y.	S.Y.	L.F.	L.F.
	EXISTING AND PROPOSED R.O.W.		L.SUM	L.SUM	L.SUM		1237		
	EXISTING PERCENTUM RD.			L.SUM		2438		2183	
	CENTRAL AVENUE			L.SUM	L.SUM				435
	TOTALS		L.SUM	L.SUM	L.SUM	2438	1237	2183	435

DRAWN JWS
CHECKED JLW

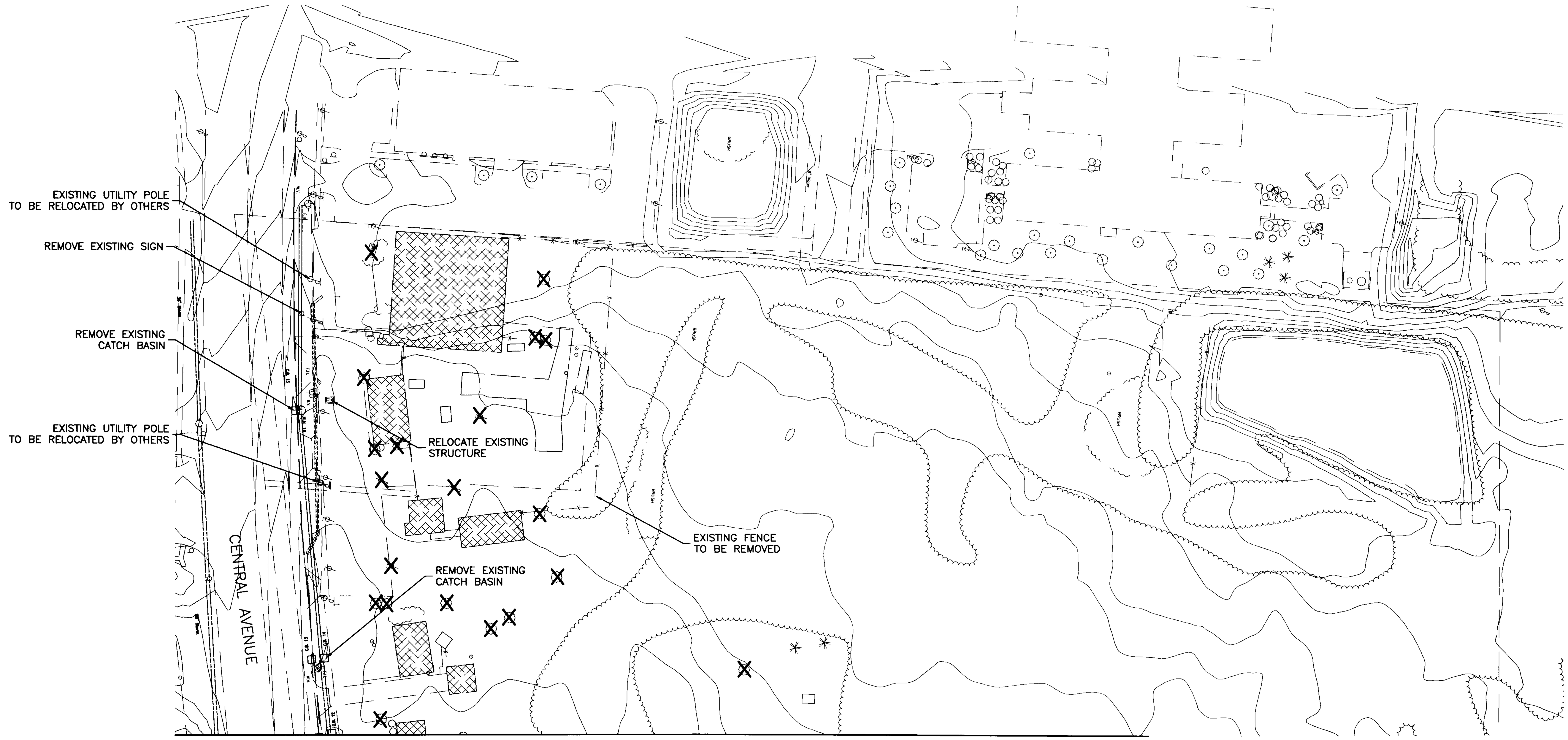
0 25' 50' 100'
HORIZONTAL
SCALE IN FEET

SCHEMATIC AND DEMOLITION PLAN

LUC-PERCENTUM ROAD

B157A1D

FILE 774



MATCH LINE STA. 6+00
SEE SHEET 2/31

REF. NO.	LOCATION	SIDE	201 CLEARING AND GRUBBING (LUMP)	202 PAVEMENT REMOVED (DRIVES) (S.Y.)	202 STRUCTURES REMOVED, AS PER PLAN (EACH)	202 UTILITY POLE RELOCATED, AS PER PLAN (EACH)
	EXISTING AND PROPOSED R.O.W.		L.SUM		L.SUM	
	RETAIL INTERSECTION #4				L.SUM	
	CENTRAL AVENUE			L.SUM	L.SUM	L.SUM
	TOTALS		L.SUM	L.SUM	L.SUM	L.SUM

NOTE:

Demolition and Removal Of All Items Shall Be The Responsibility Of The Contractor. This Work Will Include But Is Not Exclusive To The Removals According To This Plan. It Is The Contractors Responsibility To Verify The Extent of Work Described in These Plans. The Contractor Will Also Be Responsible For All Items Visible By Normal Inspection Methods And Will Be Included Under Item 202 Structures Removed, As Per Plan.

UNDERGROUND UTILITIES

TWO WORKING DAYS BEFORE YOU DIG

CALL 800-362-2764 (TOLL FREE)
OHIO UTILITIES PROTECTION SERVICE

NON MEMBERS
MUST BE CALLED DIRECTLY

LEGEND

- Buildings To Be Demolished
- Pavement Removed
- Structures Removed

N

DRAWN JWS
CHECKED JLW

0' 10' 20' 40'
HORIZONTAL
SCALE IN FEET

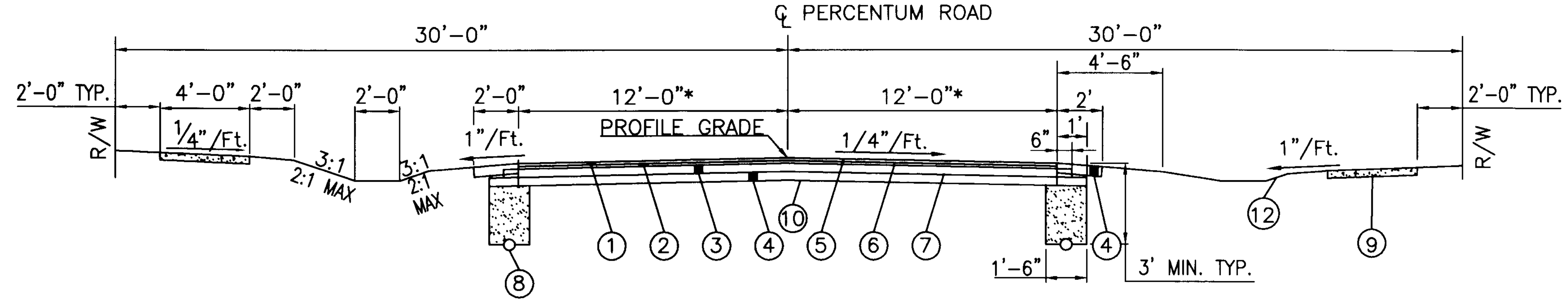
SCHEMATIC AND DEMOLITION PLAN

LUC-PERCENTUM ROAD

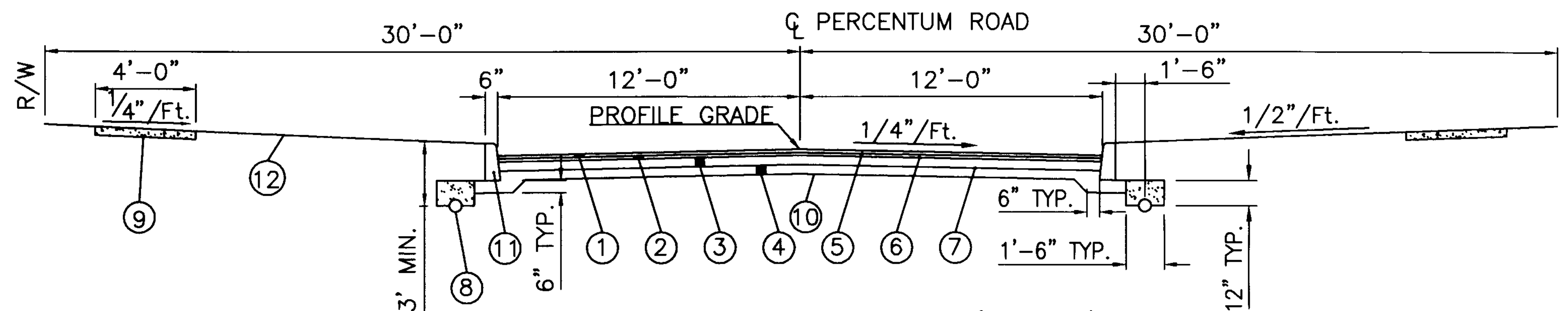
B157A1D

FILE 774

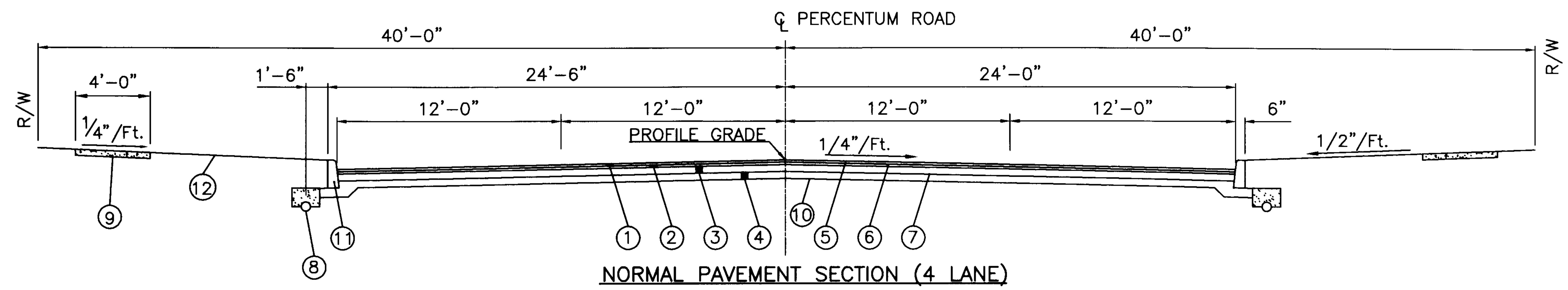
S:\PROJECTS\CIV\B157A1D\ROADWAY\B157A1DA\B157A1DA.DP02
CAD Dwg. Scale: (Eng.) 1=1
Last CAD Revision: 11/19/01
Last Revision By: jws
Description: FINAL



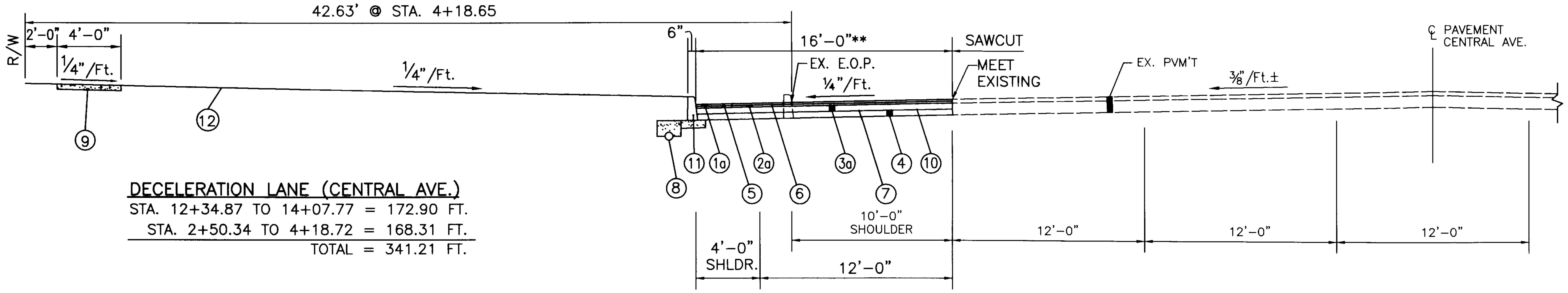
NORMAL PAVEMENT SECTION (2 LANE~NO CURB)
STA. 19+86.19 TO 20+67.25 = 81.06 FT.



NORMAL PAVEMENT SECTION (2 LANE)
STA. 16+09.69 TO 18+78.20 = 268.51 FT.



NORMAL PAVEMENT SECTION (4 LANE)
STA. 11+03.69 TO 12+28.77 = 125.08 FT.
STA. 13+24.13 TO 15+11.91 = 187.78 FT.
TOTAL = 312.86 FT.



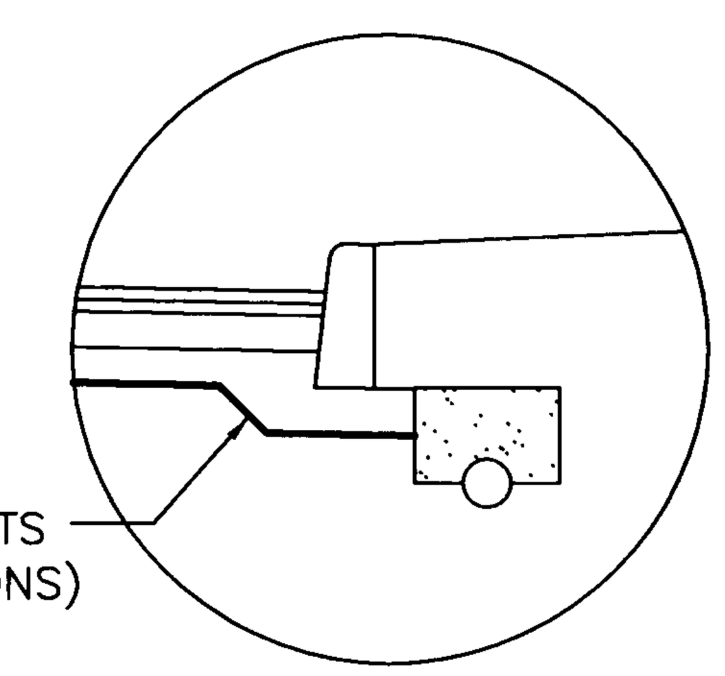
DECELERATION LANE (CENTRAL AVE.)
STA. 12+34.87 TO 14+07.77 = 172.90 FT.
STA. 2+50.34 TO 4+18.72 = 168.31 FT.
TOTAL = 341.21 FT.

LEGEND

1. ITEM 448 - 1½" ASPHALT CONCRETE, SURFACE COURSE, TYPE 1, PG 64-22, AS PER PLAN
1a. ITEM 448 - 1½" ASPHALT CONCRETE, SURFACE COURSE, TYPE 1H, PG 70-22, AS PER PLAN
2. ITEM 448 - 1½" ASPHALT CONCRETE, INTERMEDIATE COURSE, TYPE 2, PG 64-22, AS PER PLAN
2a. ITEM 448 - 1¾" ASPHALT CONCRETE, INTERMEDIATE COURSE, TYPE 2, PG 64-28, AS PER PLAN
3. ITEM 302 – 4" BITUMINOUS AGGREGATE BASE, PG 64–22, AS PER PLAN
3a. ITEM 302 – 10" BITUMINOUS AGGREGATE BASE, PG 64–22, AS PER PLAN
4. ITEM 304 – 6" AGGREGATE BASE, AS PER PLAN
5. ITEM 407 – TACK COAT FOR INTERMEDIATE COURSE (SEE GENERAL NOTES)
6. ITEM 407 – TACK COAT (SEE GENERAL NOTES)
7. ITEM 408 – BITUMINOUS PRIME COAT (0.40 GAL/SQ. YD.)
8. ITEM 605 – 6" SHALLOW PIPE UNDERDRAIN
9. ITEM 608 – 4" CONCRETE WALK
10. ITEM 203 – SUBGRADE COMPACTION
11. ITEM 830 – LUCAS COUNTY STANDARD DRAWING, CONCRETE CURB TYPE "A"
12. ITEM 870– SEEDING AND MULCHING (SEE GENERAL NOTES)

* Varies From 12' @ STA. 20+32.25 To 8.8'± @ STA. 20+67.25 = 35.00 FT. (MEET EXISTING PAVEMENT AT STA. 20+67.25)

** VARIES FROM 16'–0" @ STA. 13+57.77 TO 10'–0" @ STA. 14+07.77 = 50.00 FT.
VARIES FROM 16'–0" @ STA. 3+69.26 TO 10'–0" @ STA. 4+18.65 = 50.00 FT.



SUBGRADE COMPACTION LIMITS (TYPICAL FOR CURBED SECTIONS)

CALCULATED MDV
CHECKED JLW

TYPICAL SECTIONS

LUC-PERCENTUM ROAD

B157A1D

File 774

CALCULATED MDV
CHECKED JLW

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:

GAS
COLUMBIA GAS
333 SOUTH ERIE ST.
TOLEDO, OHIO 43602
(419)252-8111

ELECTRIC
TOLEDO EDISION
300 MADISON AVE.
MAIL STOP 880
TOLEDO, OHIO 43652-0001
(419)249-5131

CABLE
BUCKEYE CABLE
4818 ANGOLA RD.
TOLEDO, OHIO 43615-6411
(419)389-9051

WATER & SANITARY
LUCAS COUNTY SANITARY ENGINEER
1111 SOUTH McCORD ST.
TOLEDO, OHIO 43615
(419)213-2926

TOLEDO WATER
401 SOUTH ERIE ST.
TOLEDO, OHIO 43602
(419)936-2830

STORM
SYLVANIA TOWNSHIP
4927 HOLLAND SYLVANIA RD.
SYLVANIA, OHIO 43560
(419)882-0031

LUCAS COUNTY ENGINEER
ONE GOVERNMENT CENTER
SUITE 870
TOLEDO, OHIO
(419)213-4540

AT&T
7630 FINZEL RD.
WHITEHOUSE, OHIO 43571
(419)877-0413

WILLIAMS COMMUNICATIONS
630 OLIVER ST.
TOLEDO, OHIO 43609
(419)244-1931

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.

CONVERSION OF STANDARD CONSTRUCTION DRAWINGS
THE METRIC STANDARD DRAWINGS REFERENCED IN THIS PLAN SHALL BE CONVERTED TO ENGLISH UNITS USING THE SI (METRIC) TO ENGLISH CONVERSION FACTORS PROVIDED IN SECTION 109.011 OF THE 1997 CONSTRUCTION AND MATERIALS SPECIFICATIONS. THE APPENDIX OF ASTM E 380 SHALL BE UTILIZED FOR ANY ADDITIONAL CONVERSION FACTORS REQUIRED. CONVERSIONS SHALL BE APPROPRIATELY PRECISE AND SHALL REFLECT STANDARD INDUSTRY ENGLISH VALUES WHERE SUITABLE.

CLEARING AND GRUBBING
ALTHOUGH THERE ARE NO TREES OR STUMPS SPECIFICALLY MARKED FOR REMOVAL WITHIN THE LIMITS OF THE PROJECT, A LUMP SUM QUANTITY HAS BEEN INCLUDED IN THE GENERAL SUMMARY FOR ITEM 201, CLEARING AND GRUBBING. ALL PROVISIONS AS SET FORTH IN THE SPECIFICATIONS UNDER THIS ITEM SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 201, CLEARING AND GRUBBING.

MONUMENTS
MONUMENTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH DETAILS AS SHOWN ON THE STANDARD CONSTRUCTION DRAWINGS AND AT THE LOCATIONS SHOWN ON SHEET NOS. 9-11/25.

EMBANKMENT, AS PER PLAN
THE COMPOSITION OF EMBANKMENT MATERIAL USED WITHIN THE TOP SIX (6) INCHES PLACED, SHALL BE FREE OF STONES AND SHALL NOT CONTAIN MORE THAN 50% SAND UNLESS OTHERWISE APPROVED IN WRITING BY THE ENGINEER. THIS APPLIES TO ALL AREAS TO BE SEEDED WITHIN THE PROJECT LIMITS.

ITEM 203, SUBGRADE COMPACTION, AS PER PLAN
THE SUBGRADE SHALL BE COMPACTED SO THAT THE TOP 12" MEET ODOT SPECIFICATIONS 203.13 FOR COMPACTION. THIS COMPACTION WILL BE PERFORMED TO THE SATISFACTION OF THE LUCAS COUNTY ENGINEER AND THE SUBGRADE WILL BE PROOF ROLLED JUST PRIOR TO PLACING THE PAVING MATERIALS WITH A LOADED TANDEM AXLE DUMP TRUCK TO VISUALLY OBSERVE STABILITY OF THE SUBGRADE. COST FOR FOR PROOF ROLLING SUBGRADE SHALL BE INCLUDED IN ITEM 203, SUBGRADE COMPACTION, A.P.P. SHOULD THE PROOF ROLLING NOT SATISFY THE LUCAS COUNTY ENGINEER, THE FOLLOWING CONTINGENCY QUANTITIES HAVE BEEN ESTABLISHED TO BE USED AS DIRECTED BY THE ENGINEER FOR STABILIZING THE SUBGRADE:

ITEM 203 100 CU. YD. EXCAVATION, NOT INCLUDING EMBANKMENT CONSTRUCTION
ITEM 304 100 CU. YD. AGGREGATE BASE

THESE QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY TOTALS.

TOPSOIL
THE FOLLOWING CONTINGENCY QUANTITY HAS BEEN ESTABLISHED TO BE USED AS DIRECTED BY THE ENGINEER:

ITEM 653 217 CU. YD. TOPSOIL FURNISHED AND PLACED

THIS QUANTITY HAS BEEN INCLUDED IN THE GENERAL SUMMARY TOTALS.

SEEDING AND MULCHING
SEEDING AND MULCHING SHALL BE APPLIED TO ALL AREAS OF EXPOSED SOIL 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 ITEM 870, SEEDING AND MULCHING, ARE BASED ON THESE LIMITS.

SEEDING AND MULCHING OF LAWNS
IN ADDITION TO "AREAS IN FRONT OF RESIDENCES" REFERRED TO IN 659.01, THE SPECIAL PREPARATION SHALL BE EXTENDED TO ENCOMPASS ALL LAWNS AND/OR LAWN-LIKE AREAS AS DETERMINED BY THE ENGINEER.

ITEM 651 – TOPSOIL STOCKPILED
THE MATERIAL FOR THIS ITEM SHALL BE OBTAINED FROM AREAS WITHIN THE PROPOSED RIGHT OF WAY, AS TABULATED ELSEWHERE IN THESE PLANS, AND STOCKPILED FOR PLACEMENT UNDER ITEM 652. NO BORROW ITEM IS ANTICIPATED FOR THIS PURPOSE.

PROVISION OF THIS 651 ITEM SHALL NOT BE CONSTRUED AS A WAIVER OF THE PROVISIONS OF 201.04. SOD AND INCIDENTAL TOPSOIL REMOVED ELSEWHERE ON THIS PROJECT FOR SALVAGE, FOR USE AS DESCRIBED IN 203.04(E), SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE VARIOUS 203 ITEMS.

TEMPORARY SOIL EROSION AND SEDIMENT CONTROL
THE FOLLOWING ESTIMATED QUANTITIES ARE TO BE USED AS PLACED BY THE CONTRACTOR WITH THE ENGINEER'S CONCURRENCE FOR TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES:

870, COMMERCIAL FERTILIZER 0.03 TON
870, WATER 2 M.GAL.
870, TEMPORARY SEEDING AND MULCHING 10145 SQ. YD.
870, TEMPORARY PERIMETER FILTER FABRIC FENCE 350 LIN. FT.

EROSION CONTROL
ITEM 601 IS PROVIDED IN THE PLANS FOR EROSION CONTROL. TURF OF A STABLE NATURE SHALL NOT BE REMOVED IN ORDER TO PLACE 601. THE ENGINEER SHALL CHECK AND NON-PERFORM QUANTITIES OR ADJUST LOCATIONS AND QUANTITIES OF THIS ITEM WHERE INDICATED BY FIELD CONDITIONS DURING CONSTRUCTION. IN ADDITION, THESE ITEMS SHALL MEET THE REQUIREMENT OF 108.04.

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.

UNTREATED SEPTIC CONNECTIONS
THIS PLAN MAKES NO PROVISION FOR CONNECTING, NOR SHALL THE ENGINEER OR CONTRACTOR CONNECT, ANY UNTREATED SEPTIC DRAINAGE INTO THE HIGHWAY DRAINAGE SYSTEM. ANY PIPE CARRYING UNTREATED SEPTIC FLOW SHALL BE PLUGGED WITH CLASS C CONCRETE AT THE RIGHT OF WAY LINE. PAYMENT FOR PLUGGING SHALL BE INCLUDED IN THE CONTRACT PRICE FOR ITEM 203 EXCAVATION.

REVIEW OF DRAINAGE FACILITIES
BEFORE ANY WORK IS STARTED ON THE PROJECT AND AGAIN BEFORE FINAL ACCEPTANCE BY THE COUNTY, REPRESENTATIVES OF THE COUNTY, ODOT AND THE CONTRACTOR 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 COUNTY.

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 COUNTY.

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.

RESIDENTIAL AND COMMERCIAL DRAINAGE CONNECTIONS
EXISTING ROOF DRAINS, FOOTER DRAINS, OR YARD DRAINS, DISTURBED BY THE WORK, SHALL BE PROVIDED WITH UNOBSTRUCTED OUTLETS BY CONNECTING A CONDUIT THROUGH THE CURB OR INTO A DRAINAGE STRUCTURE. THE LOCATION, TYPE, SIZE AND GRADE OF THE NEW CONDUIT REQUIRED TO REPLACE OR EXTEND THE EXISTING DRAIN WILL BE DETERMINED BY THE ENGINEER.

THE FOLLOWING CONDUIT TYPES MAY BE USED: 707.33, 707.42, 707.43 AND 707.45.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER FOR THE WORK NOTED ABOVE:

603, 6" CONDUIT, TYPE B, FOR DRAINAGE CONNECTION 50 LIN. FT.
603, 6" CONDUIT, TYPE C, FOR DRAINAGE CONNECTION 50 LIN. FT.

603, 6" CONDUIT, TYPE E, FOR DRAINAGE CONNECTION 50 LIN. FT.
603, 6" CONDUIT, TYPE F, FOR DRAINAGE CONNECTION 50 LIN. FT.

GENERAL NOTES

LUC-PERCENTUM ROAD

B157A1D
FILE 774

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CAD Dwg. Scale: (Eng.) 1=1
Last CAD Revision: 11/19/01
Last Revision By: jws
Description: FINAL

MANHOLES, CATCH BASINS AND INLETS REMOVED OR ABANDONED
ALL CASTINGS SHALL BE CAREFULLY REMOVED AND STORED WITHIN THE RIGHT OF WAY FOR SALVAGE BY TOWNSHIP FORCES.

PAYMENT FOR ALL OF THE ABOVE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE PERTINENT 202 ITEM.

THE FOLLOWING ESTIMATED QUANTITIES ARE TO BE USED AS DIRECTED BY THE ENGINEER

202	2 EACH	MANHOLE REMOVED
202	4 EACH	CATCH BASIN OR INLET REMOVED

ITEM 603 – CONDUIT, AS PER PLAN
WHERE TYPE B OR C CONDUIT OF LESS THAN OR EQUAL TO 18" DIAMETER IS SPECIFIED,
THE CONTRACTOR MAY USE REINFORCED CONCRETE PIPE (706.02) WITH 706.11 JOINTS.

THE CONTRACTOR MAY ALSO USE POLYVINYL CHLORIDE (P.V.C.) SEWER PIPE AND FITTINGS WITH PREMIUM JOINTS AS PER O.D.O.T. SPECIFICATION 707.45 FOR CONDUITS LESS THAN OR EQUAL TO 15" DIAMETER. FOR 18" DIAMETER CONDUIT, THIS P.V.C. CONDUIT SHALL BE AS PER ASTM DESIGNATION F679. THE CONTRACTOR MAY ALSO USE P.V.C. CONDUIT O.D.O.T. SPECIFICATION 707.42 OR O.D.O.T. SPECIFICATION 707.43 FOR CONDUITS LESS THAN OR EQUAL TO 18" DIAMETER IN LIEU OF THE P.V.C. CONDUIT PREVIOUSLY SPECIFIED.

THE CONTRACTOR MAY ALSO USE CORRUGATED POLYETHYLENE SMOOTH LINED PIPE O.D.O.T. SPECIFICATION 707.33 WITH IN-LINE BELL COUPLINGS AND "O-RING" RUBBER GASKETS MEETING ASTM F477 FOR CONDUITS LESS THAN OR EQUAL TO 18" DIAMETER.

POLYVINYL CHLORIDE OR CORRUGATED POLYETHYLENE CONDUIT WILL ONLY BE PERMITTED AT THOSE LOCATIONS WHERE A MINIMUM OF ONE FOOT (1') OF COVER EXISTS FROM THE TOP OF THE PIPE TO THE GROUND SURFACE.

THE CLASS B BEDDING, TYPE 3 (703.11), SHALL EXTEND TO A HEIGHT OF SIX INCHES (6") ABOVE THE TOP OF THE POLYVINYL CHLORIDE OR CORRUGATED POLYETHYLENE CONDUIT.

THE INFILTI :ION REQUIREMENT IN O.D.O.T. SPECIFICATION 603.06 SHALL BE WAIVED FOR ALL PERMITTED TYPES OF CONDUIT.

GRADING AND CLEANUP
GRADING AND CLEANUP SHALL FOLLOW CLOSELY BEHIND ANY DRAINAGE CONSTRUCTION. THIS WORK SHALL INCLUDE GRADING, TO ACHIEVE POSITIVE DRAINAGE OF WORK LIMITS AND CLEANUP INCLUDING ANY REMOVAL FROM THE SITE OF ANY MATERIALS, SPOIL, ETC. THIS GRADING AND CLEANUP SHALL BE PERFORMED SIMULTANEOUSLY WITH ALL DRAINAGE CONSTRUCTION PHASES OF THE PROJECT. ALL COSTS OF EQUIPMENT, MATERIAL AND LABOR NEEDED TO PERFORM THIS GRADING AND CLEANUP SHALL BE INCLUDED IN THE PERTINENT CONDUIT AND DRAINAGE STRUCTURE ITEM.

IF THE CONTRACTOR DOES NOT CONTINUOUSLY PERFORM THE WORK WITH REASONABLE PROGRESS TO THE SATISFACTION OF THE ENGINEER, OR FAILS TO PERFORM THE GRADING AND CLEANUP WORK, THEY WILL BE NOTIFIED IN WRITING BY THE LUCAS COUNTY ENGINEER. UPON RECEIPT OF THIS NOTIFICATION, THE CONTRACTOR HAS THREE (3) BUSINESS DAYS TO COMMENCE DEFICIENT WORK AS INDICATED IN THE WRITTEN NOTIFICATION. LIQUIDATED DAMAGES AS PER THE TABLE IN SECTION 108.07 OF ODOT CONSTRUCTION AND MATERIAL SPECIFICATIONS WILL BE ASSESSED FOR EACH CALENDAR DAY BEHIND THREE (3) BUSINESS DAYS THAT THE WORK DOES NOT COMMENCE, AND FOR EACH DAY THEREAFTER THAT THE WORK IS NOT CONTINUOUS.

ITEM 302, BITUMINOUS AGGREGATE BASE PG 64–22, AS PER PLAN
THIS ITEM SHALL BE AS PER 302, EXCEPT FOR THE FOLLOWING REVISIONS TO THE 302.02 COMPOSITION SECTION.

THE ACCEPTANCE RANGE OF AIR VOIDS PERCENT SHALL BE REVISED TO 4.0 MINIMUM AND 6.0 MAXIMUM.

THE MINIMUM BITUMEN CONTENT SHALL BE FOUR PERCENT (4%) OF THE TOTAL MIX IN LIEU OF THE THREE PERCENT (3%) INDICATED IN 302.02.

SOME RAP COMPOSITIONS USED IN THE JOB MIX FORMULA MAY REQUIRE REVISING THE BINDER FROM PG 64–22 TO PG 58–28. THE CONTRACTOR SHALL SUBMIT TO THE LUCAS COUNTY ENGINEER FOR APPROVAL, ALL INFORMATION TO SUPPORT SUCH A REVISION PRIOR TO PROCEEDING WITH THE WORK.

ITEM 407 – TACK COAT AND ITEM 407 – TACK COAT FOR INTERMEDIATE COURSE
THE RATE OF APPLICATION OF THE 407 TACK COAT SHALL BE SUBJECT TO ADJUSTMENT AS DIRECTED BY THE ENGINEER. FOR ESTIMATING PURPOSES ONLY, THE PLAN QUANTITIES INDICATE AN AVERAGE APPLICATION RATE OF:

407, TACK COAT FOR INTERMEDIATE COURSE 0.04 GAL. PER SQ. YARD
407, TACK COAT 0.35 GAL. PER SQ. YARD

TRENCH FOR WIDENING
TRENCH EXCAVATION FOR BASE WIDENING SHALL BE ONLY ON ONE SIDE OF THE PAVEMENT AT A TIME. THE OPEN TRENCH SHALL BE ADEQUATELY MAINTAINED AND PROTECTED WITH DRUMS OR BARRICADES AT ALL TIMES. PLACEMENT OF PROPOSED SUBBASE AND BASE MATERIAL SHALL FOLLOW AS CLOSELY AS POSSIBLE BEHIND EXCAVATION OPERATIONS. THE LENGTH OF WIDENING TRENCH WHICH IS OPEN AT ANY ONE TIME SHALL BE HELD TO A MINIMUM AND SHALL AT ALL TIMES BE SUBJECT TO APPROVAL OF THE ENGINEER.

OVERNIGHT TRENCH CLOSING
THE BASE WIDENING SHALL BE COMPLETED TO A DEPTH OF NO MORE THAN 3 1/2 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.

DUST CONTROL
THE CONTRACTOR SHALL FURNISH AND APPLY WATER AND CALCIUM CHLORIDE FOR DUST CONTROL AS DIRECTED BY THE ENGINEER. THE FOLLOWING CONTINGENCY QUANTITIES HAVE BEEN INCLUDED FOR DUST CONTROL PURPOSES:
616, WATER 10 M. GAL.
616, CALCIUM CHLORIDE 1 TON

POWER BROOM
THE CONTRACTOR SHALL POWER BROOM SWEEP THE ROADWAY AT THE END OF EACH DAY IF DEEMED NECESSARY BY THE ENGINEER. COSTS ARE INCLUDED IN MAINTAINING TRAFFIC, ITEM 614.

IF THE CONTRACTOR FAILS TO DO ANY OF THE WORK AS PER GENERAL NOTES AND STANDARD SPECIFICATIONS, THE WORK WILL BE DONE BY LUCAS COUNTY FORCES AND ALL COSTS WILL BE DEDUCTED FROM PAYMENTS TO THE CONTRACTOR. A MINIMUM OF $500 WILL BE DEDUCTED FOR EACH CALLOUT OF LUCAS COUNTY FORCES.

TEMPORARY WORK ZONE MARKINGS AND SIGNS
THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER FOR TEMPORARY WORK ZONE PAVEMENT MARKINGS AND SIGNS PER THE REQUIREMENTS 614.04 AND 614.10.

614, TEMPORARY LANE LINE, CLASS II	0.13 MI.
614, TEMPORARY CENTER LINE, CLASS II	0.27 MI.
614, TEMPORARY CHANNELIZING LINE, CLASS I	1230 LIN. FT.
614, TEMPORARY STOP LINE, CLASS I	239 LIN. FT.

TRAFFIC CONTROL
AT THE TIME OF REMOVAL OF THE PAVEMENT ON THE EXISTING PERCENTUM ROAD, THE CONTRACTOR SHALL REMOVE THE EXISTING EDGE LINES AND SIGNING AT THE CENTRAL AVENUE/PERCENTUM ROAD INTERSECTION. THE EDGE LINES SHALL THEN BE REPLACED SUCH THAT THE EDGE LINE IS CONTINUOUS THROUGH THE REMOVED INTERSECTION ON CENTRAL AVENUE. SEE SHEET 4 FOR REMOVAL QUANTITIES.

THE FOLLOWING ESTIMATED QUANTITIES ARE TO BE USED AS DIRECTED BY THE ENGINEER

642	EDGE LINE	0.02 MI.
642	REMOVAL OF PAVEMENT MARKING	500 LIN. FT.

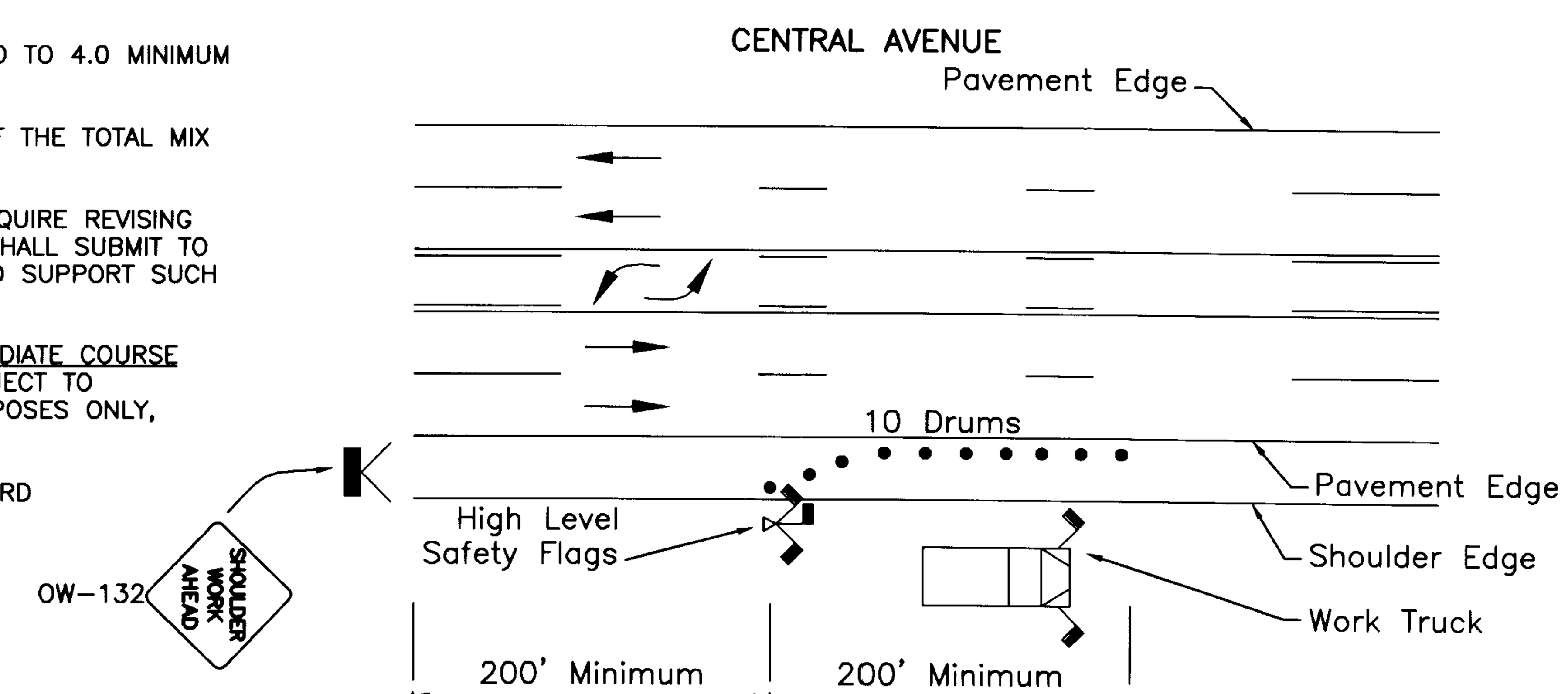
RAISED PAVEMENT MARKERS AND PAVEMENT MARKINGS ON CENTRAL AVENUE SHALL BE REMOVED AND REPLACED AT THE LOCATIONS INDICATED ON SHEET 29 & 30.

THE FOLLOWING ESTIMATED QUANTITIES ARE TO BE USED AS DIRECTED BY THE ENGINEER

202	RAISED PAVEMENT MARKER REMOVED	34 EACH
642	REMOVAL OF PAVEMENT MARKING	300 LIN. FT.

ITEM 614 MAINTAINING TRAFFIC

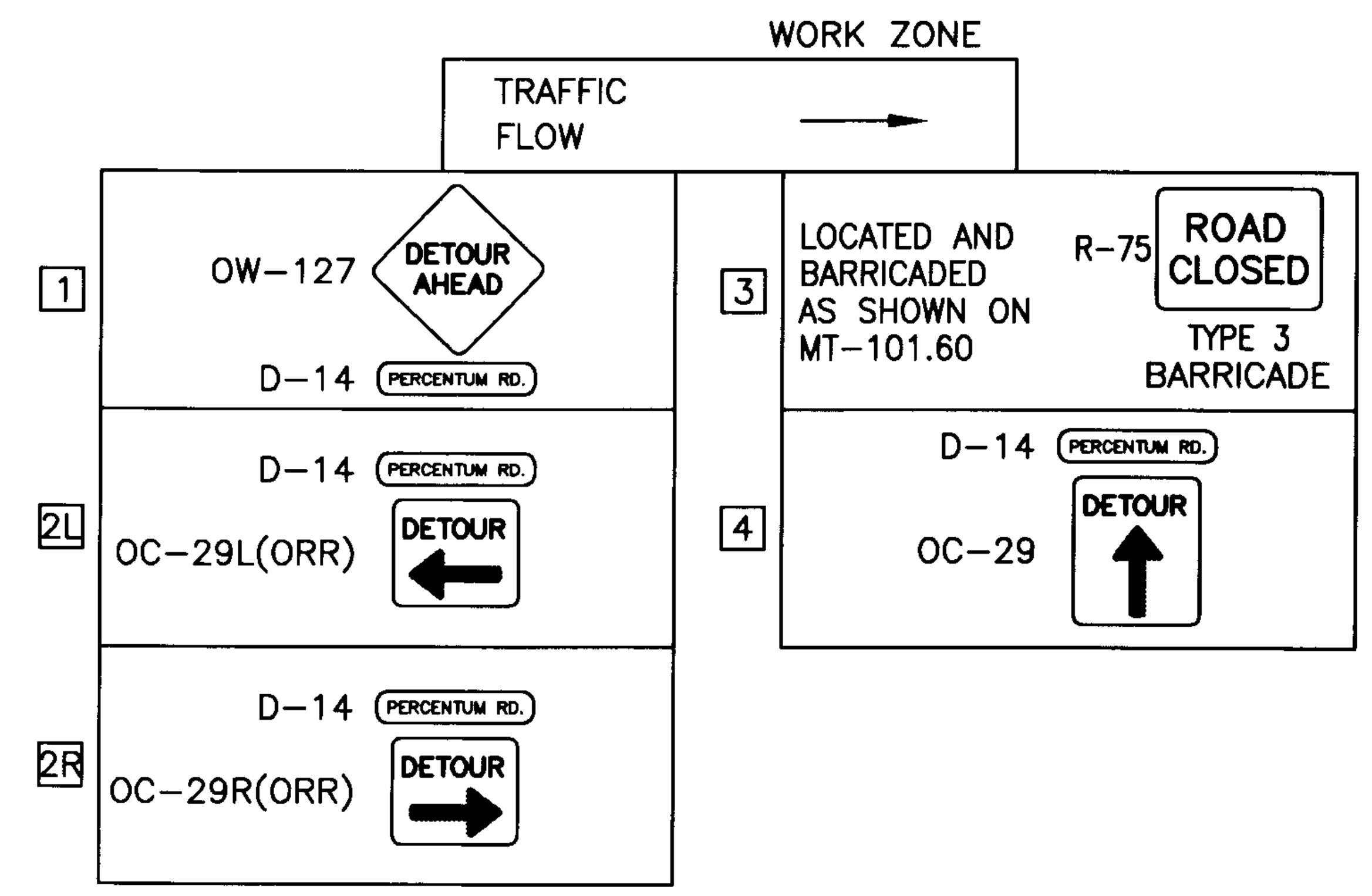
CENTRAL AVENUE
DURING CONSTRUCTION OF THE DECELERATION LANES ON CENTRAL AVENUE, THE WORK ARE IS LIMITED TO THE EXISTING 10' SHOULDER. TRAFFIC SHALL BE MAINTAINED IN ALL EXISTING TRAVELLED LANES DURING CONSTRUCTION ON CENTRAL AVENUE.

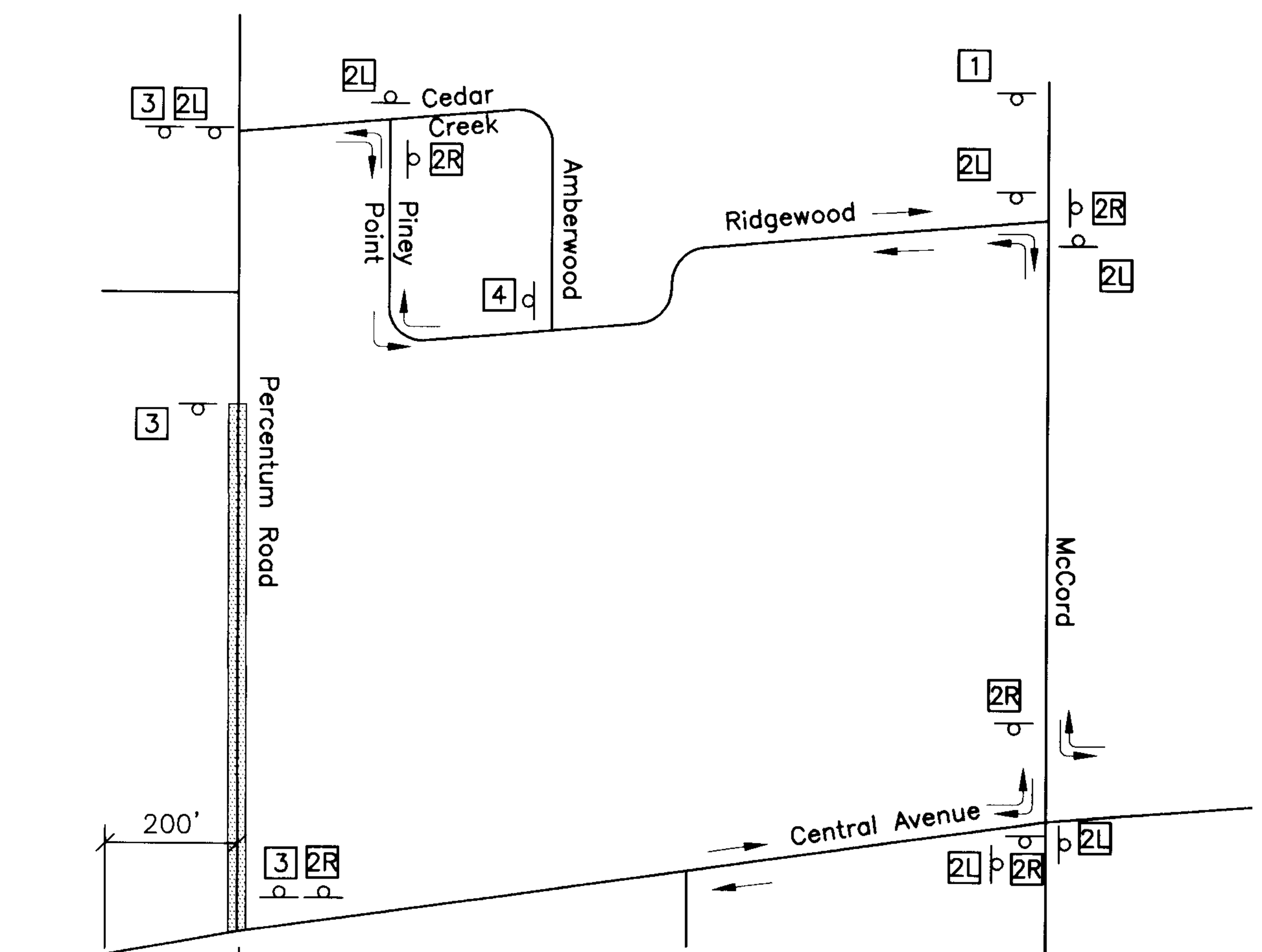


ITEM 614 MAINTAINING TRAFFIC – CON'T

PERCENTUM ROAD
TWO-WAY TRAFFIC SHALL BE MAINTAINED AT ALL THE TIMES UNTIL THE DETOUR IS IN EFFECT. LUCAS COUNTY WILL FURNISH, INSTALL, MAINTAIN, AND REMOVE SIGNING ALONG THE DETOUR ROUTE AS SHOWN. THE CONTRACTOR SHALL NOTIFY THE STATE AND THE LUCAS COUNTY ENGINEER FOURTEEN (14) DAYS IN ADVANCE OF THE PLANNED DATE OF CLOSURE. THE DURATION OF THE DETOUR SHALL BE LIMITED TO 14 CONSECUTIVE CALENDAR DAYS. THE FIRST DAY THE DETOUR IS IN EFFECT SHALL BE THE BEGINNING OF THE DETOUR PERIOD. THE 14th DAY SHALL BE CONSIDERED AS AN INTERIM COMPLETION DATE. ON OR BEFORE THE 14th DAY PERCENTUM RD. SHALL BE OPENED IN A SAFE, CONVENIENT CONDITION TO THE TRAVELING PUBLIC. IF THE ROADWAY IS NOT OPENED BY THIS INTERIM COMPLETION DATE LIQUIDATED DAMAGES SHALL BE ASSESSED AS PER SECTION 107.08 OF THE O.D.O.T. CONSTRUCTION AND MATERIALS SPECIFICATIONS.

LEGEND





DETOUR PLAN
(NOT TO SCALE)

ADDITIONAL SIGNS AND/OR BARRICADES REQUIRED TO PROVIDE CLARITY TO THE TRAFFIC CONTROL SCHEMES AS PER PLAN OR THE O.M.U.T.C.D. OR ANY OTHER SIGNS AND/OR BARRICADES THAT REQUIRE RELOCATION TO PROVIDE CLARITY SHALL BE PROVIDED BY THE CONTRACTOR.

ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH ITEM 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 PLAN.

CALCULATED MDV CHECKED JLW

GENERAL NOTES / MAINTENANCE OF TRAFFIC

LUC - PERCENTUM ROAD

B157A1D
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ITEM	2	3	5	6	9	10	11	12	13	14	15	16	20	31	ITEM	TOTAL QUANTITY	UNIT	DESCRIPTION	A.P.P. REF.
																		ROADWAY	
202	LUMP	LUMP													201	LUMP	LUMP	CLEARING AND GRUBBING	.
202				50											202	50	EACH	RAISED PAVEMENT MARKERS REMOVED	.
202						230									202	230	Sq. Yd.	WEARING COURSE REMOVED	.
																			.
202	LUMP	1													202	LUMP	EACH	STRUCTURE REMOVED, AS PER PLAN	2
202	435														202	435	EACH	PIPE REMOVED, OVER 24"	.
202	3420														202	3420	Lin. Ft.	PIPE REMOVED, 24" AND UNDER	.
202	2438														202	2438	Sq. Yd.	PAVEMENT REMOVED	.
202												358	305		202	663	Lin. Ft.	CURB REMOVED	.
202	LUMP	LUMP													202	LUMP	LUMP	UTILITY POLE REMOVED AND RELOCATED	.
203			100		14054										203	14154	Cu. Yd.	EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION	.
203					1619										203	1619	Cu. Yd.	EMBANKMENT	.
203					7183										203	7183	Sq. Yd.	SUBGRADE COMPACTION, AS PER PLAN	5
604						2	2	4							604	8	EACH	MONUMENT ASSEMBLY, AS PER PLAN	5
608						1482	2815	1979		1818	1690			1257	608	11041	Sq. Ft.	4" CONCRETE WALK	.
608						7	7	6		2	4				608	26	EACH	CURB RAMP	.
607														1134	607	1134	LIN. FT.	FENCE, TYPE CL	.
607														2	607	2	EACH	GATE, TYPE CL	.
																		DRAINAGE	
601									78						601	78	Lin. Ft.	PAVED GUTTER	.
601														9	601	9	Cu. Yd.	ROCK CHANNEL PROTECTION	.
602									2.64	1.32					602	2.64	Cu. Yd.	CONCRETE MASONRY (HEADWALLS)	.
603			50		220										603	270	Lin. Ft.	6" CONDUIT, TYPE B, AS PER PLAN	6
603			50												603	50	Lin. Ft.	6" CONDUIT, TYPE C, AS PER PLAN	6
603			50												603	50	Lin. Ft.	6" CONDUIT, TYPE E, AS PER PLAN	6
603			50												603	50	Lin. Ft.	6" CONDUIT, TYPE F, AS PER PLAN	6
603																			
603										8					603	8	Lin. Ft.	12" CONDUIT, TYPE C, AS PER PLAN	6
603								36							603	36	Lin. Ft.	15" CONDUIT, TYPE B, AS PER PLAN	6
603								74		77					603	151	Lin. Ft.	18" CONDUIT, TYPE C, AS PER PLAN	6
603							46	24							603	70	Lin. Ft.	24" CONDUIT, TYPE B, AS PER PLAN	6
603							54	50							603	104	Lin. Ft.	24" CONDUIT, TYPE C, AS PER PLAN	6
603								81			60				603	141	Lin. Ft.	30" CONDUIT, TYPE B, AS PER PLAN	6
603								8							603	8	Lin. Ft.	30" CONDUIT, TYPE C, AS PER PLAN	6
603							50	45							603	95	Lin. Ft.	36" CONDUIT, TYPE B, AS PER PLAN	6
603							256	167							603	423	Lin. Ft.	36" CONDUIT, TYPE C, AS PER PLAN	6
603										60					603	60	Lin. Ft.	42" CONDUIT, TYPE B, AS PER PLAN	6
603							170								603	170	Lin. Ft.	48" CONDUIT, TYPE C, AS PER PLAN	6
603									259						603	259	Lin. Ft.	54" CONDUIT, TYPE B, AS PER PLAN	6
603									57						603	57	Lin. Ft.	54" CONDUIT, TYPE C, AS PER PLAN	6
604							2	4		1	3				604	10	Each	TYPE 2-3 CATCH BASIN	.
604							1		1	2					604	4	Each	TYPE 2-5 CATCH BASIN	.
604							1	1							604	2	Each	No. 3 MANHOLE – 5' DIA.	.
604							1	1	1	1					604	4	Each	No. 3 MANHOLE – 6' DIA.	.
604									1						604	1	Each	No. 3 MANHOLE – 7' DIA.	.
604											1				604	1	Each	MANHOLE RECONSTRUCTED TO GRADE	.
605					2548										605	2548	Lin. Ft.	6" SHALLOW PIPE UNDERDRAIN	.
																		PAVEMENT	
302					741										302	741	Cu. Yd.	4" BITUMINOUS AGGREGATE BASE, PG 64-22, AS PER PLAN	6
302					384										302	384	Cu. Yd.	10" BITUMINOUS AGGREGATE BASE, PG 64-22, AS PER PLAN	6
304			100		1197										304	1297	Cu. Yd.	6" AGGREGATE BASE	.
304					3										304	3	Cu. Yd.	ADDITIONAL 6" AGGREGATE BASE (2' GRAVEL STRIP)	.
407					537										407	537	Gal.	TACK COAT	.
408					2685										408	2685	Gal.	BITUMINOUS PRIME COAT	.
448					279	10									448	289	Cu. Yd.	ASPHALT CONCRETE, SURFACE COURSE, TYPE 1, PG 64-22, AS PER PLAN	4
448					58										448	58	Cu. Yd.	ASPHALT CONCRETE, SURFACE COURSE, TYPE 1H, PG 70-22, AS PER PLAN	4
448					279										448	279	Cu. Yd.	ASPHALT CONCRETE, INTERMEDIATE COURSE, TYPE 2, PG 64-22, AS PER PLAN	4
448					67										448	67	Cu. Yd.	ASPHALT CONCRETE, INTERMEDIATE COURSE, TYPE 2, PG 64-28, AS PER PLAN	4
609					2359										609	2359	Lin. Ft.	LUCAS COUNTY STANDARD CURB, TYPE "A" (6")	.
609					710										609	710	Lin. Ft.	ODOT STANDARD CURB AND GUTTER, TYPE 2 (6")	.
609					132										609	132	Lin. Ft.	ODOT STANDARD CURB, TYPE 6 (6")	.
																		SANITARY SEWERAGE	
603	50														603	50	Lin. Ft.	8" CONDUIT, TYPE B, FOR SANITARY	.
603	50														603	50	Lin. Ft.	8" CONDUIT, TYPE C, FOR SANITARY	.

CALCULATED M.D.V.
CHECKED J.L.W.

GENERAL SUMMARY

LUC-PERCENTUM ROAD

B157A1D

FILE 774

S:\PROJECTS\CIV\B157A1D\ROADWAY\B157A1DA\B157A1DAGS01
CAD Dwg. Scale: (Eng.) 1=1
Last CAD Revision: 1/19/01
Last Revision By: jws
Description: FINAL

	SHEET NUMBER											TOTAL		
ITEM	2	3	5	6	9				14	27	ITEM	QUANTITY	UNIT	DESCRIPTION
														PAVEMENT MARKING AND SIGNING
621										15	621	15	EACH	CENTERLINE RAISED PAVEMENT MARKERS (TWO-WAY YELLOW)
621										26	621	26	EACH	CHANNELIZING LINE RAISED PAVEMENT MARKERS (TWO-WAY WHITE/RED)
621														
630										104	630	104	Lin. Ft.	GROUND MOUNTED SUPPORT, NO. 2
630										197	630	197	Lin. Ft.	GROUND MOUNTED SUPPORT, NO. 3
630										26	630	26	Lin. Ft.	GROUND MOUNTED SUPPORT, NO. 4
630										139	630	139	Sq. Ft.	SIGN, FLAT SHEET, TYPE G
642				500							642	500	Lin. Ft.	REMOVAL OF PAVEMENT MARKINGS
642										0.33	642	0.33	Mile	CENTERLINE, SOLID DOUBLE YELLOW
642				0.02						0.09	642	0.11	Mile	EDGE LINE
642										299	642	299	Lin. Ft.	DOTTED LINE, WHITE, 4"
642										1580	642	1580	Lin. Ft.	CHANNELIZING LINE
642										0.03	642	0.03	Mile	LANE LINE
642										259	644	259	Lin. Ft.	24" STOP LINE
642										535	644	535	Lin. Ft.	CROSSWALK LINE
642										9	644	9	EACH	96" WORD ON PAVEMENT
642										22	644	22	EACH	LANE ARROW
630	1	1									630	2	EACH	REMOVAL OF GROUND MOUNTED SIGN AND RE-ERECTION
														MAINTENANCE OF TRAFFIC
614				0.13							614	0.13	Mile	TEMPORARY LANE LINE, CLASS II
614				0.27							614	0.27	Mile	TEMPORARY CENTERLINE, CLASS II
614				1230							614	1230	Lin. Ft.	TEMPORARY CHANNELIZING LINE, CLASS II
614				259							614	259	Lin. Ft.	TEMPORARY STOP LINE, CLASS II
616				10							616	10	MGal.	WATER
616				1							616	1	Ton	CALCIUM CHLORIDE
														MISCELLANEOUS
870			500								870	500	Sq. Yd.	TEMPORARY SEEDING AND MULCHING
870			350								870	350	Lin. Ft.	TEMPORARY PERIMETER FILTER FABRIC FENCE
653			217								653	217	Cu. Yd.	TOPSOIL, FURNISHED AND PLACED
659					28						870	28	MGal.	WATER
659					1.37						870	1.37	Ton	COMMERCIAL FERTILIZER
659					10145						870	10145	Sq. Yd.	SEEDING AND MULCHING
638									1		638	1	Each	FIRE HYDRANT EXTENDED AND ADJUSTED TO GRADE
651					1691						651	1691	Cu. Yd.	TOPSOIL STOCKPILED
652					1691						652	1691	Cu. Yd.	PLACING STOCKPILED TOPSOIL

CALCULATED M.D.V.
CHECKED J.L.W.

GENERAL SUMMARY

LUC-PERCENTUM ROAD

B157A1D

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UNDERDRAIN SUBSUMMARY

Station Or Location From	Station Or Location To Or At	Side	605 6" Shallow Pipe Underdrain Lin.Ft.	603 6" Conduit, Type B Lin.Ft.
11+44.88	12+54.96	Rt.	153.85	
12+76.71	14+15.78	Rt.	194.05	10
14+15.78	15+39.95	Rt.	128.07	10
15+83.48	17+74.32	Rt.	220.55	10
17+74.32	19+13.76	Rt.	139.24	10
19+46.38	20+55.78	Rt.	102.19	10
20+55.78	20+67.25	Rt.	2.65	10
11+44.88	12+76.50	Lt.	171.82	
13+11.25	14+15.73	Lt.	140.29	10
14+15.78	15+53.91	Lt.	150.65	10
15+85.36	17+74.32	Lt.	203.60	10
17+74.32	19+12.10	Lt.	128.21	10
19+51.67	20+50.78	Lt.	101.51	10
20+50.78	20+67.25	Lt.	5.45	10
Central Ave. Deceleration Lane – East				
10+41.91	10+81.95	Rt.	24.12	10
10+81.95	10+87.65	Rt. & Lt.	98.83	10
11+33.97	12+02.00	Rt. & Lt.	127.81	10
12+02.00	13+56.44	Rt.	144.23	10
13+56.44	14+07.77	Rt.	40.30	10
Central Ave. Deceleration Lane – West				
1+30.95	1+46.37	Rt.	5.71	10
1+46.37	1+75.05	Rt.	47.52	10
2+04.35	2+41.54	Rt.	62.02	10
2+41.54	3+53.41	Rt.	100.12	10
3+53.41	4+18.72	Rt.	55.10	10
Totals			2548	220

EARTHWORK AND SEEDING SUBSUMMARY

Sheet No.	Station Or Location From	Station Or Location To Or At	203 Excavation Not Incl. Embankment Construction Cu.Yd.	203 Embankment Cu.Yd.		659 Seeding And Mulching Sq.Yd.
Percentum Road						
21	10+21.82	12+50	927	461		1139
22	13+00	15+50	620	191		651
23	16+00	18+83.08	315	404		970
24	19+00	20+67.25	294	323		521
Central Avenue						
25	10+00	15+06.57	95	139		404
26	1+00	4+18.65	203	153		517
Detention Pond						
31	6+00	10+00	10700	·		4018
31	10+00	11+00	900	·		1925
Subtotals			·	·		·
TOTALS			14054	1619		10145

PAVEMENT SUBSUMMARY

* AS PER PLAN

Station From	Station To Or At	Side	Length Ⓛ Lin.Ft.	Width: Asph. Conc. Surf. Crse & Asph. Conc. Int.. Crse ① Lin.Ft.	Width: Bit. Agg. Base ② Lin.Ft.	Width: Aggregate Base ③ Lin.Ft.	Area: Asph. Conc. Surf. Crse & Asph. Conc. Int.. Crse Ⓛ*① ④ Sq.Ft.	Area: Bit. Agg. Base Ⓛx② ⑤ Sq.Ft.	Area: Aggregate Base Ⓛx③ ⑥ Sq.Ft.	203 Subgrade Compaction ⑥ x 1/9 Sq.Yd.	302 Bituminous Aggregate Base(302) T=4" ⑤ x 0.33 x 1/27 Cu.Yd.	302 Bituminous Aggregate Base(302) T=10" ⑤ x (10/12) x 1/27 Cu.Yd.	304 Aggregate Base(304) T=6" ⑥ x 0.50 x 1/27 * Cu.Yd.	304 Additional Gravel(304) T=6" 0.50 x Ⓛ x 1/27 x 2 * Cu.Yd.	407 Tack Coat Surface Course (0.04 Gal/SqYd) ⑤ x0.04*(1/9) Gal.	407 Tack Coat Int. Course (0.04 Gal/SqYd) ④ x0.04*(1/9) Gal.	408 Bituminous Prime Coat ⑤ x (1/9)*0.40 Gal.	448 Asph. Conc. Surface Course Type 1, T=1.50" ④ x(1.50/12)/27 * Cu.Yd.	448 Asph. Conc. Surface Course Type 1H, T=1.50" ④ x(1.50/12)/27 * Cu.Yd.	448 Asph. Conc. Intermediate Course Type 2, T=1.50" ④ x(1.50/12)/27 * Cu.Yd.	448 Asph. Conc. Intermediate Course Type 2, T=1.75" ④ x(1.75/12)/27 * Cu.Yd.	609 Lucas County Standard Curb, Type "A" (6") Lin.Ft.	609 ODOT Standard Curb And Gutter Type 2, (6") Lin.Ft.	609 ODOT Standard Curb Type 6, (6") Lin.Ft.
Central Avenue Intersection – East																								
10+21.82	10+97.40	Rt.&Lt.	Planimeter				5944.06	5944.06	6217.89	690.88	72.65	183.46	115.15		26.42	26.42	264.18	27.52	27.52	27.52	32.11		212.98	
10+97.40	11+44.88	Rt.&Lt.	47.48	48.00	48.00	50.50	2279.04	2279.04	2397.74	266.42	27.85		44.40		10.13	10.13	101.29	10.55		10.55		94.96		
Retail Drive No. 1 Intersection																								
11+44.88	13+70.41	Rt.&Lt.	Planimeter				16951.28	16951.28	18078.11	2008.68	207.18		334.78		75.34	75.34	753.39	78.48		78.48		901.46		
13+70.41	14+98.20	Rt.&Lt.	127.79	48.00	48.00	50.50	6133.92	6133.92	6453.40	717.04	74.97		119.51		27.26	27.26	272.62	28.40		28.40		255.58		
Retail Drive No. 2 Intersection																								
14+98.20	16+09.69	Rt.&Lt.	Planimeter				7382.23	7382.23	7763.99	862.67	90.23		143.78		32.81	32.81	328.10	34.18		34.18		381.76		
16+09.69	18+78.20	Rt.&Lt.	268.51	24.00	24.00	26.50	6444.24	6444.24	7115.52	790.61	79.56		131.77		28.64	28.64	286.41	29.83		29.83		537.02		
Retail Drive No. 3 Intersection																								
18+78.20	19+86.19	Rt.&Lt.	Planimeter				6900.00	6900.00	7075.00	786.11	85.18		131.02		30.67	30.67	306.67	31.94		31.94		187.75		
19+86.19	20+32.25	Rt.&Lt.	46.06	24.00	25.00	26.00	1105.44	1151.50	1197.56	133.06	14.22		22.18	1.75	5.12	4.91	51.18	5.12		5.12				
Taper Section (Meet Existing Pavement)																								
20+32.25	20+67.25	Rt.&Lt.	Planimeter				726.52	734.30	757.64	84.18	8.97		14.03	1.30	3.26	3.23	32.64	3.36		3.36				
Central Ave. Deceleration Lane – East (Baseline Stationing)																								
12+34.87	13+57.77	Rt.	122.90	14.00	14.00	15.25	1720.60	1720.60	1874.23	208.25	21.03	53.10	34.71		7.65	7.65	76.47	7.97	7.97	7.97	9.29		122.96	
Taper Section (Meet Existing Pavement)																								
13+57.77	14.07.77	Rt.	50.00	11.00	11.00	12.25	550.00	550.00	612.50	68.06	6.72	16.98	11.34		2.44	2.44	24.44	2.55	2.55	2.55	2.97		50.30	
Central Avenue Intersection – West																								
01+30.65	02+50.34	Rt.	Planimeter				2020.10	2020.10	2683.54	298.17	24.69	62.35	49.78		8.98	8.98	89.78	9.35	9.35	9.35	10.91		153.94	131.88
Central Ave. Deceleration Lane – West (Baseline Stationing)																								
02+50.34	03+69.26	Rt.	118.92	14.00	14.00	15.25	1664.88	1664.88	1813.53	201.50	20.35	51.39	33.58		7.40	7.40	73.99	7.71	7.71	7.71	8.99		119.24	
Taper Section (Meet Existing Pavement)																								
03+69.26	04+18.72	Rt.	49.46	11.00	11.00	12.25	544.06	544.06	605.89	67.32	6.65	16.79	11.22		2.42	2.42	24.18	2.52	2.52	2.52	2.94		50.31	
Subtotals										7182.95	740.25	384.06	1197.25	3.05	268.54	268.30	2685.34	279.48	57.61	279.48	67.21	2358.52	709.73	131.88
TOTALS										7183	1124		1200		537		2685	279	58	279	67	2359	710	132

ITEM 870– COMMERCIAL FERTILIZER

(10145 SY) x (9 SF/SY) x (30 LBS/1000 SF) = 1.37 TONS
2000 LBS/TON

ITEM 870– WATER

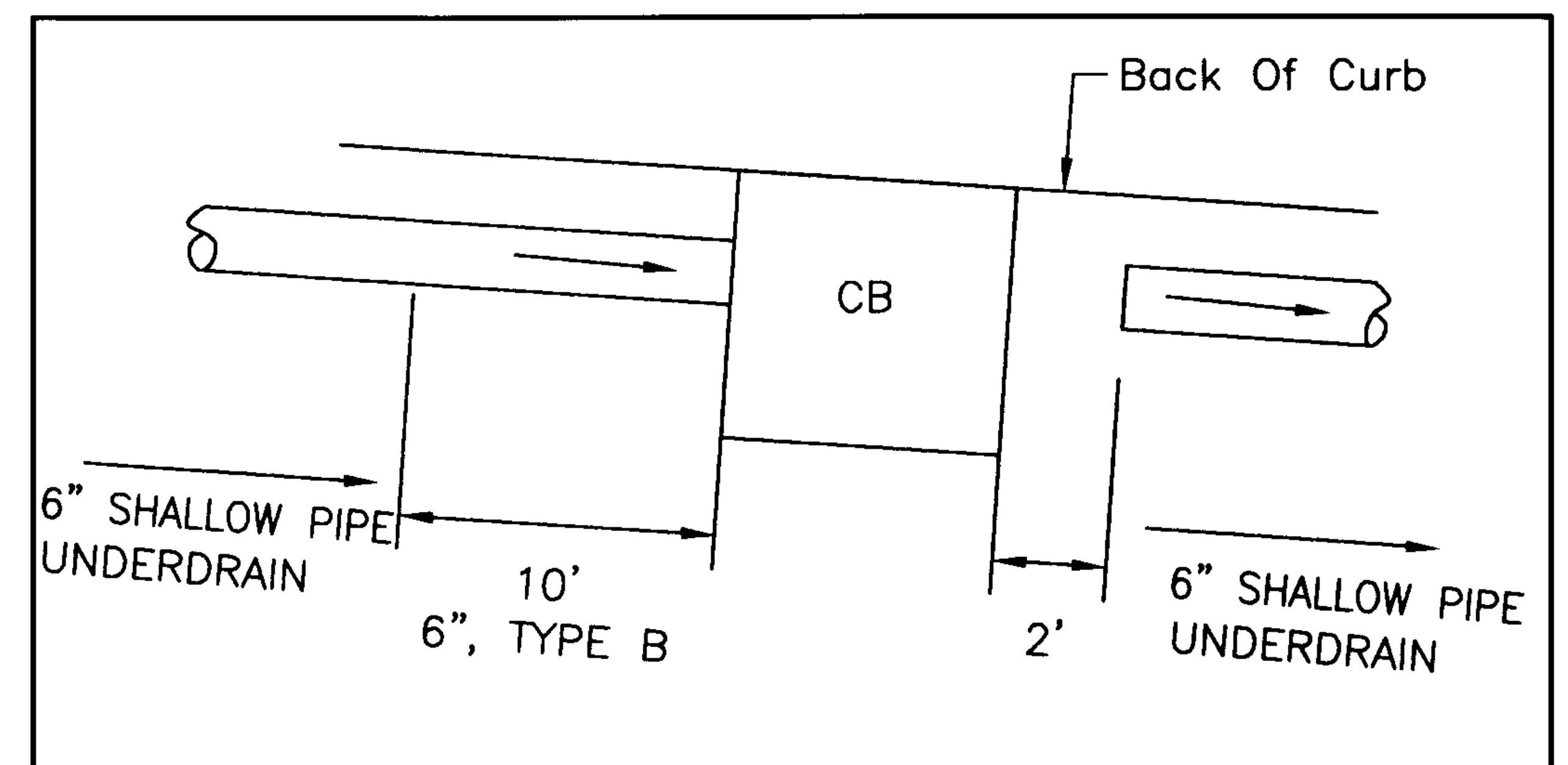
(10145 SY) x (9 SF/SY) x (300 GALS/1000 SF) = 27.39 M GAL
1000 GAL/M GAL
USE 28 M GAL

ITEM 651– TOPSOIL STOCKPILED

(6 IN) x (1 YD) x (10145 SY) = 1691 CY
36 IN

ITEM 652– PLACING STOCKPILED TOPSOIL

(6 IN) x (1 YD) x (10145 SY) = 1691 CY
36 IN



UNDERDRAIN DETAIL

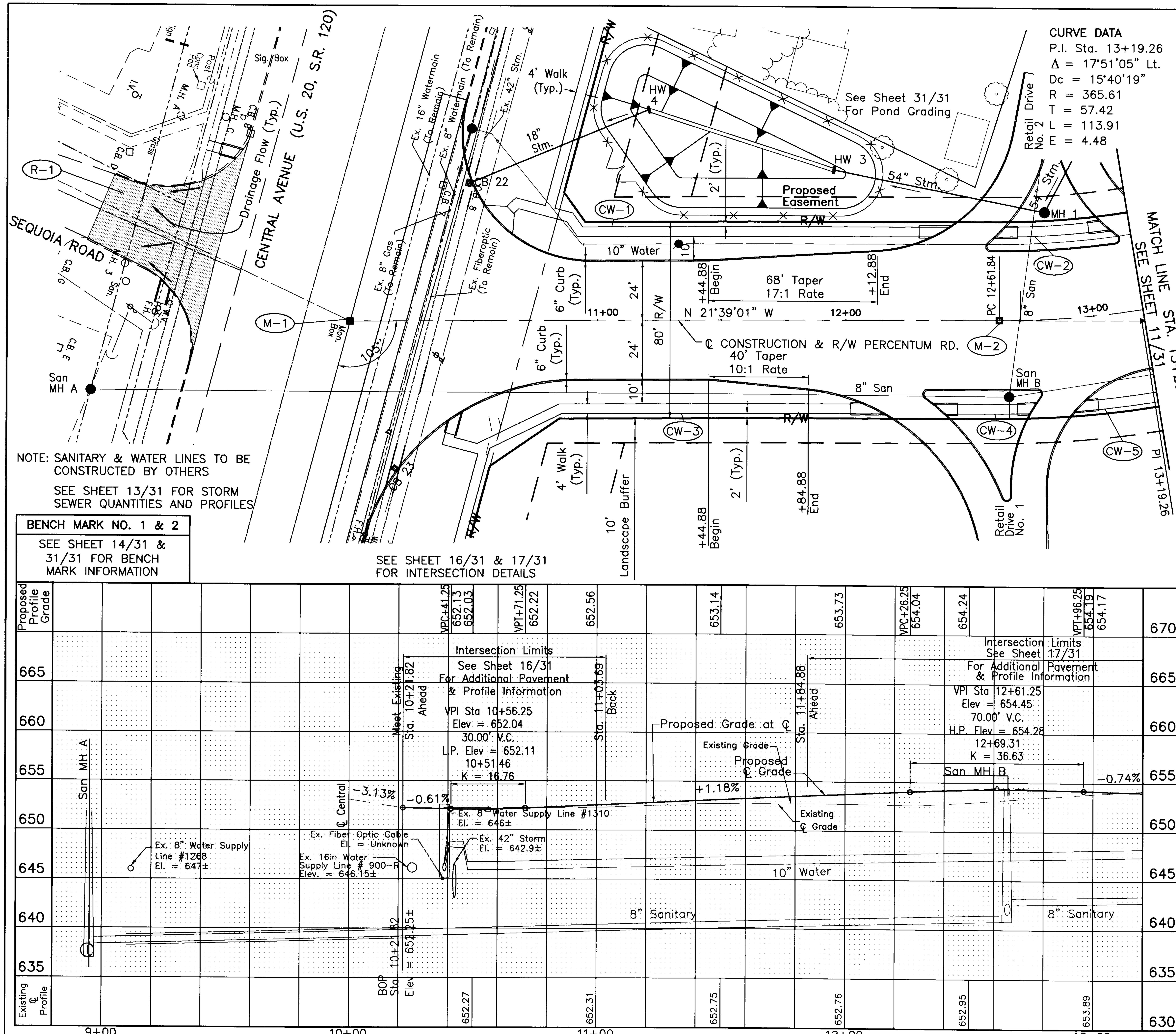
CALCULATED JWS
CHECKED JLW

GENERL SUBSUMMARY & CALCULATIONS

LUC-PERCENTUM ROAD

9 / 31

B157A1D
FILE 774



Resurfacing Area

At Sequoia Rd., Mill To A Minimum Depth Of 1.5", Item 202 – Wearing Course Removed And Resurface Using Item 448 – 1.5" (Minimum Thickness) Asphalt Concrete Surface Course, Type 1, PG 64-22, As Per Plan (Quantities Found On This Sheet). Actual Resurfacing Thickness Will Vary In Order For The Positive Drainage Pattern As Shown On The Plans To Be Maintained In The Resurfacing Area. Resurfacing Shall Match Existing Pavement At Sequoia Rd. And Central Ave.

HORIZONTAL SCALE IN FEET: 0' 20' 40'

CALCULATED MDV
CHECKED JLW

ESTIMATED QUANTITIES

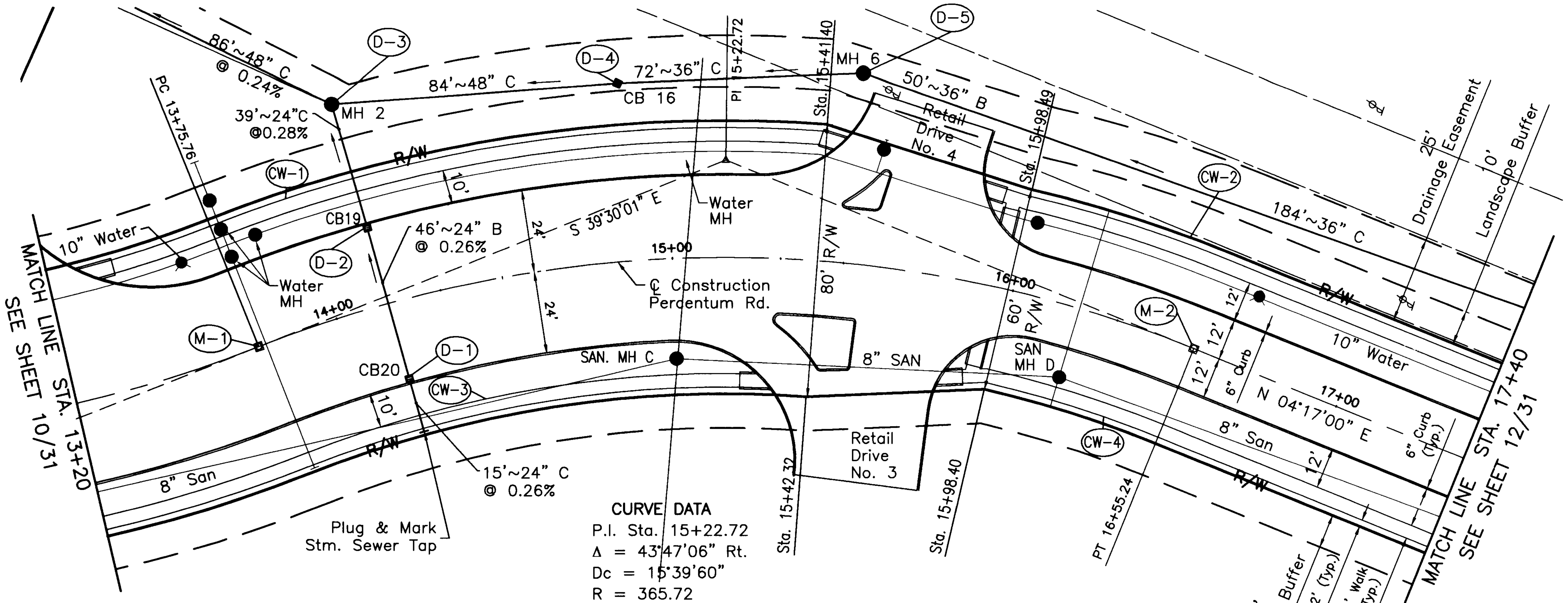
Ref. No.	Station From	Station To Or At	Side	202 Wearing Course Removed (Sq.Yd.)	448 1.5" Asph. Conc. Surf. Crse. Type 1, PG 64-22, As Per Plan (Cu. Yd.)	604 Monument Assembly (Each)	608 4" Concrete Sidewalk (Sq.Ft.)	608 Curb Ramp (Each)
CW-1	10+88	12+44	Lt.				594	1
CW-2	12+59	13+11	Lt.				114	2
CW-3	10+59	12+17	Rt.				581	1
CW-4	12+34	12+76	Rt.				97	2
CW-5	12+89	13+20	Rt.				96	1
M-1		10+00	℄			1		
M-2		12+62	℄			1		
R-1	Sequoia Road			230	10			
Totals To General Summary				230	10	2	1482	7

PLAN AND PROFILE PERCENTUM ROAD
STA. 10+00 TO STA. 13+20

LUC - PERCENTUM ROAD

10 / 31

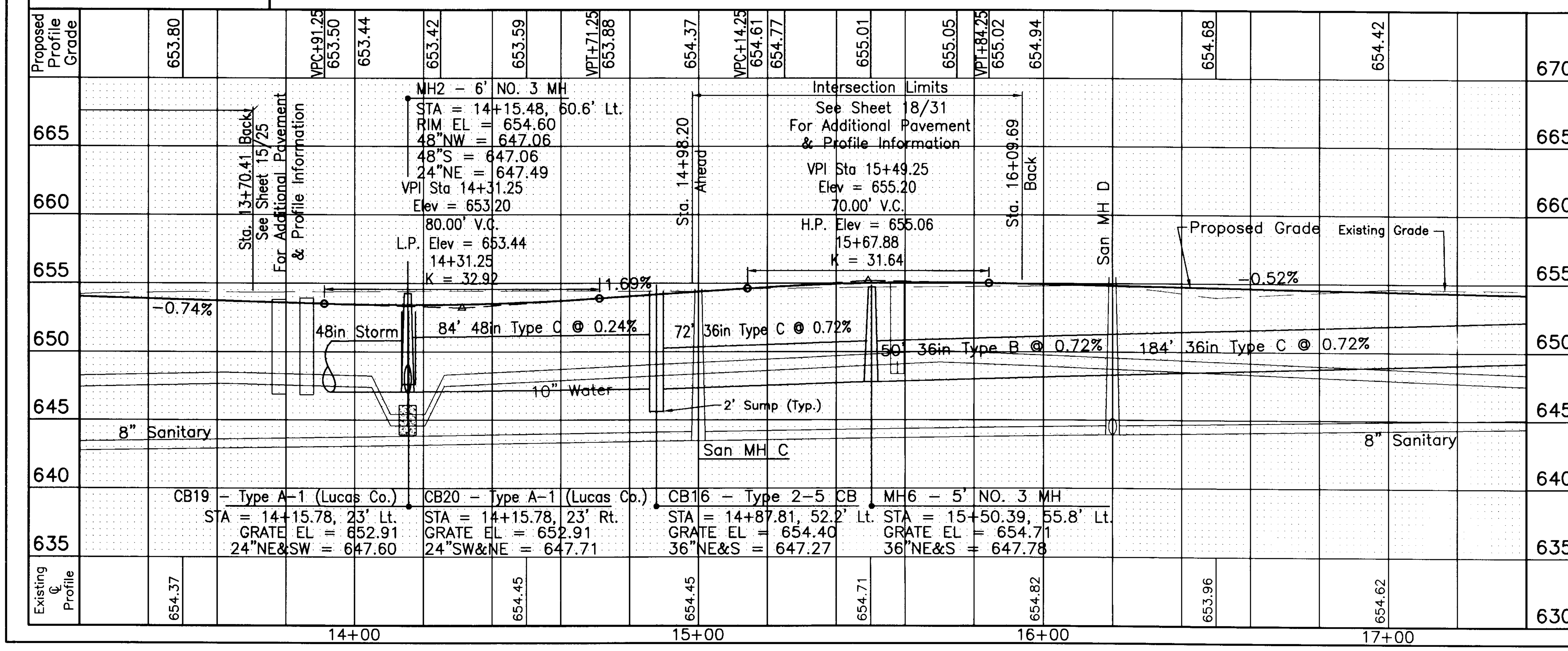
B157A1D
FILE 774



NOTE: SANITARY & WATER LINES TO BE CONSTRUCTED BY OTHERS
SEE SHEET 18/31 FOR INTERSECTION DETAILS

CURVE DATA
P.I. Sta. 15+22.72
Δ = 43°47'06" Rt.
Dc = 15°39'60"
R = 365.72
T = 146.96
L = 279.48
E = 28.42

BENCH MARK NO. 1 & 2
SEE SHEET 14/31 & 31/31 FOR BENCH MARK INFORMATION



ESTIMATED QUANTITIES

Ref. No.	Station From	Station To Or At	Side	603 24" Conduit Type B, A.P.P. (Lin. Ft.)	603 24" Conduit Type C, A.P.P. (Lin. Ft.)	603 36" Conduit Type C, A.P.P. (Lin. Ft.)	603 36" Conduit Type B, A.P.P. (Lin. Ft.)	603 48" Conduit Type C, A.P.P. (Lin. Ft.)	604 Type A-1 (Lucas Co.) Catch Basin (Each)	604 Type 2-5 Catch Basin (Each)	604 5' No. 3 Manhole (Each)	604 6' No. 3 Manhole (Each)	604 Monument Assembly (Each)	608 4" Concrete Walk (Sq. Ft.)	608 Curb Ramp (Each)
CW-1	13+29	15+48	Lt.											849	2
CW-2	15+85	17+40	Lt.											616	2
CW-3	13+20	15+31	Rt.											766	1
CW-4	15+83	17+40	Rt.											584	2
M-1		13+75.76	℄										1		
M-2		16+73.67	℄										1		
D-1		14+15.78	Rt.	46	15				1						
D-2		14+15.78	Lt.		39				1						
D-3		14+15.48	Lt.					86				1			
D-4		14+87.81	Lt.					84		1					
D-5		15+50.39	Lt.			256	50				1				
Totals To General Summary				46	54	256	50	170	2	1	1	1	2	2815	7

N

0' 20' 40'
HORIZONTAL SCALE IN FEET

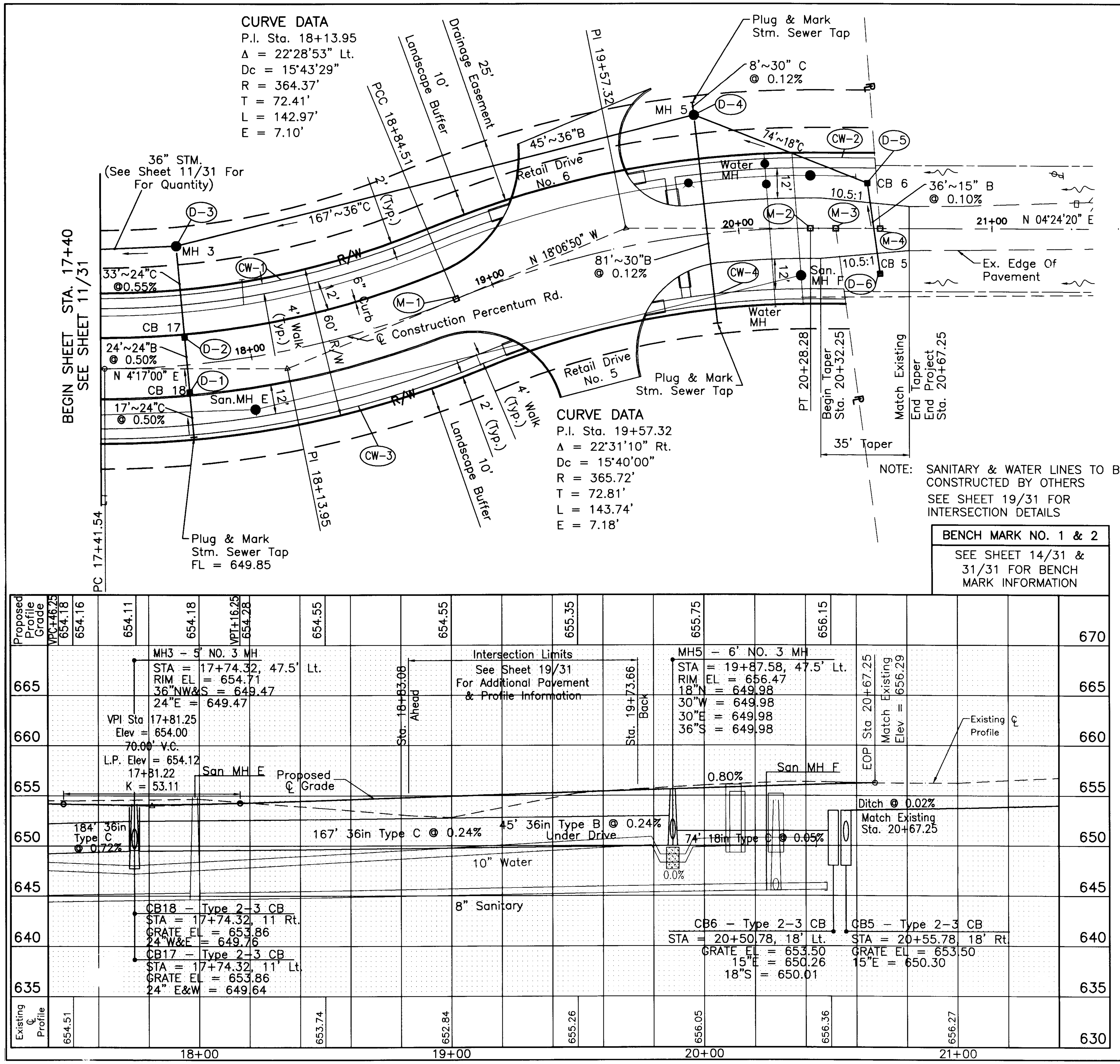
CALCULATED MDV
CHECKED JLW

PLAN AND PROFILE PERCENTUM ROAD STA. 13+20 TO STA. 17+40

LUC - PERCENTUM ROAD

11/31

B157A1D
FILE 774



ESTIMATED QUANTITIES

Ref. No.	Station From	Station To Or At	Side	603 15" Conduit Type B, A.P.P.	603 18" Conduit Type C, A.P.P. (Lin.Ft.)	603 24" Conduit Type B, A.P.P. (Lin.Ft.)	603 24" Conduit Type C, A.P.P. (Lin.Ft.)	603 30" Conduit Type C, A.P.P. (Lin.Ft.)	603 30" Conduit Type B, A.P.P. (Lin.Ft.)	603 36" Conduit Type B, A.P.P. (Lin.Ft.)	603 36" Conduit Type C, A.P.P. (Lin.Ft.)	604 Type 2-3 Catch Basin (Each)	604 5' No. 3 Manhole (Each)	604 6' No. 3 Manhole (Each)	604 Monument Assembly (Each)		608 4" Concrete Sidewalk (Sq. Ft.)	608 Curb Ramp (Each)
CW-1	17+40	19+17	Lt.														638	1
CW-2	19+52	20+54	Lt.														384	2
CW-3	17+40	19+14	Rt.														658	1
CW-4	19+47	20+42	Rt.														299	2
M-1		18+84.52	℄												1			
M-2		20+28.28	℄												1			
M-3		20+38.25	℄												1			
M-4		20+55.78	℄												1			
D-1		17+74.32	Rt.			24	17					1						
D-2		17+74.32	Lt.				33					1						
D-3		17+74.32	Lt.								167		1					
D-4		19+87.58	Lt.					81	8	45				1				
D-5		20+50.78	Lt.		74							1						
D-6		20+55.78	Rt.	36								1						
Totals To General Summary				36	74	24	50	81	8	45	167	4	1	1	4		1979	6

0 20' 40'
HORIZONTAL SCALE IN FEET

CALCULATED MDV
CHECKED JLW

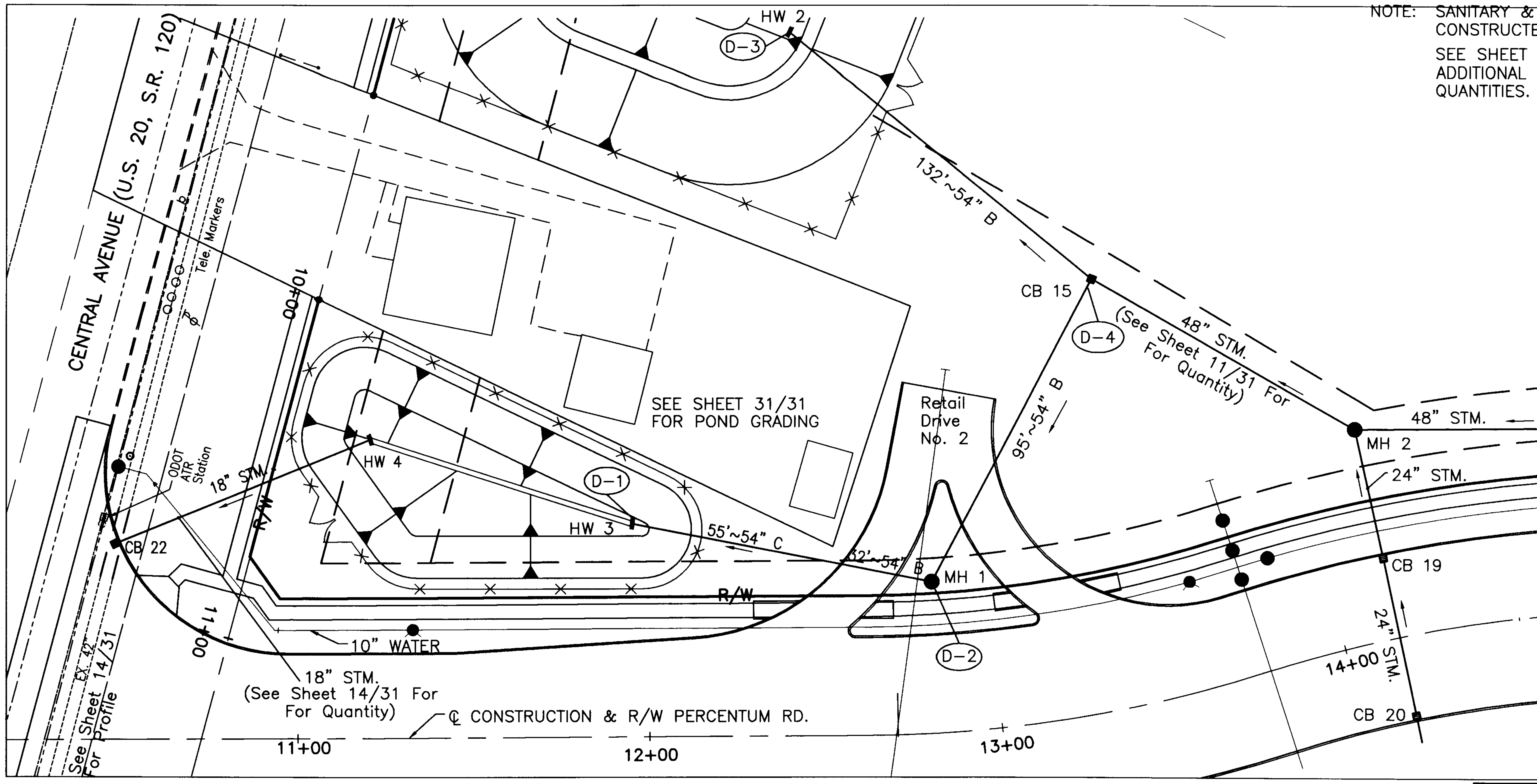
PLAN AND PROFILE PERCENTUM ROAD
STA. 17+40 TO STA. 20+67.25

LUC - PERCENTUM ROAD

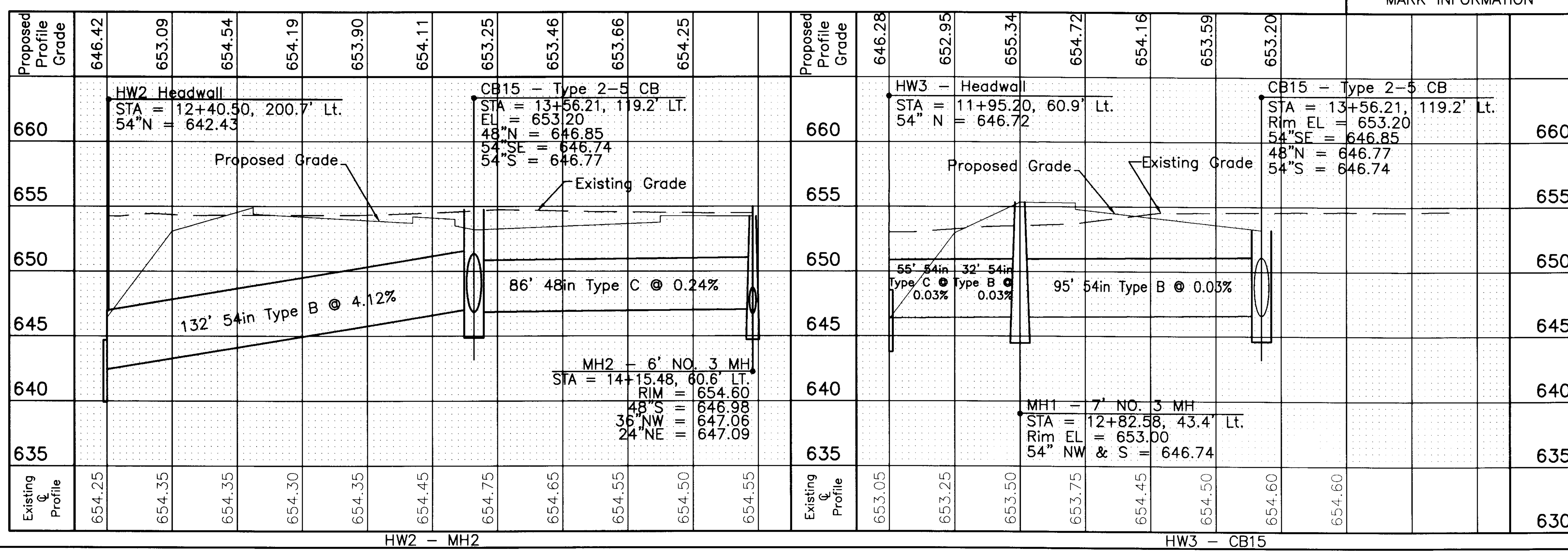
12/31

B157A1D
FILE 774

NOTE: SANITARY & WATER LINES TO BE CONSTRUCTED BY OTHERS.
SEE SHEET 11/31 & 14/31 FOR ADDITIONAL STORM SEWER QUANTITIES.



BENCH MARK NO. 1 & 2
SEE SHEET 14/31 & 31/31 FOR BENCH MARK INFORMATION



ESTIMATED QUANTITIES

Ref. No.	Station From	Station To Or At	Side	601 Paved Gutter (Lin Ft)	602 Concrete Masonry (Cy.Yd.)	603 54" Conduit Type B, A.P.P. (Lin Ft)	603 54" Conduit Type C, A.P.P. (Lin Ft)	604 Type 2-5 Catch Basin (Each)	604 7' No. 3 Manhole (Each)
D-1		11+95.20	Lt.	78	1.32				
D-2		12+82.58	Lt.			32	55		1
D-3		12+40.50	Lt.		1.32				
D-4		13+56.21	Lt.			227		1	
Totals To General Summary				78	2.64	259	57	1	1

0' 20' 40'
HORIZONTAL SCALE IN FEET

CALCULATED MDV
CHECKED JLW

PLAN AND PROFILE STORM SEWER

LUC - PERCENTUM ROAD

B157A1D
FILE 774

BENCH MARK NO. 2

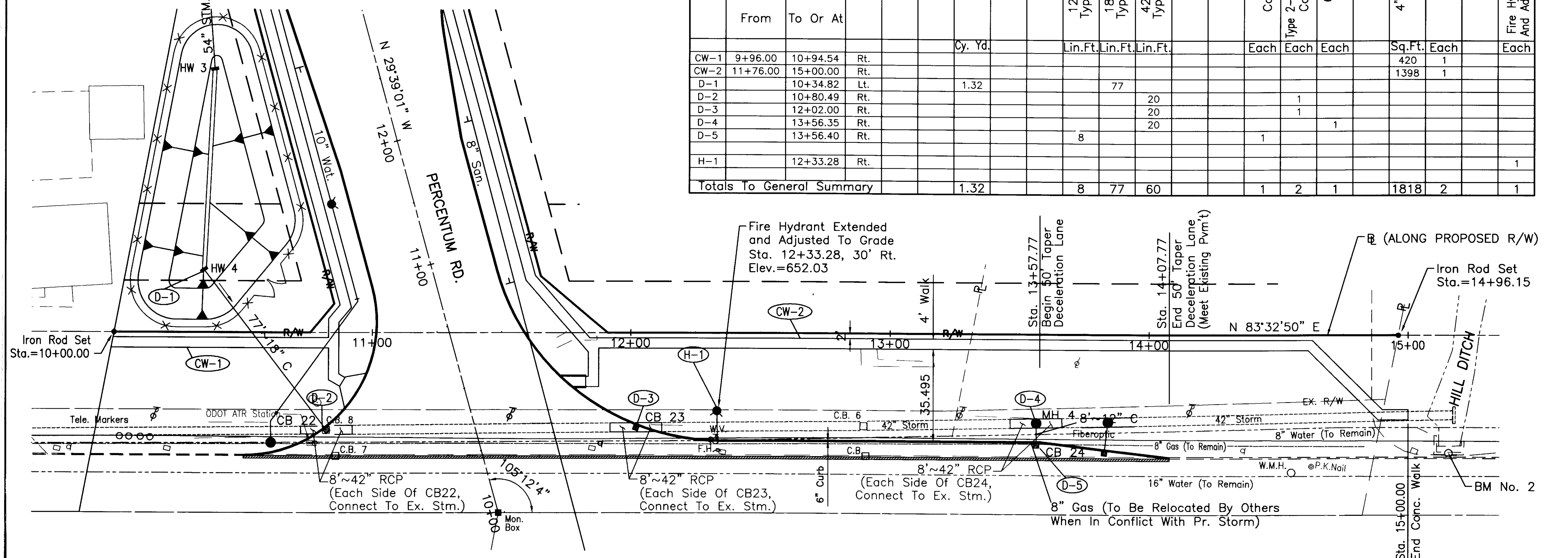
B.M. #2 (This Sheet)
BOX CUT IN HEADWALL
Sta. 15+15.54, 45.85' Rt.
El. = 651.27

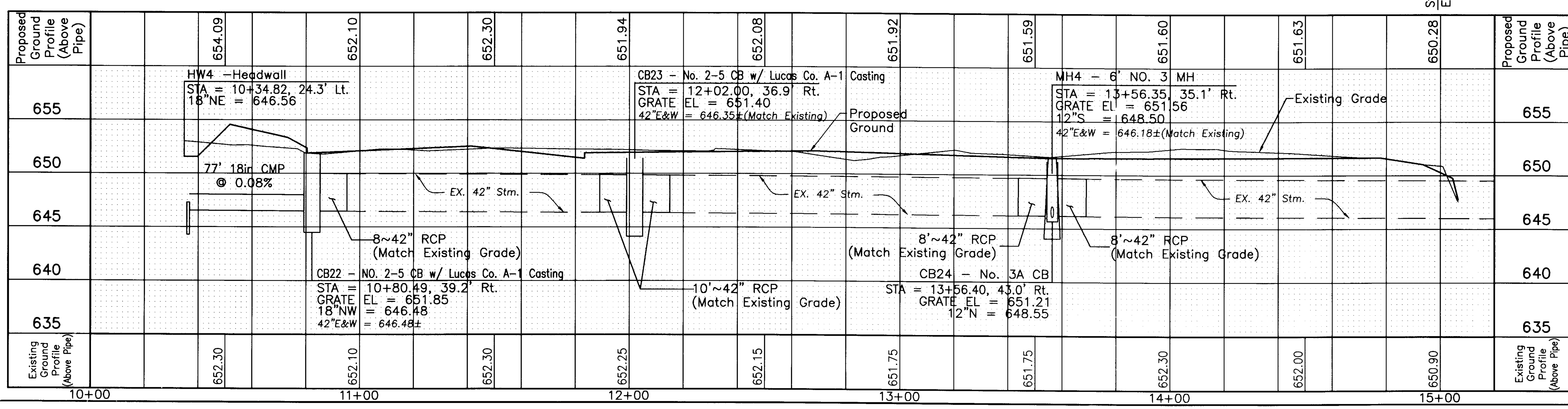
NOTE: SANITARY & WATER LINES TO BE CONSTRUCTED BY OTHERS

SEE SHEET 16/31 FOR INTERSECTION DETAILS

ESTIMATED QUANTITIES

Ref. No.	Station From	Station To Or At	Side	602 Concrete Masonry	603 12" Conduit, Type C, A.P.P.	603 18" Conduit, Type C, A.P.P.	603 42" Conduit, Type C, A.P.P.	604 Type 3A Catch Basin	604 Type 2-5 w/ A-1 Casting Catch Basin	604 6' No. 3 Manhole	608 4" Concrete Sidewalk	608 Curb Ramp	638 Fire Hydrant Extended And Adjusted To Grade
				Cy. Yd.	Lin.Ft.	Lin.Ft.	Lin.Ft.	Each	Each	Each	Sq.Ft.	Each	Each
CW-1	9+96.00	10+94.54	Rt.								420	1	
CW-2	11+76.00	15+00.00	Rt.								1398	1	
D-1		10+34.82	Lt.	1.32		77							
D-2		10+80.49	Rt.				20		1				
D-3		12+02.00	Rt.				20		1				
D-4		13+56.35	Rt.				20			1			
D-5		13+56.40	Rt.		8			1					
H-1		12+33.28	Rt.										1
Totals To General Summary				1.32	8	77	60	1	2	1	1818	2	1





0' 20' 40'
HORIZONTAL SCALE IN FEET

CALCULATED MDV
CHECKED JLW

PLAN AND PROFILE
EAST DECELERATION LANE & STORM SEWER

LUC - PERCENTUM ROAD

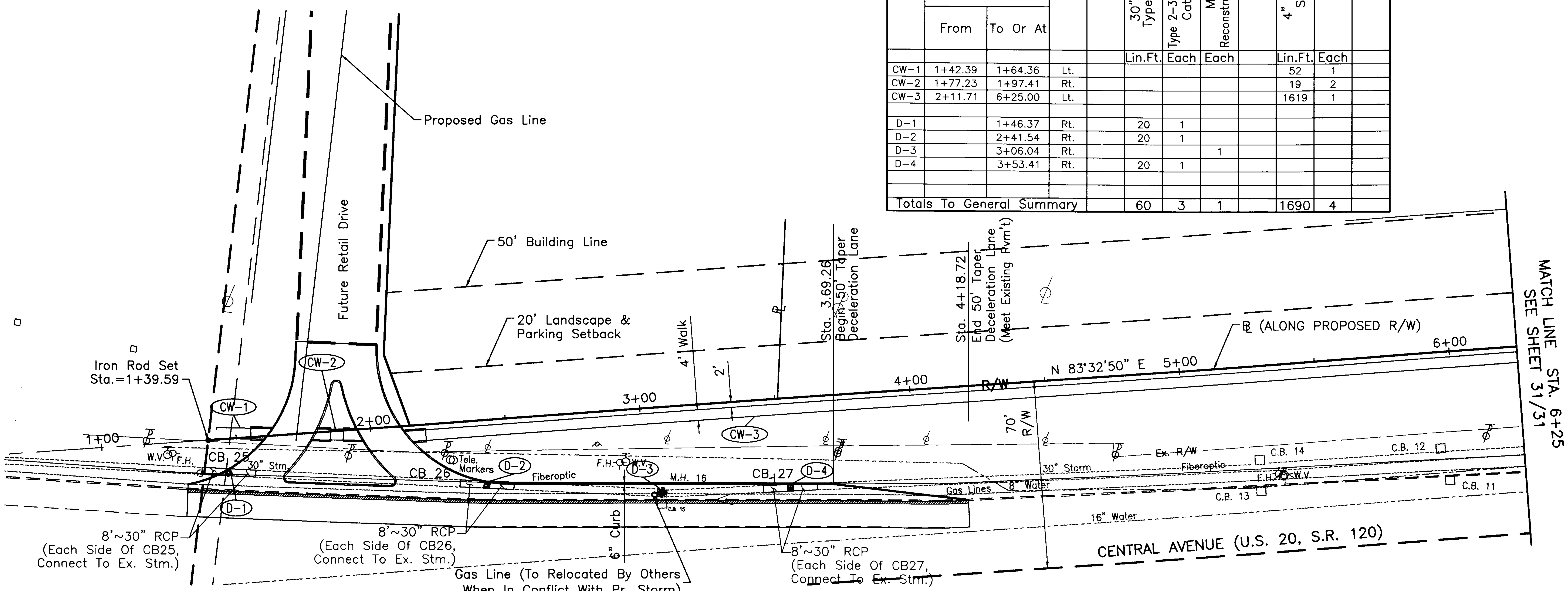
B157A1D
FILE 774

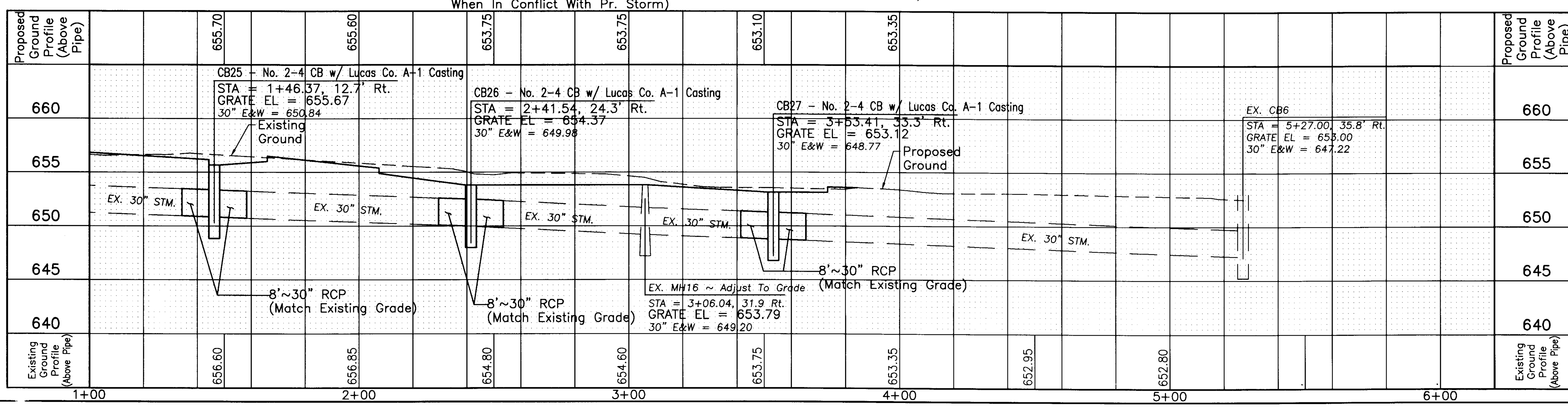
S:\PROJECTS\OA\B157A1D\ROADWAY\B157A1DA\B157A1DAxPP02
CAD Dwg. Scale: (Eng.) 1"=
Last CAD Revision: 7/19/01
Last Revision By: jwe
Description: FINAL

BENCH MARK NO. 1 & 2
N. B BOLT OF HYDRANT Sta. 461+56.1, 30' Lt. El. = 656.18
BOX CUT IN HEADWALL Sta. 15+15.54, 45.85' Rt. El. = 651.27

NOTE: SANITARY & WATER LINES TO BE CONSTRUCTED BY OTHERS

ESTIMATED QUANTITIES											
					603	604	604	·	608	608	
Ref. No.	Station From	Station To Or At	Side		30" Conduit, Type B, A.P.P.	Type 2-3 w/ A-1 Casting Catch Basin	Manhole, Reconstructed To Grade		4" Concrete Sidewalk	Curb Ramp	
					Lin.Ft.	Each	Each		Lin.Ft.	Each	
CW-1	1+42.39	1+64.36	Lt.						52	1	
CW-2	1+77.23	1+97.41	Rt.						19	2	
CW-3	2+11.71	6+25.00	Lt.						1619	1	
D-1		1+46.37	Rt.		20	1					
D-2		2+41.54	Rt.		20	1					
D-3		3+06.04	Rt.				1				
D-4		3+53.41	Rt.		20	1					
Totals To General Summary					60	3	1		1690	4	





N

0' 20' 40'
HORIZONTAL SCALE IN FEET

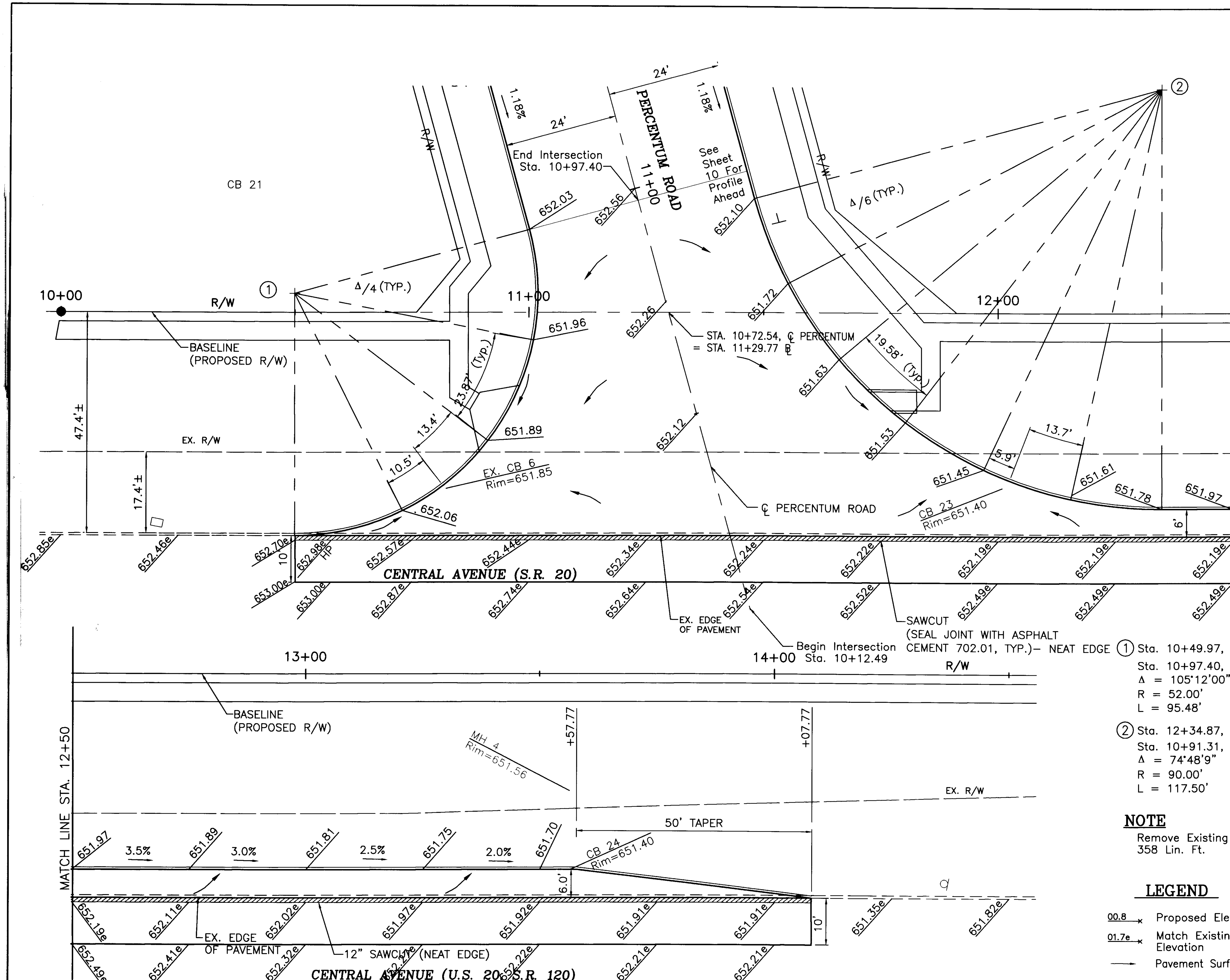
CALCULATED MDV
CHECKED JLW

PLAN AND PROFILE
WEST DECELERATION LANE & STORM SEWER

LUC - PERCENTUM ROAD

15/31

B157A1D
FILE 774



① Sta. 10+49.97, 4.07' LT. (℔)
Sta. 10+97.40, 76.00' LT. (℄ PERCENTUM)
Δ = 105°12'00"
R = 52.00'
L = 95.48'

② Sta. 12+34.87, 48.00' LT. (℔)
Sta. 10+91.31, 114.00' RT. (℄ PERCENTUM)
Δ = 74°48'9"
R = 90.00'
L = 117.50'

NOTE

Remove Existing Curb Along Saw Cut
358 Lin. Ft.

LEGEND

- 00.8 × Proposed Elevation (Pavement Surface)
- 01.7e × Match Existing Elevation
- —→ Pavement Surface Flow

SEE SHEET 9 FOR QUANTITIES

N
0' 10' 20'
HORIZONTAL SCALE IN FEET

CALCULATED MDV
CHECKED JLW

PAVEMENT DETAILS
CENTRAL AVENUE DECELERATION LANE - EAST

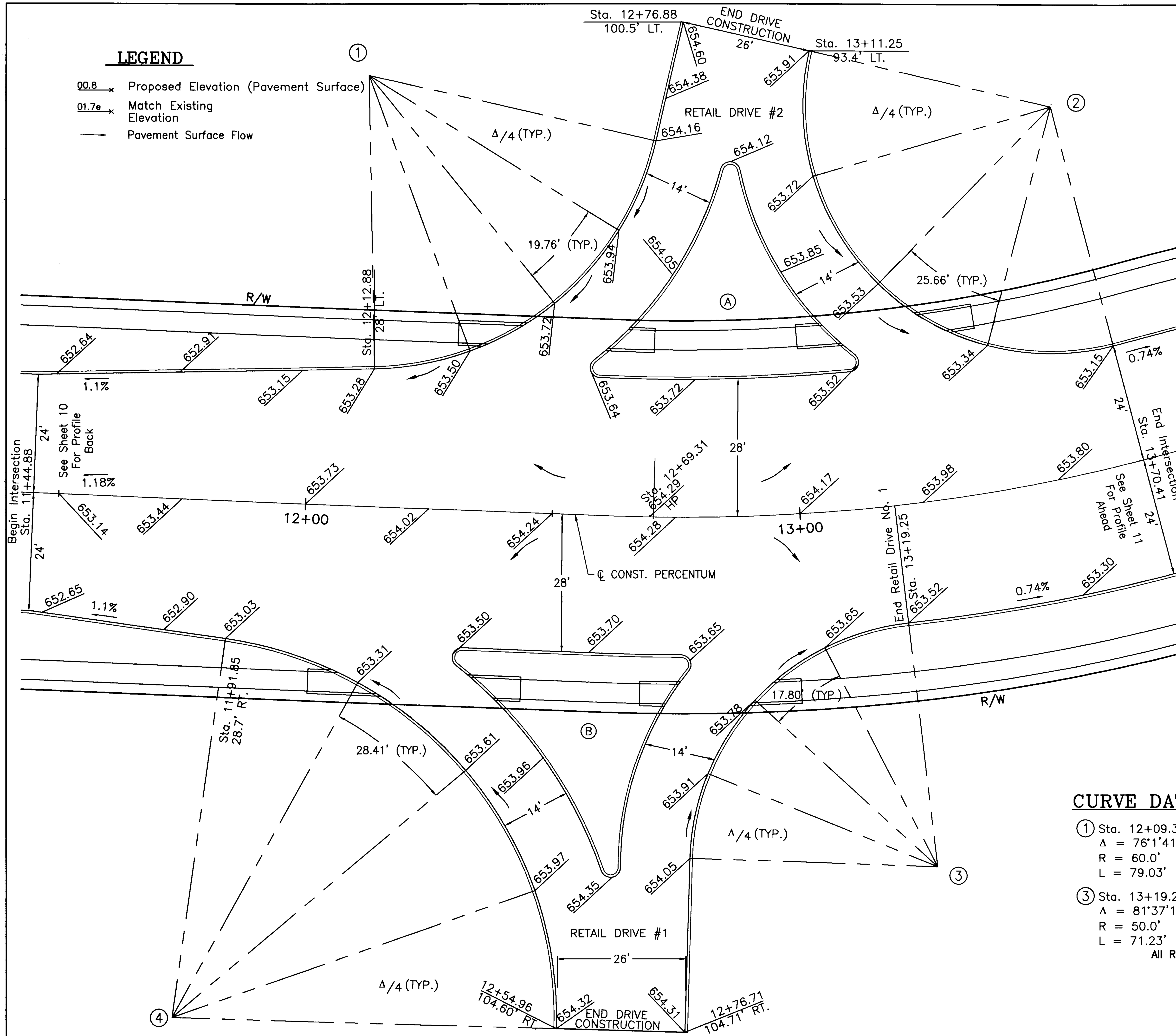
LUC - PERCENTUM ROAD

16
31

B157A1D
FILE 774

LEGEND

- 00.8 — Proposed Elevation (Pavement Surface)
- 01.7e — Match Existing Elevation
- → Pavement Surface Flow



Sta. 12+76.88
100.5' LT.
END DRIVE CONSTRUCTION
26'
Sta. 13+11.25
93.4' LT.
RETAIL DRIVE #2
Δ/4 (TYP.)
19.76' (TYP.)
25.66' (TYP.)
14'
R/W
Sta. 12+12.88
28' LT.
A
0.74%
1.1%
1.18%
Begin Intersection
Sta. 11+44.88
See Sheet 10
For Profile
Back
24'
28'
12+00
13+00
Sta. 12+69.31
654.29
HP
℄ CONST. PERCENTUM
End Intersection
Sta. 13+70.41
See Sheet 11
For Profile
Ahead
End Retail Drive No. 1
Sta. 13+19.25
Sta. 11+91.85
28.7' RT.
28.41' (TYP.)
17.80' (TYP.)
B
RETAIL DRIVE #1
12+54.96
104.60' RT.
12+76.71
104.71' RT.
654.60
654.38
654.16
653.91
654.12
653.72
654.05
653.94
653.85
653.53
653.72
653.34
653.15
652.64
652.91
653.15
653.28
653.50
653.64
653.72
653.52
653.80
653.98
654.17
653.73
653.44
653.14
654.02
654.24
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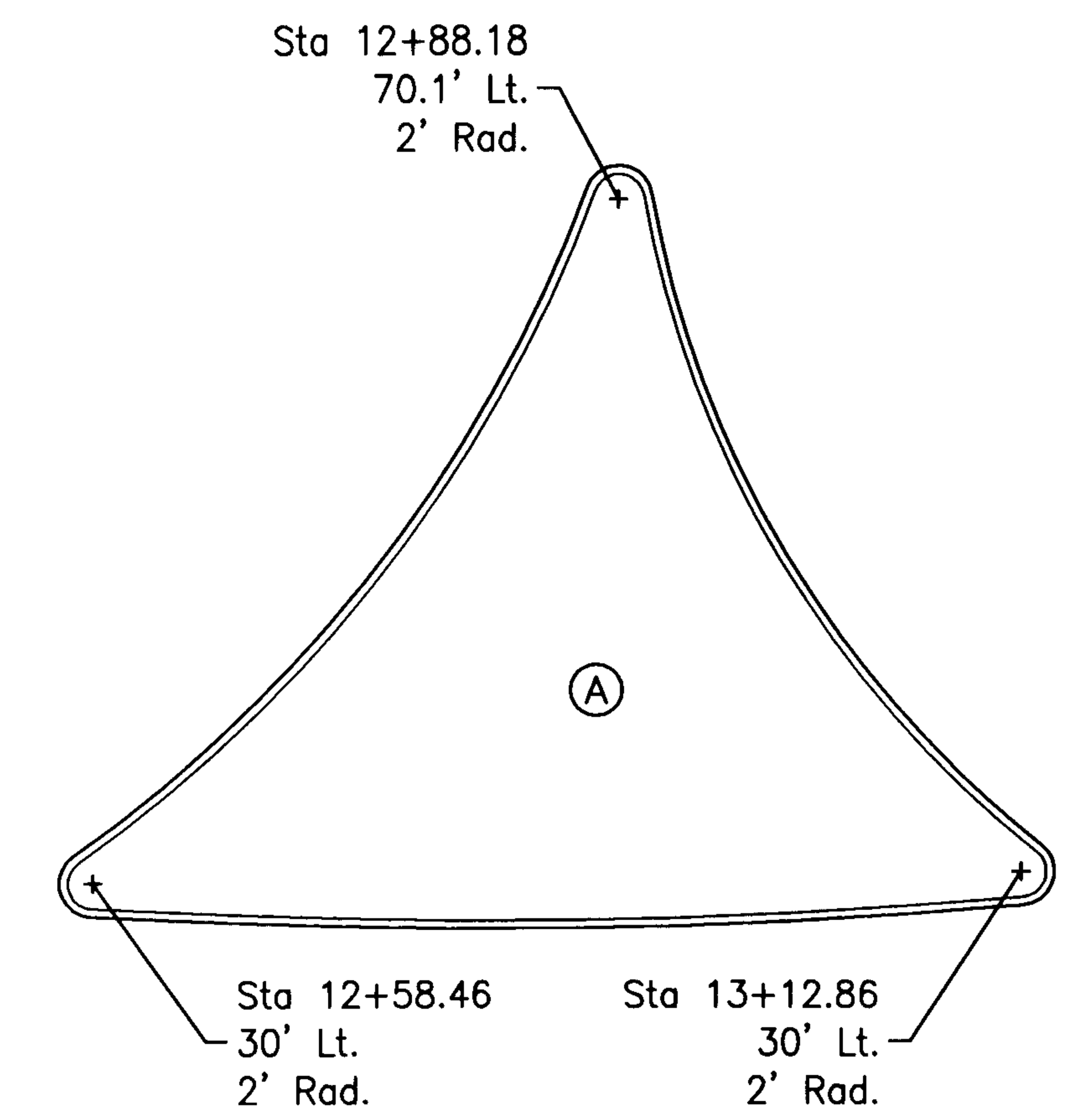
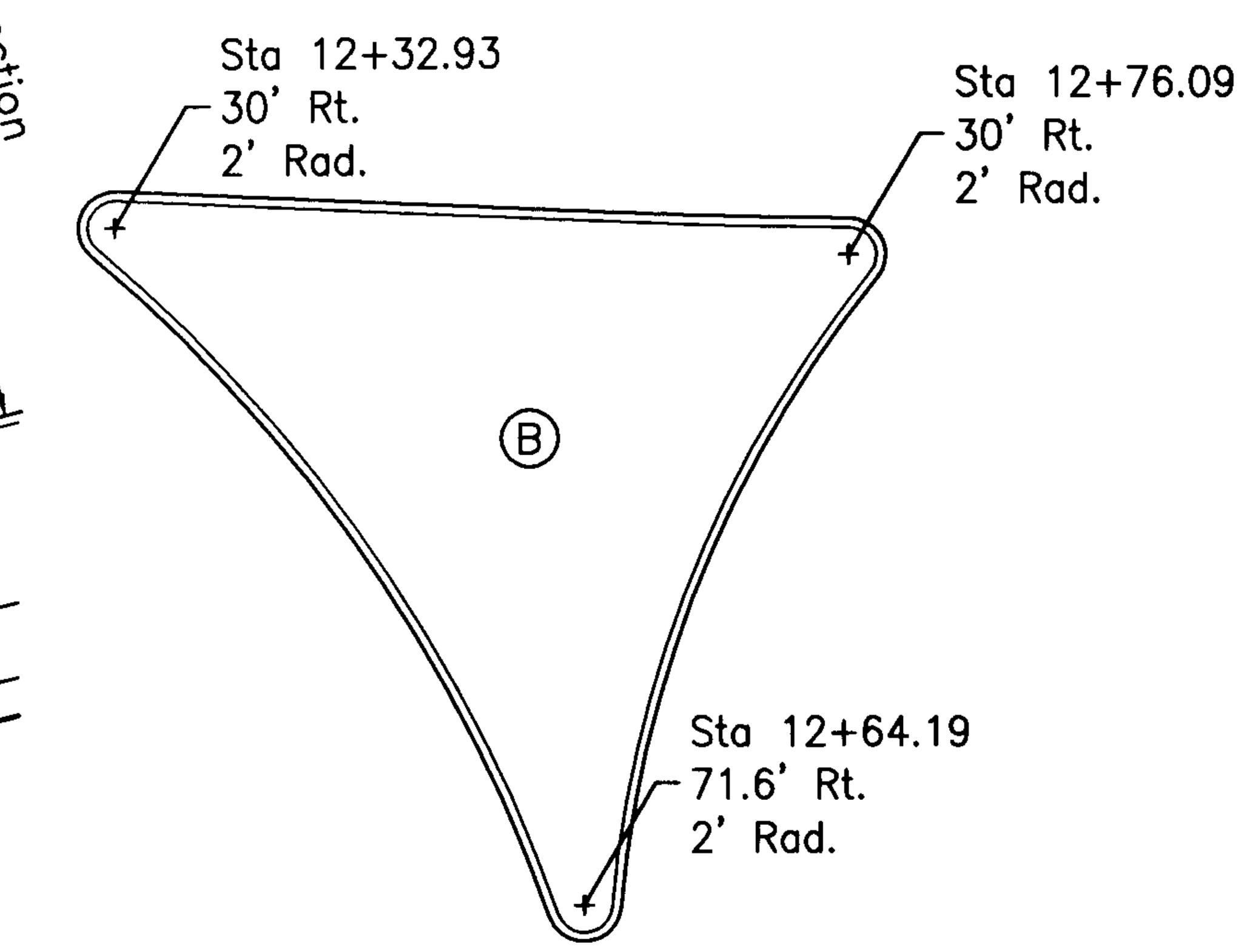
654.31



RETAIL DRIVE NO. 2

ISLAND DETAIL

All Radii Are Measured From F.O.C



RETAIL DRIVE NO. 1

ISLAND DETAIL

All Radii Are Measured From F.O.C

CURVE DATA

(1) Sta. 12+09.39, 87.45' LT.
Δ = 76°1'41"
R = 60.0'
L = 79.03'

(2) Sta. 13+70.41, 74.00' LT.
Δ = 242°22'58"
R = 50.0'
L = 102.64'

(3) Sta. 13+19.25, 74.00' RT.
Δ = 81°37'15"
R = 50.0'
L = 71.23'

(4) Sta. 11+77.14, 105.44' RT.
Δ = 83°40'26"
R = 78.0'
L = 113.65'

All Radii Are Measured From F.O.C

SEE SHEET 9 FOR QUANTITIES

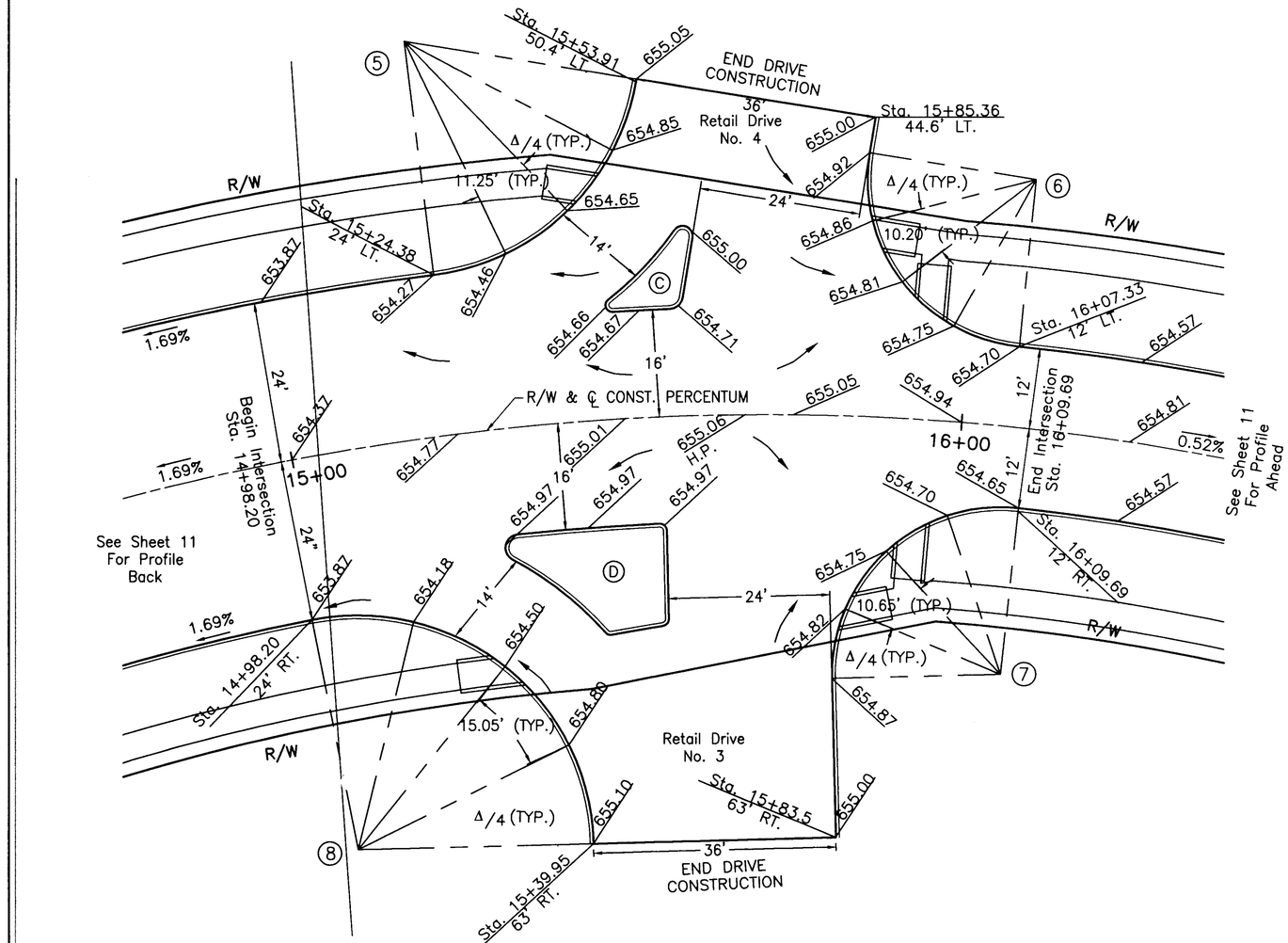
0 10' 20'
HORIZONTAL SCALE IN FEET

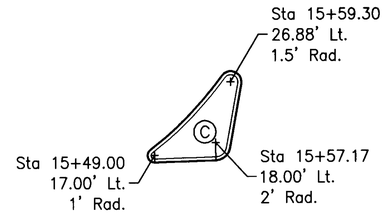
CALCULATED MDV
CHECKED JLW

PAVEMENT DETAILS
RETAIL DRIVE NO. 1 AND NO. 2 INTERSECTIONS

LUC - PERCENTUM ROAD

B157A1D
FILE 774





RETAIL DRIVE NO. 4

ISLAND DETAIL

All Curb Radii Measured From F.O.C.

RETAIL DRIVE NO. 3

ISLAND DETAIL

All Curb Radii Measured From F.O.C.

CURVE DATA

⑤ Sta. 15+24.38, 59.00' LT.
Δ = 73°32'00"
R = 35.00'
L = 44.92'

⑥ Sta. 16+07.33, 37.00' LT.
Δ = 93°28'06"
R = 25.00'
L = 40.78'

⑦ Sta. 16+09.69, 37.00' RT.
Δ = 97°30'59"
R = 25.00'
L = 42.55'

⑧ Sta. 14+98.20, 59.00' RT.
Δ = 99°57'00"
R = 35.00'
L = 61.06'

All Curb Radii Measured From F.O.C.

LEGEND

00.8 → Proposed Elevation (Pavement Surface)

01.7e → Match Existing Elevation

⟶ Pavement Surface Flow

SEE SHEET 9 FOR QUANTITIES

HORIZONTAL SCALE IN FEET
0 10' 20'

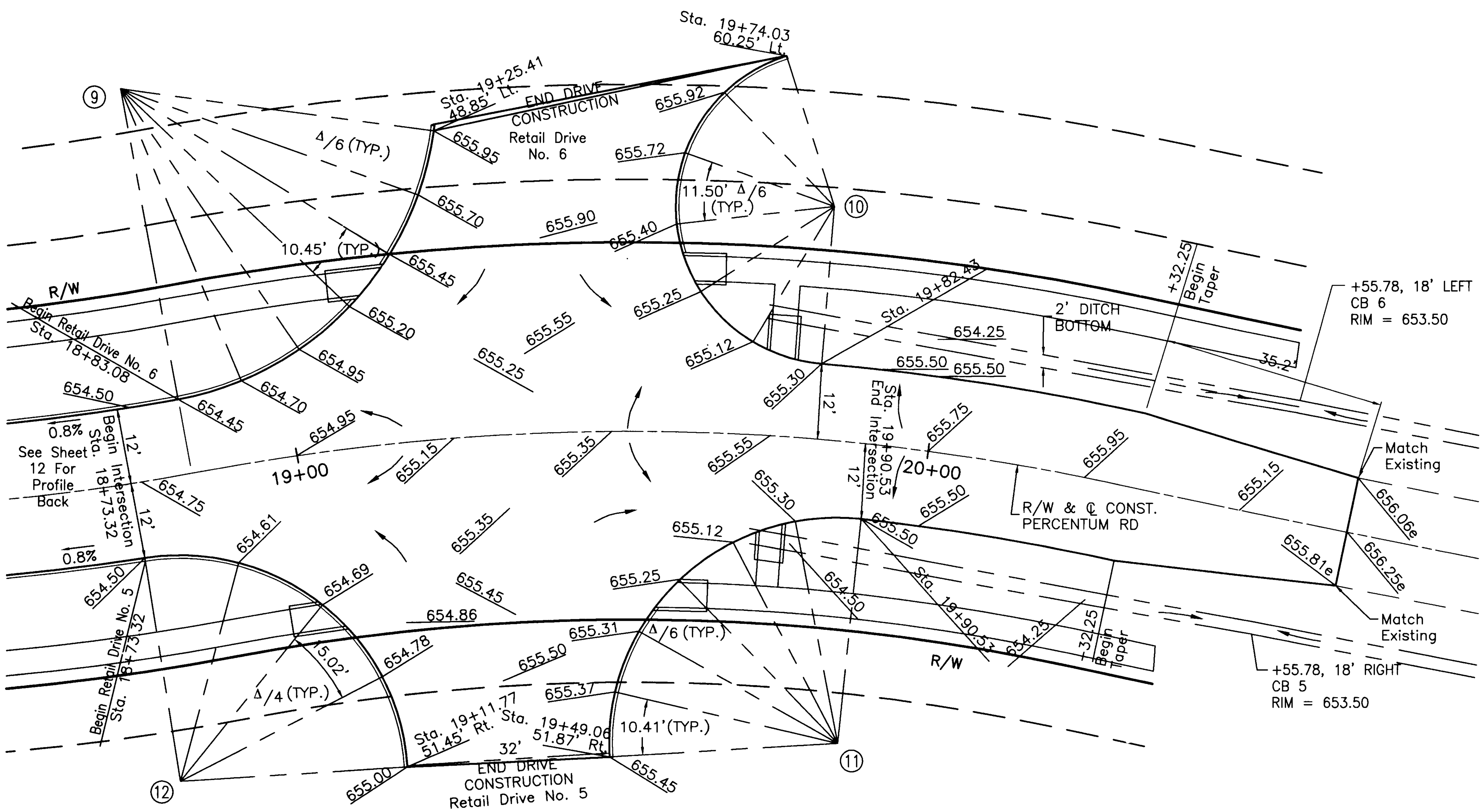
CALCULATED MDV
CHECKED JLW

PAVEMENT DETAILS
RETAIL DRIVE NO. 3 AND NO. 4 INTERSECTIONS

LUC - PERCENTUM ROAD

B157A1D
FILE 774

S:\PROJECTS\CIV\B157A1D\ROADWAY\B157A1DA\B157A1DAG.PGD3
CAD Dwg. Scale: (Eng.) 1"=1'
Last Revision Date: 1/19/01
Last Revision By: MB
Description: FINAL



CURVE DATA

(9) Sta. 18+83.08, 62.00' LT.
Δ = 71°52'00"
R = 50.00'
L = 62.71'

(10) Sta. 19+73.66, 37.00' LT.
Δ = 157°50'00"
R = 25.00'
L = 68.87'

(11) Sta. 19+790.53, 37.00' RT.
Δ = 99°25'00"
R = 36.00'
L = 62.46'

(12) Sta. 18+73.32, 37.00' RT.
Δ = 95°25'00"
R = 36.00'
L = 60.00'

All Curb Radii Measured From F.O.C.

LEGEND

00.8 — Proposed Elevation (Pavement Surface)

01.7e — Match Existing Elevation

——— Pavement Surface Flow

SEE SHEET 9 FOR QUANTITIES

0' 10' 20'
HORIZONTAL SCALE IN FEET

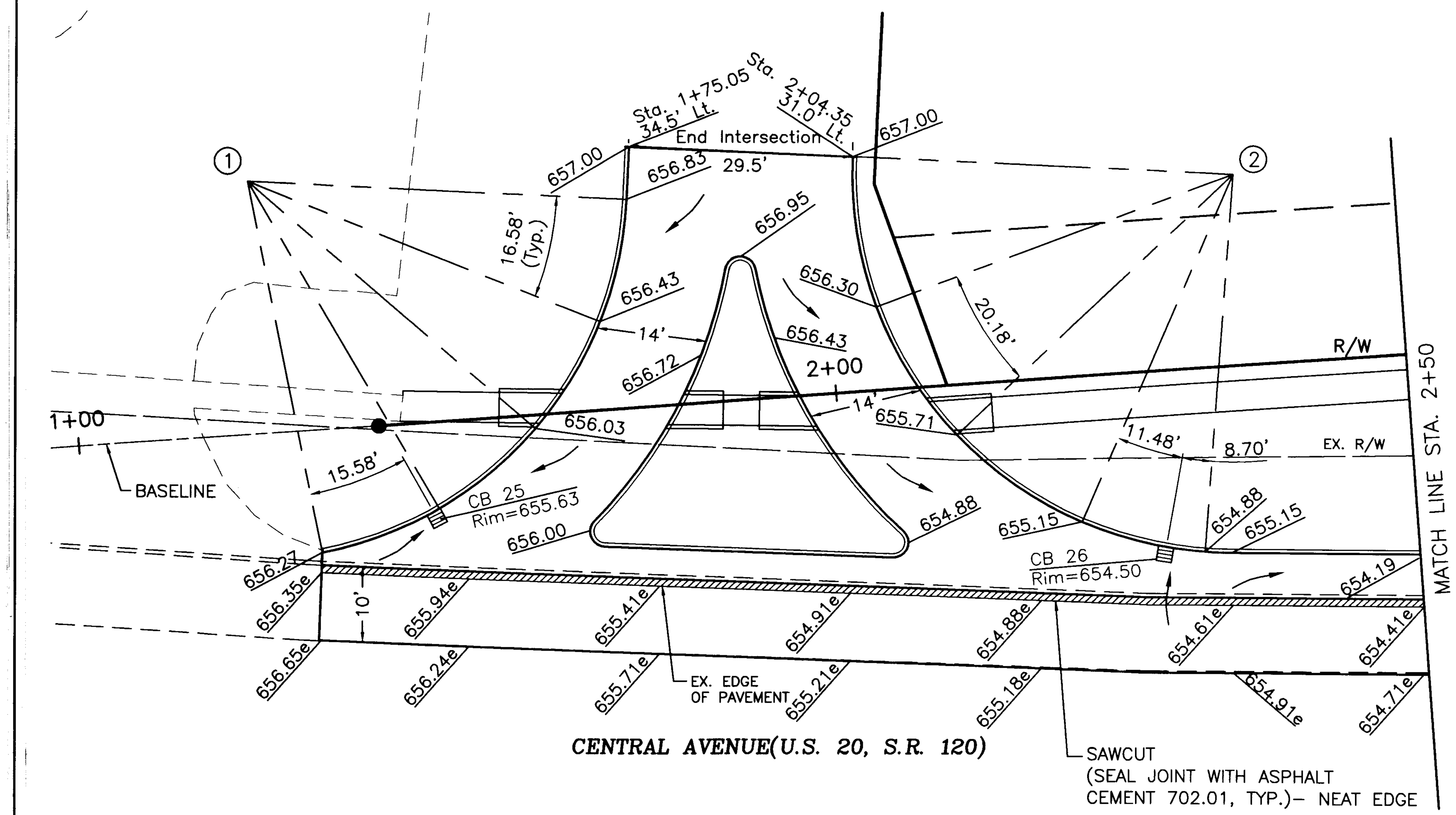
CALCULATED MDV
CHECKED JLW

PAVEMENT DETAILS
PERCENTUM ROAD - RETAIL DRIVE NO. 3 INTERSECTION

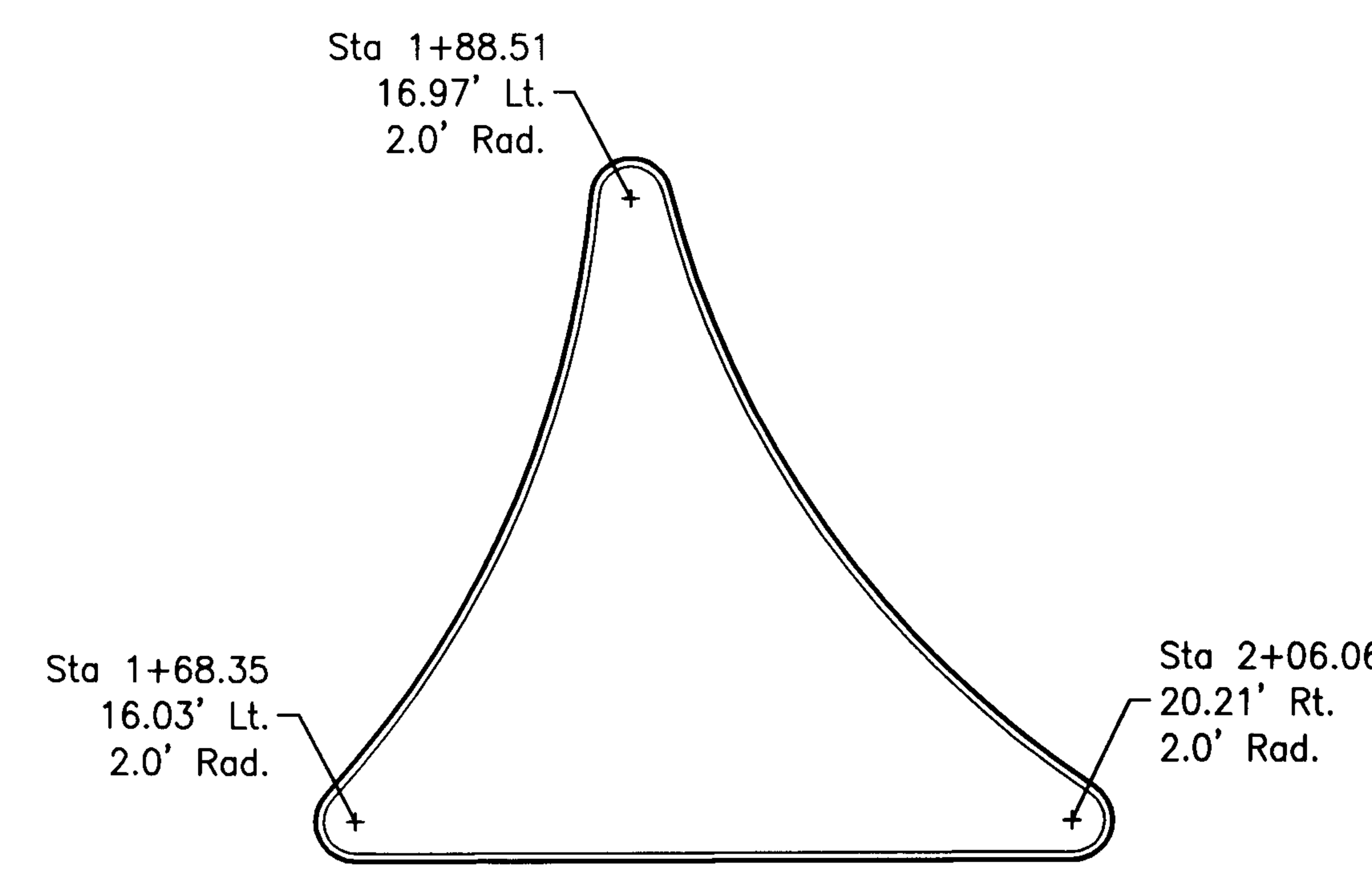
LUC - PERCENTUM ROAD

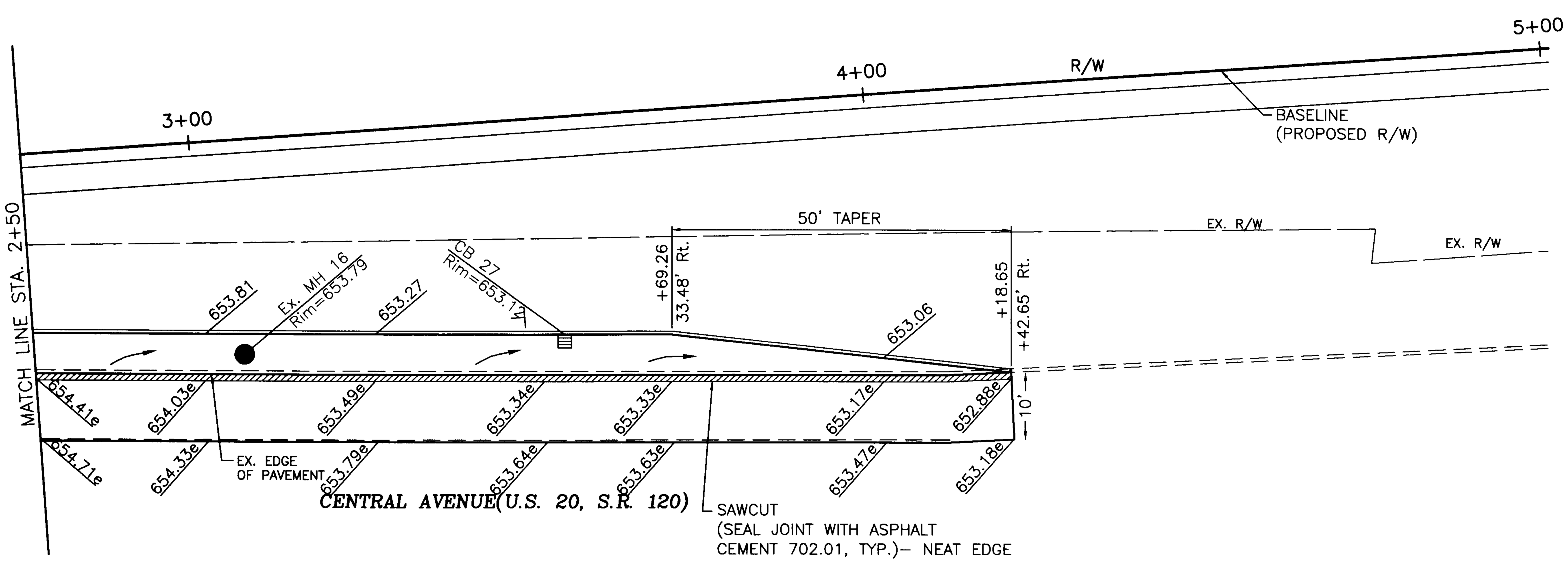
19
31

B157A1C
FILE 774



ISLAND DETAIL





CURVE DATA

(1) Sta. 1+24.58, 33.37' LT. (℄)
Δ = 75°59'17"
R = 50.00'
L = 66.31'

(2) Sta. 2+54.01, 25.14' LT. (℄)
Δ = 88°27'59"
R = 50.00'
L = 80.72'

All Curb Radii Measured From F.O.C.

NOTE

Remove Existing Curb Along Saw Cut
305 Lin. Ft.

LEGEND

00.8	Proposed Elevation (F.O.C)
01.7e	Match Existing Elevation
→	Pavement Surface Flow

SEE SHEET 9 FOR QUANTITIES

0' 10' 20'
HORIZONTAL SCALE IN FEET

CALCULATED MDV
CHECKED JLW

PAVEMENT DETAILS
CENTRAL AVENUE DECELERATION LANE

LUC - PERCENTUM ROAD

B157A1D
FILE 774

S:\PROJECTS\CIV\B157A1D\ROADWAY\B157A1DA\B157A1D\P005
CAD Dwg. Scale: (Eng.) 1=1
Last Revision: 11/19/01
Last Revision By: jws
Description: FINAL

SEEDING End Width	SEEDING Sq. Yards
26	459
·	459

50 40 30 20 10 0 10 20 30 40 50 ℄

AHEAD TO STA. 11+44.88 — BACK

R/W R/W

660 650 640

652.60
STA.10+97.40
652.3

10" WATER MAIN
31.00' LT.
INV.=646.65

(END CENTRAL AVENUE INTERSECTION)

8" SAN. SEWER
29.6' RT.
INV=638.19

Prismodial Volume Results
From Computer Generated
Surface Model

ADD FOR CENTRAL AVENUE INTERSECTION

CB 22
STA. 10+47.61
57.84' LT.
RIM EL.=651.85
INV. 18" NW.=646.17
INV. 42" E.=646.17

CB 23
STA. 10+31.80
53.93' RT.
RIM EL.=651.40
INV. 42" E.&W.=646.13

113 L.F. Ex. 42" RCP @ 0.04%
18" Min.

652.03
STA.10+50
652.3

STA. 10+47.61
10" WATER MAIN
34.42' LT.
INV.=646.02

8" SAN. SEWER
29.15' RT.
INV=637.98

AHEAD — SEE CENTRAL AVE INTERSECTION CALCULATIONS

652.25
STA.10+12.49
652.2

(BEGIN CENTRAL AVENUE INTERSECTION)

℄

AREA Cut	AREA Fill	VOLUME Cut	VOLUME Fill
42	25		
SEE CENTRAL AVE INTERSECTION CALCULATIONS			
		371	184
SHEET TOTAL		371	184

SEEDING End Width	SEEDING Sq. Yards
0	58
	210
21	
	139
29	
129	
29	
144	
·	680

50 40 30 20 10 0 10 20 30 40 50 ℄

MH 1
STA. 12+82.37
42.67' LT.
RIM EL.=654.50
INV. 54" NW.&S.=646.47

SANITARY MH B
STA. 12+65.74
31.08' RT.
RIM EL.=654.53
INV. 8" NW.=640.83
INV. 8" SE.=638.84

R/W R/W

660 650 640

BACK

654.24
STA.12+50
653.0

10" WATER MAIN
31.00' LT.
INV.=648.37

Prismodial Volume Results
From Computer Generated
Surface Model

ADD FOR RETAIL INTERSECTION #1

653.73
STA.12+00
652.8

10" WATER MAIN
31.00' LT.
INV.=647.78

8" SAN. SEWER
30.80' RT.
INV=638.58

653.14
STA.11+84.88
652.7

10" WATER MAIN
31.00' LT.
INV.=647.64

8" SAN. SEWER
30.80' RT.
INV=638.38

AHEAD — SEE RETAIL INTERSECTION #1 CALCULATIONS

BACK

653.08
STA.11+44.88
652.7

(BEGIN RETAIL INTERSECTION #1)

10" WATER MAIN
31.00' LT.
INV.=647.14

8" SAN. SEWER
30.90' RT.
INV=638.36

℄

AREA Cut	AREA Fill	VOLUME Cut	VOLUME Fill
		450	230
BACK	40	36	
		63	47
SHEET TOTAL		556	277

CALCULATED MDV
CHECKED JLW

0' 5' 10' 20'
HORIZONTAL SCALE IN FEET

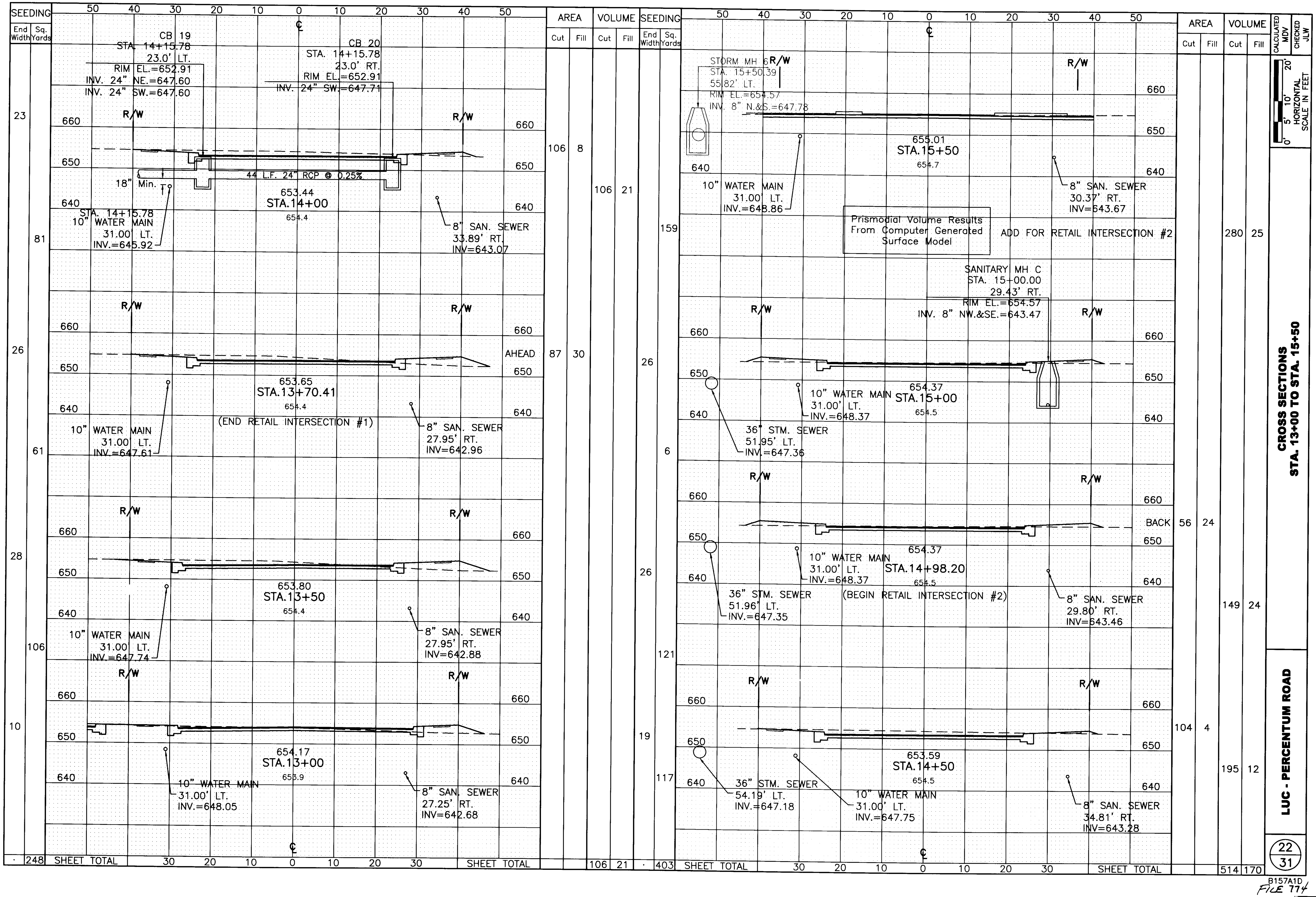
CROSS SECTIONS
STA. 10+21.82 TO STA. 12+50

LUC - PERCENTUM ROAD

21
31

B157A1D
FILE 774

S:\PROJECTS\CVA\B157A1D\ROADWAY\B157A1DA\B157A1DA03.XS01
Last Plotted: [Time] 9/01
Last Revision By: jws
Description: FINAL

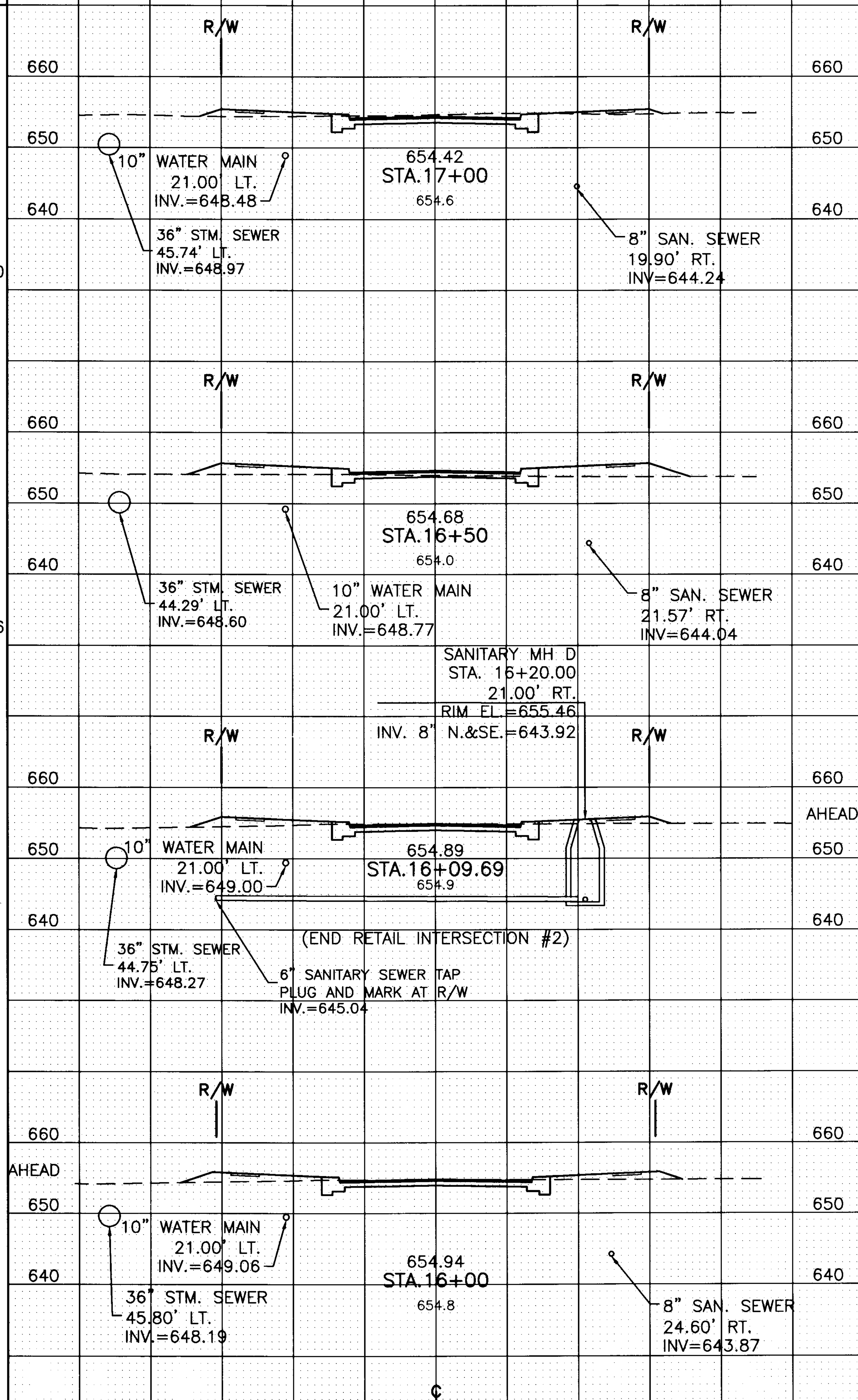


SEEDING
End Width
Sq. Yards
AREA
Cut
Fill
VOLUME
Cut
Fill
CB 19
STA. 14+15.78
23.0' LT.
RIM EL.=652.91
INV. 24" NE.=647.60
INV. 24" SW.=647.60
CB 20
STA. 14+15.78
23.0' RT.
RIM EL.=652.91
INV. 24" SW.=647.71
R/W
44 L.F. 24" RCP @ 0.25%
18" Min.
653.44
STA.14+00
654.4
STA. 14+15.78
10" WATER MAIN
31.00 LT.
INV.=645.92
8" SAN. SEWER
33.89' RT.
INV=643.07
23
81
106
8
106
21
653.65
STA.13+70.41
654.4
(END RETAIL INTERSECTION #1)
10" WATER MAIN
31.00 LT.
INV.=647.61
8" SAN. SEWER
27.95' RT.
INV=642.96
AHEAD
87
30
26
61
653.80
STA.13+50
654.4
10" WATER MAIN
31.00 LT.
INV.=647.74
8" SAN. SEWER
27.95' RT.
INV=642.88
28
106
654.17
STA.13+00
653.9
10" WATER MAIN
31.00' LT.
INV.=648.05
8" SAN. SEWER
27.25' RT.
INV=642.68
10
248
SHEET TOTAL
106
21
STORM MH 6
STA. 15+50.39
55.82' LT.
RIM EL.=654.57
INV. 8" N.&S.=647.78
655.01
STA.15+50
654.7
10" WATER MAIN
31.00 LT.
INV.=648.86
8" SAN. SEWER
30.37' RT.
INV=643.67
Prismodial Volume Results
From Computer Generated
Surface Model
ADD FOR RETAIL INTERSECTION #2
159
280
25
SANITARY MH C
STA. 15+00.00
29.43' RT.
RIM EL.=654.57
INV. 8" NW.&SE.=643.47
654.37
STA.15+00
654.5
10" WATER MAIN
31.00' LT.
INV.=648.37
36" STM. SEWER
51.95' LT.
INV.=647.36
26
6
654.37
STA.14+98.20
654.5
(BEGIN RETAIL INTERSECTION #2)
BACK
56
24
10" WATER MAIN
31.00' LT.
INV.=648.37
36" STM. SEWER
51.96' LT.
INV.=647.35
8" SAN. SEWER
29.80' RT.
INV=643.46
26
121
149
24
653.59
STA.14+50
654.5
36" STM. SEWER
54.19' LT.
INV.=647.18
10" WATER MAIN
31.00' LT.
INV.=647.75
8" SAN. SEWER
34.81' RT.
INV=643.28
19
117
104
4
195
12
403
SHEET TOTAL
514
170
CALCULATED MDV
CHECKED JLW
0 5' 10' 20'
HORIZONTAL SCALE IN FEET
CROSS SECTIONS
STA. 13+00 TO STA. 15+50
LUC - PERCENTUM ROAD
22
31
B157A1D
FILE 774

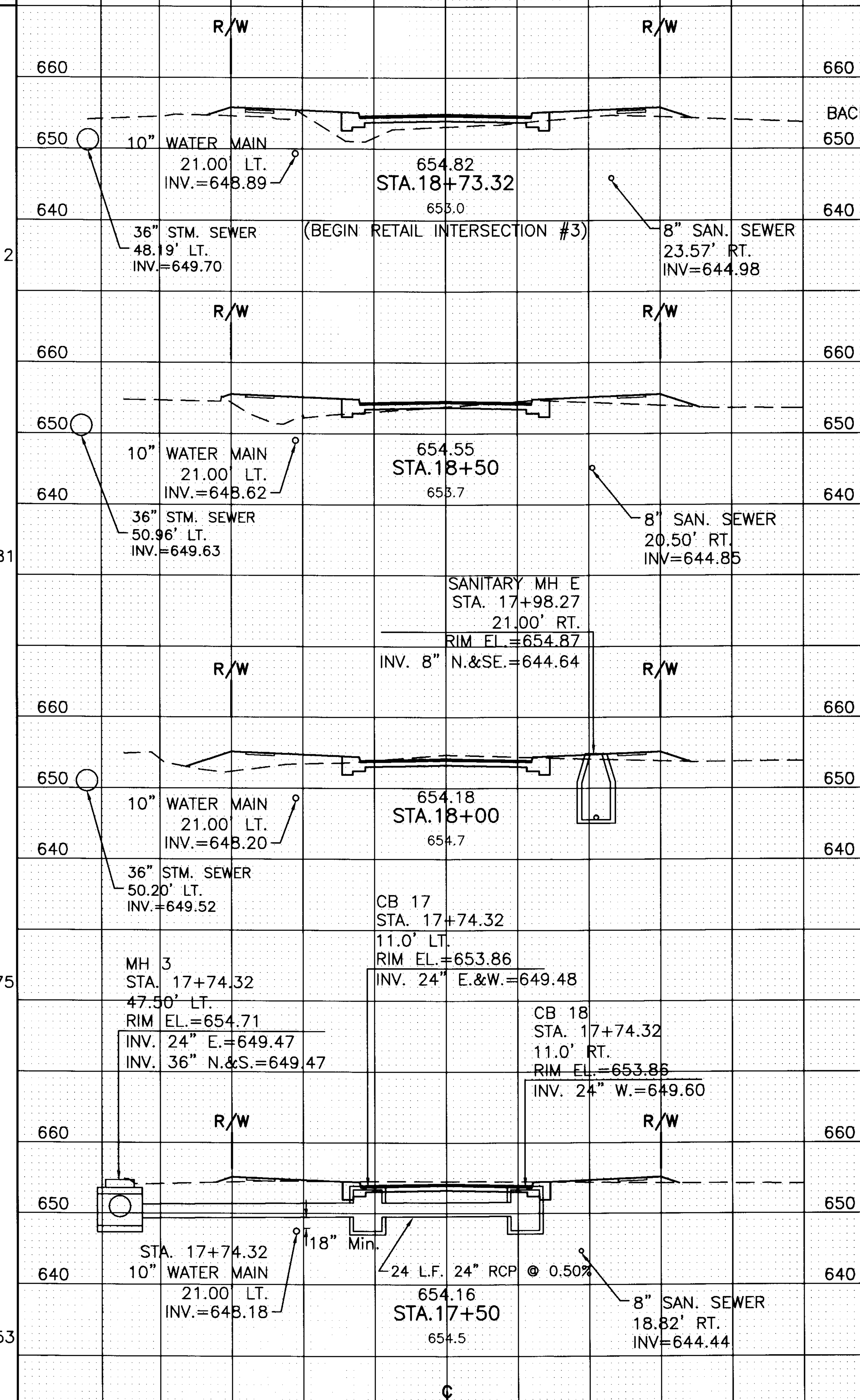
CROSS SECTIONS STA. 16+00 TO 18+83.08

LUC - PERCENTUM ROAD

Station	Seeding End Width	Seeding Sq. Yards	Area Cut	Area Fill	Volume Cut	Volume Fill
STA. 17+00	27		43	18		
		170			54	66
STA. 16+50	34		15	53		
		146			38	59
STA. 16+09.69	31		35	26		
		33				
STA. 16+00	30		39	31		
SHEET TOTAL	·	349			92	125



Station	Seeding End Width	Seeding Sq. Yards	Area Cut	Area Fill	Volume Cut	Volume Fill
STA. 18+73.32	31		3	69		
		112			11	83
STA. 18+50	30		15	66		
		181			51	108
STA. 18+00	35		40	50		
		175			79	59
STA. 17+50	28		46	13		
		153			82	29
SHEET TOTAL	·	621			223	279



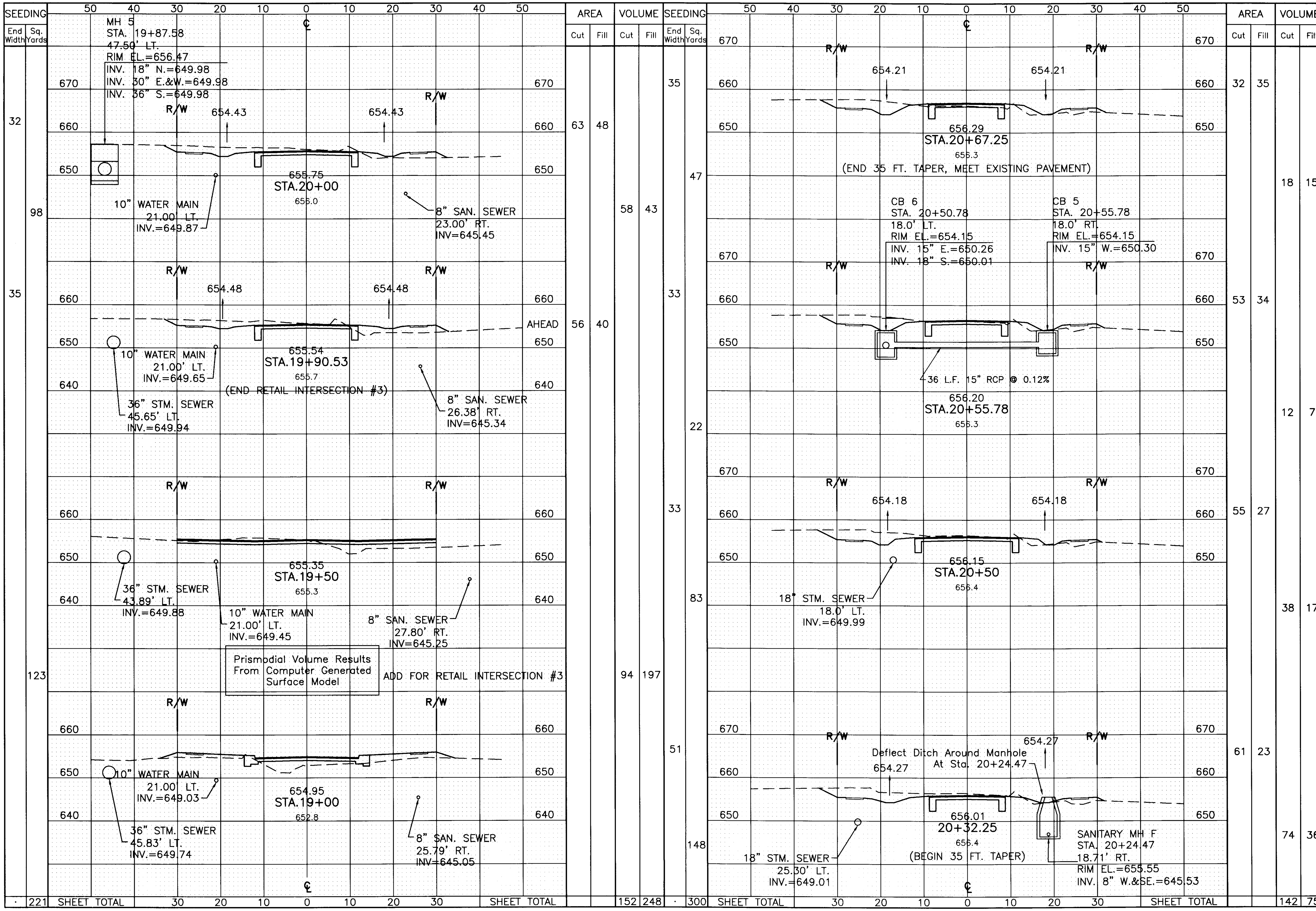
CALCULATED MDV
CHECKED JLW

0' 5' 10' 20'
HORIZONTAL SCALE IN FEET

CROSS SECTIONS
STA. 16+00 TO 18+83.08

LUC - PERCENTUM ROAD

B157A1D
FILE 774



STA.20+00
655.75
656.0
MH 5
STA. 19+87.58
47.50' LT.
RIM EL.=656.47
INV. 18" N.=649.98
INV. 30" E.&W.=649.98
INV. 36" S.=649.98
R/W
654.43
654.43
10" WATER MAIN
21.00' LT.
INV.=649.87
8" SAN. SEWER
23.00' RT.
INV=645.45
STA.19+90.53
655.54
655.7
(END RETAIL INTERSECTION #3)
654.48
654.48
AHEAD
10" WATER MAIN
21.00' LT.
INV.=649.65
36" STM. SEWER
45.65' LT.
INV.=649.94
8" SAN. SEWER
26.38' RT.
INV=645.34
STA.19+50
655.35
655.3
36" STM. SEWER
43.89' LT.
INV.=649.88
10" WATER MAIN
21.00' LT.
INV.=649.45
8" SAN. SEWER
27.80' RT.
INV=645.25
Prismodial Volume Results From Computer Generated Surface Model
ADD FOR RETAIL INTERSECTION #3
STA.19+00
654.95
652.8
10" WATER MAIN
21.00' LT.
INV.=649.03
36" STM. SEWER
45.83' LT.
INV.=649.74
8" SAN. SEWER
25.79' RT.
INV=645.05
STA.20+67.25
656.29
656.3
654.21
654.21
(END 35 FT. TAPER, MEET EXISTING PAVEMENT)
STA.20+55.78
656.20
656.3
CB 6
STA. 20+50.78
18.0' LT.
RIM EL.=654.15
INV. 15" E.=650.26
INV. 18" S.=650.01
CB 5
STA. 20+55.78
18.0' RT.
RIM EL.=654.15
INV. 15" W.=650.30
36 L.F. 15" RCP @ 0.12%
STA.20+50
656.15
656.4
654.18
654.18
18" STM. SEWER
18.0' LT.
INV.=649.99
20+32.25
656.01
656.4
(BEGIN 35 FT. TAPER)
Deflect Ditch Around Manhole At Sta. 20+24.47
654.27
654.27
18" STM. SEWER
25.30' LT.
INV.=649.01
SANITARY MH F
STA. 20+24.47
18.71' RT.
RIM EL.=655.55
INV. 8" W.&SE.=645.53

Station	Seeding End Width	Seeding Sq. Yards	Area Cut	Area Fill	Volume Cut	Volume Fill
20+00	32		63	48		
		98			58	43
19+90.53	35		56	40		
19+50						
		123			94	197
19+00						
SHEET TOTAL	·	221			152	248

Station	Seeding End Width	Seeding Sq. Yards	Area Cut	Area Fill	Volume Cut	Volume Fill
20+67.25	35		32	35		
		47			18	15
20+55.78	33		53	34		
		22			12	7
20+50	33		55	27		
		83			38	17
20+32.25	51		61	23		
		148			74	36
SHEET TOTAL	·	300			142	75

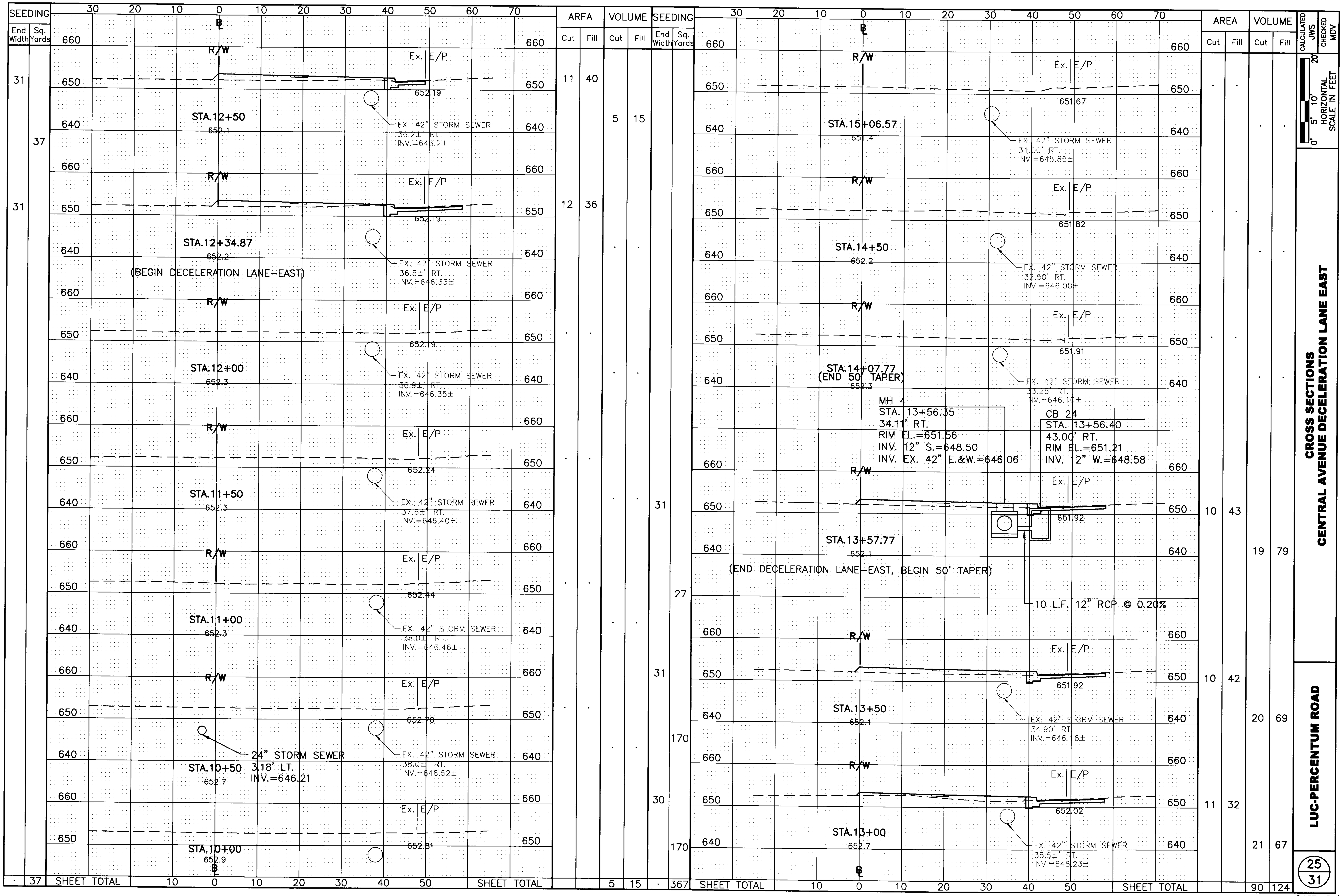
CALCULATED JWS
CHECKED MDV

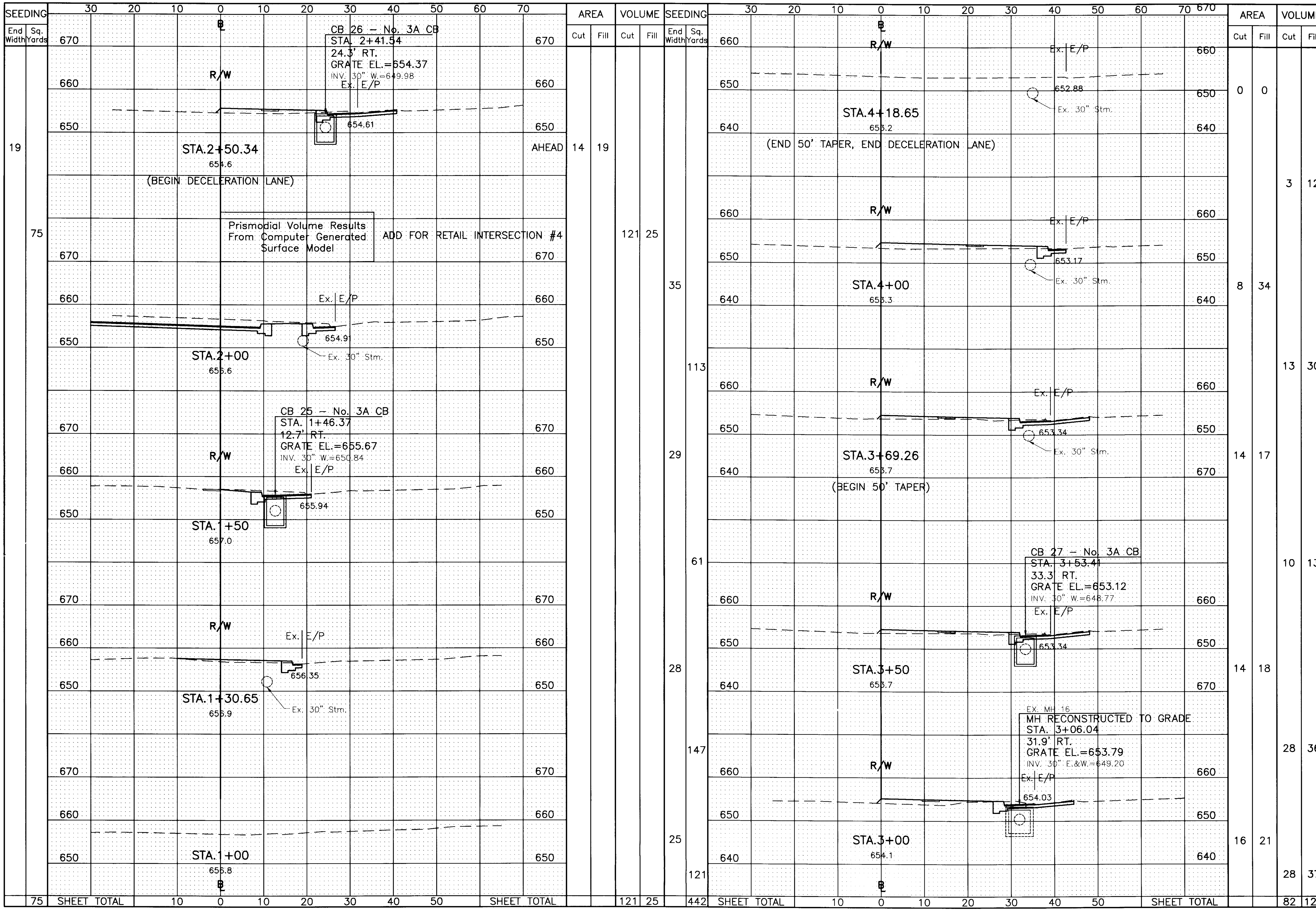
0 5' 10' 20
HORIZONTAL SCALE IN FEET

CROSS SECTIONS
STA. 19+00 TO 20+67.25

LUC - PERCENTUM ROAD

B157A1D
FILE 774


SEEDING
End Width
Sq. Yards
AREA
Cut
Fill
VOLUME
Cut
Fill
30 20 10 0 10 20 30 40 50 60 70
STA.12+50
652.1
EX. 42" STORM SEWER
36.2±' RT.
INV.=646.2±
652.19
31
11 40
5 15
37
STA.12+34.87
652.2
(BEGIN DECELERATION LANE-EAST)
EX. 42" STORM SEWER
36.5±' RT.
INV.=646.33±
652.19
31
12 36
STA.12+00
652.3
EX. 42" STORM SEWER
36.9±' RT.
INV.=646.35±
652.19
STA.11+50
652.3
EX. 42" STORM SEWER
37.6±' RT.
INV.=646.40±
652.24
STA.11+00
652.3
EX. 42" STORM SEWER
38.0±' RT.
INV.=646.46±
652.44
STA.10+50
652.7
24" STORM SEWER
3.18' LT.
INV.=646.21
EX. 42" STORM SEWER
38.0±' RT.
INV.=646.52±
652.70
STA.10+00
652.9
652.81
R/W
Ex. E/P
SHEET TOTAL
· 37
5 15
STA.15+06.57
651.4
EX. 42" STORM SEWER
31.00' RT.
INV.=645.85±
651.67
STA.14+50
652.2
EX. 42" STORM SEWER
32.50' RT.
INV.=646.00±
651.82
STA.14+07.77
(END 50' TAPER)
652.3
EX. 42" STORM SEWER
33.25' RT.
INV.=646.10±
651.91
MH 4
STA. 13+56.35
34.11' RT.
RIM EL.=651.56
INV. 12" S.=648.50
INV. EX. 42" E.&W.=646.06
CB 24
STA. 13+56.40
43.00' RT.
RIM EL.=651.21
INV. 12" W.=648.58
STA.13+57.77
652.1
651.92
(END DECELERATION LANE-EAST, BEGIN 50' TAPER)
10 L.F. 12" RCP @ 0.20%
31
10 43
27
19 79
STA.13+50
652.1
EX. 42" STORM SEWER
34.90' RT.
INV.=646.16±
651.92
31
10 42
170
20 69
STA.13+00
652.7
EX. 42" STORM SEWER
35.5±' RT.
INV.=646.23±
652.02
30
11 32
170
21 67
SHEET TOTAL
· 367
90 124
CALCULATED JWS
CHECKED MDV
0 5' 10' 20
HORIZONTAL SCALE IN FEET
CROSS SECTIONS
CENTRAL AVENUE DECELERATION LANE EAST
LUC-PERCENTUM ROAD
25/31
B157A10
FILE 774


SEEDING
End Width
Sq. Yards
AREA
Cut
Fill
VOLUME
Cut
Fill
CB 26 – No. 3A CB
STA. 2+41.54
24.3' RT.
GRATE EL.=654.37
INV. 30" W.=649.98
Ex. E/P
R/W
654.61
STA.2+50.34
654.6
AHEAD
(BEGIN DECELERATION LANE)
Prismodial Volume Results
From Computer Generated
Surface Model
ADD FOR RETAIL INTERSECTION #4
654.91
Ex. 30" Stm.
STA.2+00
656.6
CB 25 – No. 3A CB
STA. 1+46.37
12.7' RT.
GRATE EL.=655.67
INV. 30" W.=650.84
655.94
STA.1+50
657.0
656.35
STA.1+30.65
656.9
STA.1+00
656.8
SHEET TOTAL
652.88
STA.4+18.65
653.2
(END 50' TAPER, END DECELERATION LANE)
653.17
STA.4+00
653.3
653.34
STA.3+69.26
653.7
(BEGIN 50' TAPER)
CB 27 – No. 3A CB
STA. 3+53.41
33.3 RT.
GRATE EL.=653.12
INV. 30" W.=648.77
STA.3+50
653.7
EX. MH 16
MH RECONSTRUCTED TO GRADE
STA. 3+06.04
31.9' RT.
GRATE EL.=653.79
INV. 30" E.&W.=649.20
654.03
STA.3+00
654.1
19 | 75 | 14 | 19 | 121 | 25
35 | 113 | 0 | 0 | 3 | 12
8 | 34 | 13 | 30
29 | 61 | 14 | 17 | 10 | 13
28 | 147 | 14 | 18 | 28 | 36
25 | 121 | 16 | 21 | 28 | 37
75 | 121 | 25 | 442 | 82 | 128

0' 5' 10' 20'
HORIZONTAL SCALE IN FEET

CALCULATED INITIALS
CHECKED INITIALS

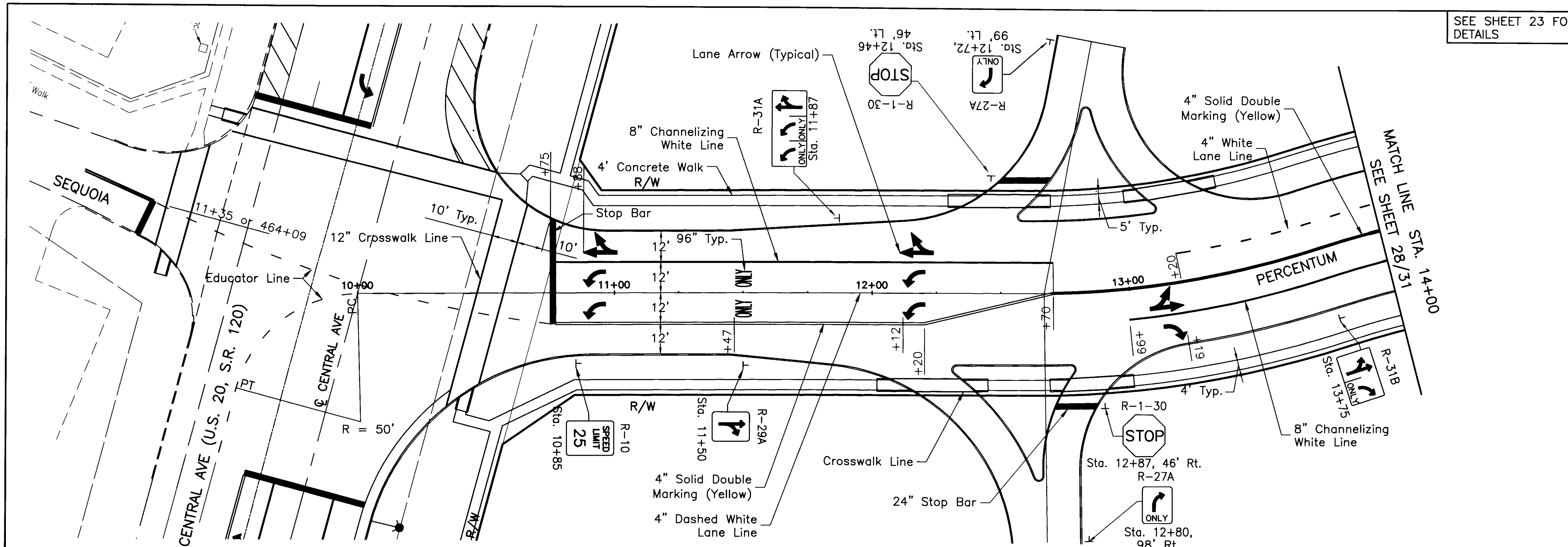
CROSS SECTIONS
CENTRAL AVENUE DECELERATION LANE WEST

LUC-PERCENTUM ROAD

26/31

B157A1D

FILE 774



TRAFFIC CONTROL SUBSUMMARY

Ref. No.	Location	Station From	Station To Or At	Side	642 Center Line	642 Edge Line	642 Dotted Line, White, 4"	642 Channelizing Line	642 Lane Line	642 Transverse Line	644 24" Stop Line	644 Crosswalk Line	644 Word On Pavement, 96"	644 Lane Arrow
					Lin. Ft.	Lin. Ft.	Lin. Ft.	Lin. Ft.	Lin. Ft.	Lin. Ft.	Lin. Ft.	Lin. Ft.	Each	Each
Percentum Road														
		10+00	14+00	Rt.&Lt.	336			294	223		76	174	2	8
		14+00	18+00	Rt.&Lt.	362			242	47		24		1	4
		18+00	20+63	Rt.&Lt.	267						31			
Central Avenue														
		2+15	4+18	Rt.		214		120		174	16	68	1	2
		6+09	10+99	Rt.&Lt.	477			426		162	47	207	3	4
		10+99	14+71	Rt.&Lt.	305	238	299	321			65	86	2	4
SUBTOTALS					1747	452	299	1403	270	336	259	535	9	22
TOTALS TO GENERAL SUMMARY					0.33 Mi	0.09 Mi	299	1403	0.05 Mi	336	259	535	9	22

RAISED PAVEMENT MARKERS

Ref. No.	Location	Station From	Station To Or At	621 Center Line RPM'S (2-Way Yellow)	621 Channelizing Line RPM'S (2-Way White/Red)
				Each	Each
Central Avenue					
		2+49	14+71	15	26
SUBTOTALS					
TOTALS TO GENERAL SUMMARY				15	26

SIGNING SUBSUMMARY

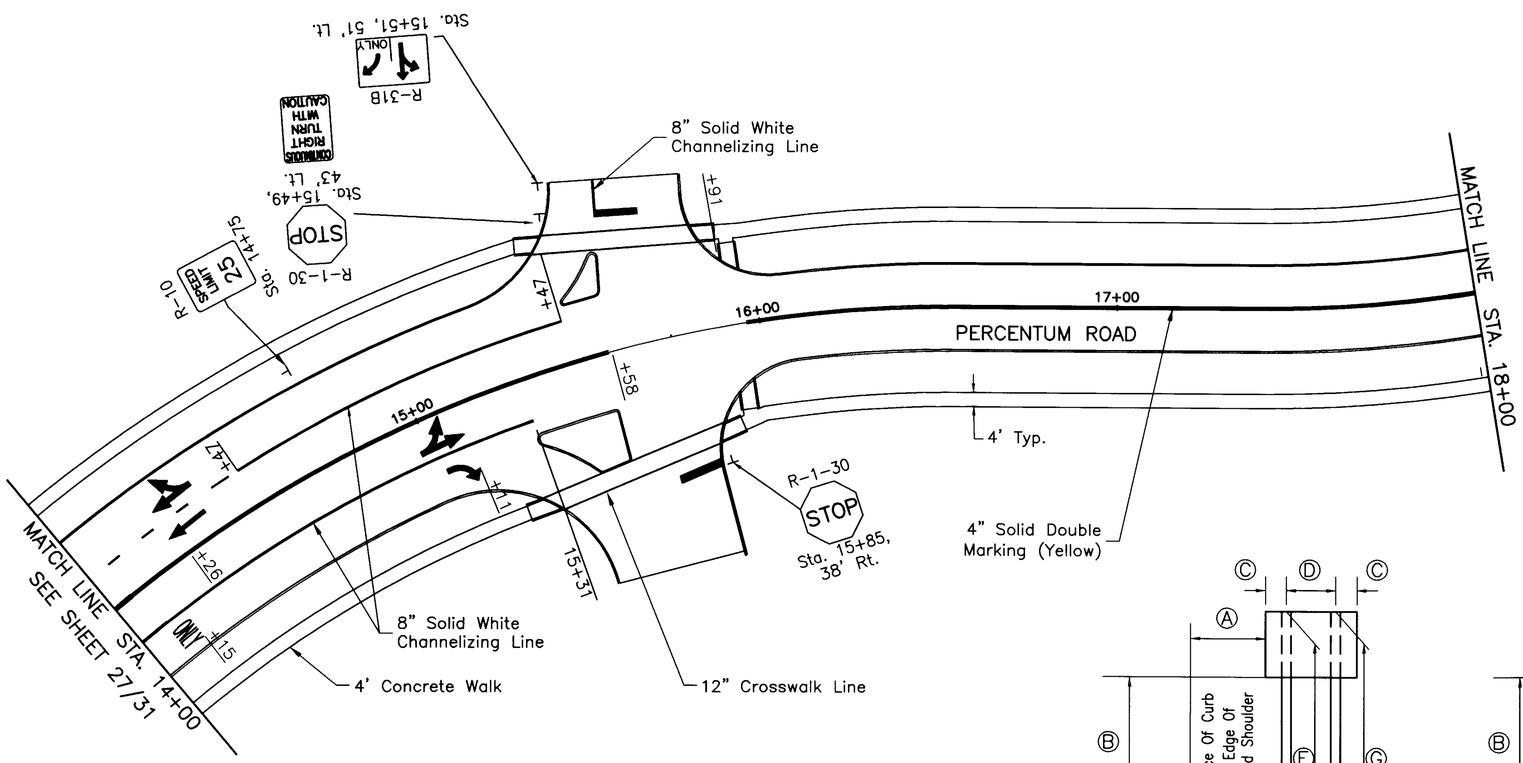
Station	Side	Sign Size (Inches)	Sign Code	Sign Area	630 Dimensions (Feet) A	B	C	D	Ground Mounted Support, Post Type (Feet) No. 2 F	No. 2 G	No. 3 F	No. 3 G	No. 4 F	No. 4 G	Sign, Flat Sheet, Type G Sq. Ft.
Percentum Road															
10+85	Rt.	24x30	R-10-24	5	2	7			13						5
11+50	Rt.	30x36	R-29A-30	7.5	2	7					13.5				7.5
11+87	Lt.	48x30	R-31A-48	10	2	7	0.75	2.5			13	13			10
12+46	Lt.	30x30	R-1-30	6.25	2	7			13						6.25
12+72	Lt.	30x36	R-27A-30	7.5	2	7					13.5				7.5
12+80	Rt.	30x36	R-27A-30	7.5	2	7					13.5				7.5
12+87	Rt.	30x30	R-1-30	6.25	2	7			13						6.25
13+75	Rt.	36x30	R-31B-36	7.5	2	7	0.5	2			13	13			7.5
14+75	Lt.	24x30	R-10-24	5	2	7			13						5
15+49	Lt.	30x30	R-1-30	6.25	2	7			13						6.25
		24x30	R-25D	5											5
15+51	Lt.	36x30	R-31B-36	7.5	2	7	0.5	2			13	13			7.5
15+85	Rt.	30x30	R-1-30	6.25	2	7			13						6.25
19+17	Lt.	30x30	R-1-30	6.25	2	7			13						6.25
19+48	Rt.	30x30	R-1-30	6.25	2	7			13						6.25
Central Avenue															
3+48	Rt.	48x30	R-31E-48	10	2	7	0.75	2.5			13	13			10
7+02	Rt.	48x30	R-31C-48	10	2	7	0.75	2.5			13	13			10
14+58	Rt.	54x30	R-31T-54	11.25	2	7	1	2.5					13	13	11.25
SUBTOTALS									104		105.5	65	13	13	131.25
TOTALS TO GENERAL SUMMARY									104		171		26		132

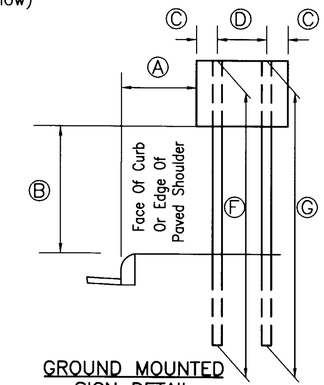
CALCULATED SES
CHECKED JLW

PAVEMENT MARKING AND SIGNING PLAN STA. 10+00 TO STA. 14+00

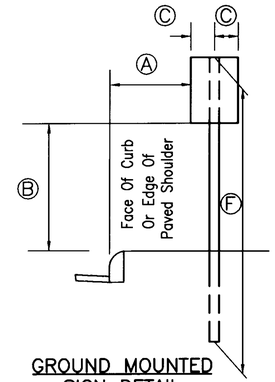
LUC - PERCENTUM ROAD

B157A1D
FILE 774

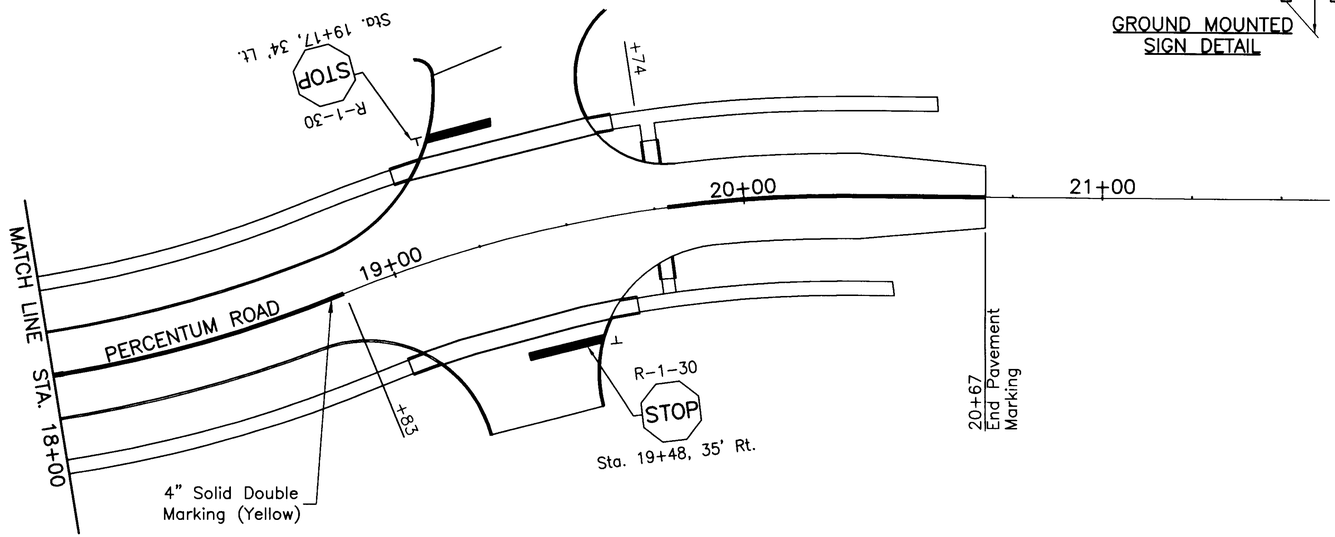


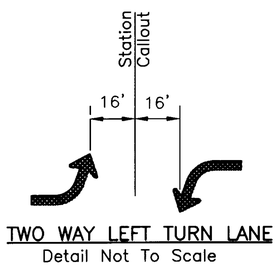


GROUND MOUNTED SIGN DETAIL



GROUND MOUNTED SIGN DETAIL





TWO WAY LEFT TURN LANE
Detail Not To Scale

SEE SHEET 22 FOR QUANTITIES

N

0' 20' 40'
HORIZONTAL SCALE IN FEET

CALCULATED MDV
CHECKED JLW

PAVEMENT MARKING AND SIGNING PLAN STA. 14+00 TO STA. 21+63.23

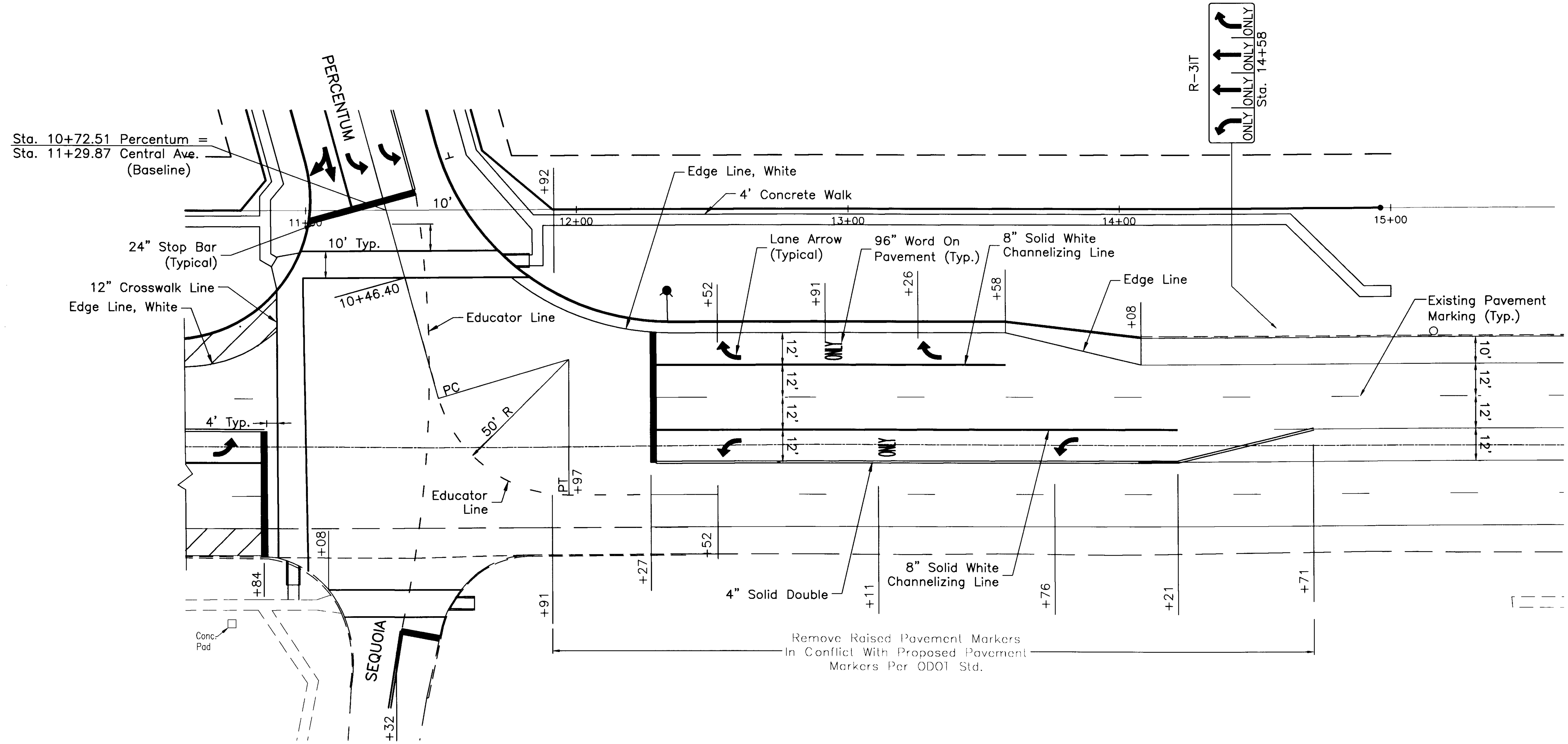
LUC - PERCENTUM ROAD

28
31

B157A1D
FILE 774

S:\PROJECTS\DOT\B157A1D\ROADWAY\B157A1DA\B157A1DA_PN02
CAD Dwg. Scale: (Eng.) 1=1
Last Revised By: JLW 2/10/02
Description: SIGN REMOVAL

NOTE:
REMOVE EXISTING TWO WAY LEFT TURN MARKINGS FROM STA. 8+69 TO 14+57.
REMOVE ALL OTHER EXISTING MARKINGS FROM STA. 10+84 TO 11+91.



SEE SHEET 22 FOR QUANTITIES
SEE SHEET 23 FOR DETAILS

PAVEMENT MARKING AND SIGNING PLAN
STA. 8+00 TO STA. 15+00 (BASELINE CENTRAL AVE)

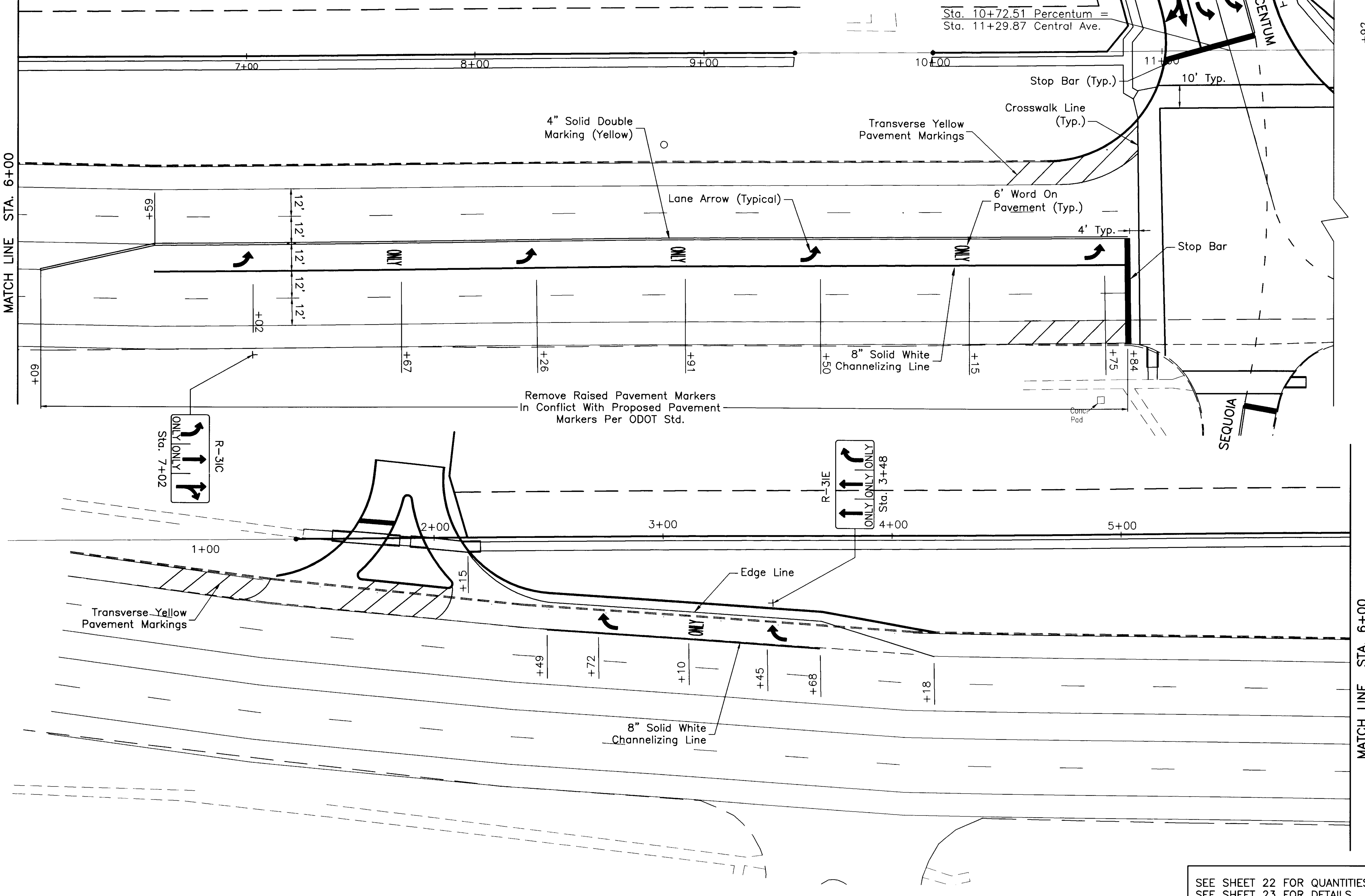
LUC - PERCENTUM ROAD

HORIZONTAL SCALE IN FEET: 0 20' 40'

CALCULATED SES
CHECKED JLW

B157A1D
FILE 774

NOTE:
REMOVE EXISTING TWO WAY LEFT TURN MARKINGS FROM STA. 6+09 TO 14+57.
REMOVE ALL OTHER EXISTING MARKINGS FROM STA. 10+84 TO 11+91.



PAVEMENT MARKING AND SIGNING PLAN
STA. 0+00 TO STA. 11+50 (BASELINE CENTRAL AVE)

LUC - PERCENTUM ROAD

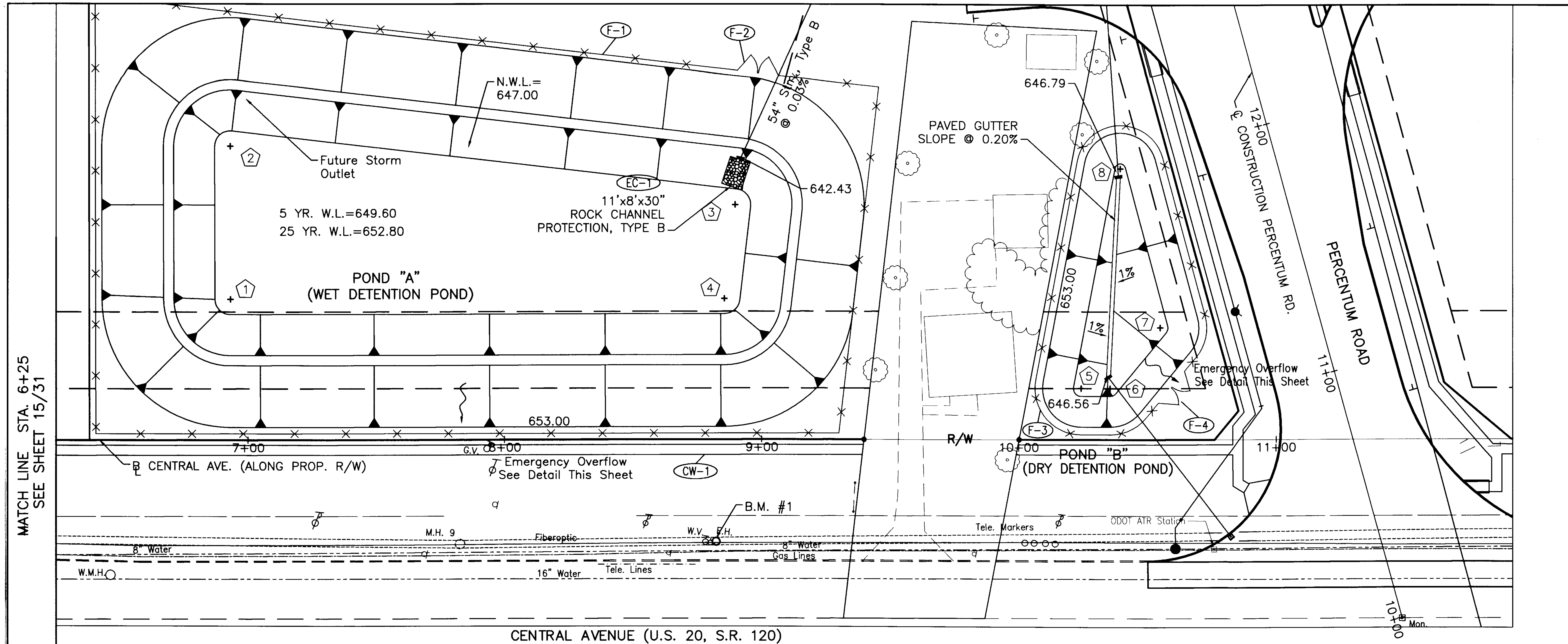
HORIZONTAL SCALE IN FEET: 0' 20' 40'

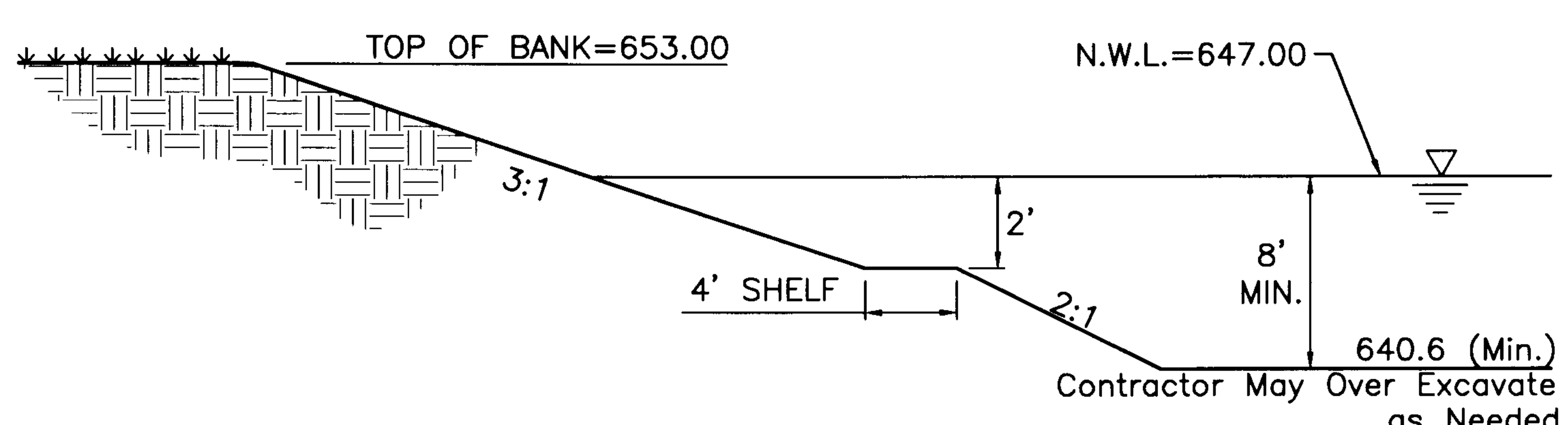
CALCULATED SES | CHECKED JLW

SEE SHEET 22 FOR QUANTITIES
SEE SHEET 23 FOR DETAILS

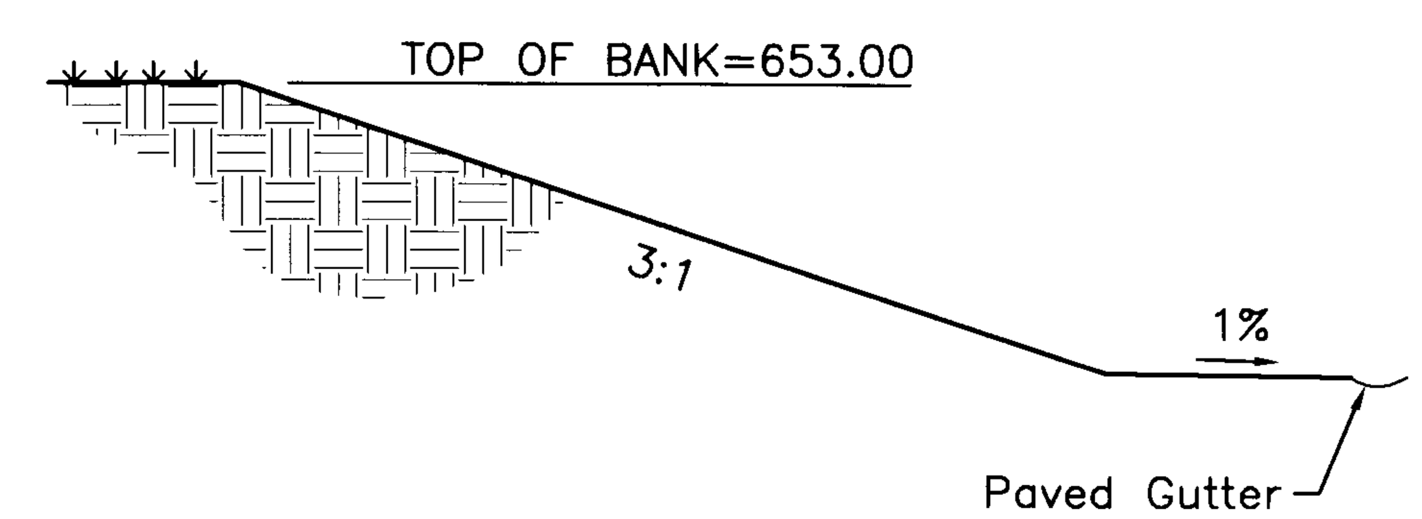
30 / 31

B157A1D
FILE 774

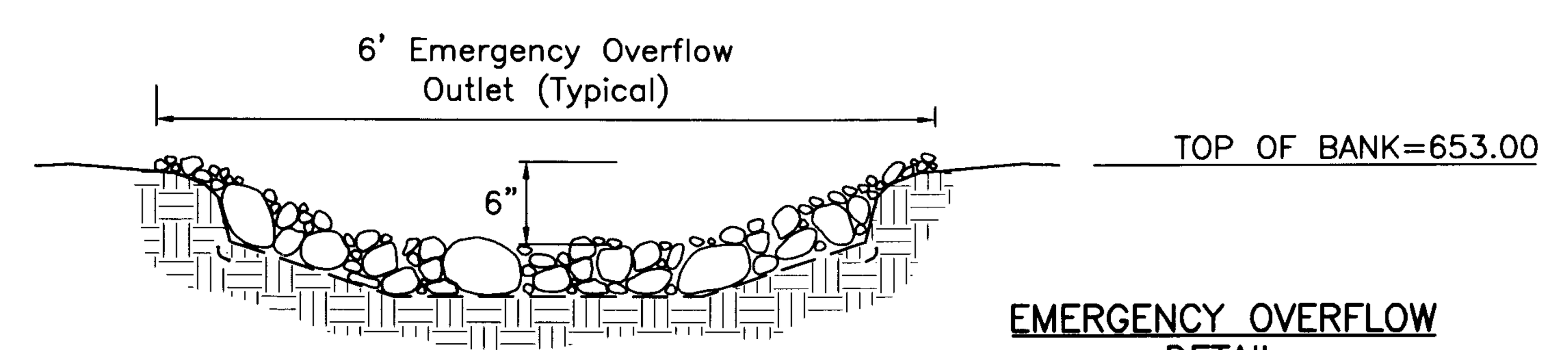




POND "A" DETAIL



POND "B" DETAIL



EMERGENCY OVERFLOW DETAIL

ESTIMATED QUANTITIES

Ref. No.	Station From	Station To Or At	Side	601 R.C.P. w/o Filter, Type B (Cu.Yd.)		607 Fence, Type CL (Lin.Ft.)	607 Gate, Type CL (Each)		608 4' Conc. Walk (Lin.Ft.)
CW-1	6+25.00	9+37.63	Lt.						1257
F-1	6+40.75	9+43.36	Lt.	9		846			
F-2		8+96.78	Lt.				1		
F-3	10+06.53	10+72.90	Lt.			288			
F-4		10+59.38	Lt.				1		
EC-1		8+98.70	Lt.				1		
Totals To General Summary				9		1134	2		1257

REF. PT.	DESCRIPTION	LOCATION	STATION	OFFSET	ELEV.
1	CEN. OF 3' RAD. POND BOTTOM	POND "A"	6+85.5	47.2' LT.	640.6
	CEN. OF 42' RAD. TOP OF BANK				
2	CEN. OF 3' RAD. POND BOTTOM	POND "A"	6+85.5	103.3' LT.	640.6
	CEN. OF 42' RAD. TOP OF BANK				
3	CEN. OF 3' RAD. POND BOTTOM	POND "A"	8+96.3	78.6 LT.	640.6
	CEN. OF 42' RAD. TOP OF BANK				
4	CEN. OF 3' RAD. POND BOTTOM	POND "A"	8+92.6	47.2' LT.	640.6
	CEN. OF 42' RAD. TOP OF BANK				
5	CEN. OF 3' RAD. POND BOTTOM	POND "B"	10+24.2	20.0' LT.	646.25
	CEN. OF 15' RAD. TOP OF BANK				
6	CEN. OF 3' RAD. POND BOTTOM	POND "B"	10+39.6	105.6' LT.	646.39
	CEN. OF 15' RAD. TOP OF BANK				
7	CEN. OF 3' RAD. POND BOTTOM	POND "B"	10+55.0	43.8' LT.	646.33
	CEN. OF 15' RAD. TOP OF BANK				
8	CEN. OF 2' RAD. POND BOTTOM	POND "B"	10+35.5	20.0' LT.	646.23
	CEN. OF 14' RAD. TOP OF BANK				

BENCH MARK NO. 1

B.M. #1 (This Sheet)
N. B BOLT OF HYDRANT
Sta. 8+82.31 (Baseline Central Ave.), 40' Rt.
El. = 656.18

CALCULATED MDV
CHECKED JLW

POND DETAILS

LUC - PERCENTUM ROAD

B157A1D
FILE 774

GENERAL

ALL REFERENCES TO STANDARDS ARE TO THE LATEST ADDITION.

IT IS THE INTENT OF THESE PLANS AND SPECIFICATIONS THAT THE CONTRACTOR WILL FURNISH AND INSTALL CONDUIT, PEDESTALS, TRAFFIC SIGNAL HEADS, CABLE AND WIRING LOOPS, FOUNDATIONS, PULL BOXES, GROUND RODS AND ALL MATERIALS, LABOR, EQUIPMENT, TOOLS AND INCIDENTALS NECESSARY TO COMPLETE THE INSTALLATION IN PLACE, COMPLETED AND ACCEPTED IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS.

THE CONTRACTOR SHALL NOTIFY THE OHIO UTILITIES PROTECTIONS SERVICE (TOLL FREE CALL 800-362-2754) AT LEAST FORTY-EIGHT (48) HOURS IN ADVANCE OF EACH AND EVERY GROUND BREAKING FOR CONSTRUCTION ITEMS SHOWN IN THIS PLAN.

POWER SUPPLY FOR TRAFFIC SIGNALS

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ARRANGING AND PROVIDING POWER THROUGH THE TOLEDO EDISON COMPANY. POWER SERVICE SHALL BE PROVIDED AS SHOWN ON SHEET AT THE LOCATION INDICATED ON THE PLANS. POWER SUPPLIED SHALL BE 120 VOLTS.

632 VEHICULAR SIGNAL HEAD, 3 AND 5 SECTION 12-INCH LENS, 1 WAY, AS PER PLAN

THIS ITEM SHALL CONFORM TO ITEM 632 EXCEPT THE ENTRANCE FITTING SHALL BE OF THE TRI-STUD DESIGN WITH SEPARATED RINGS IN ORDER TO ACHIEVE POSITIVE LOCKING.

632 LOOP DETECTOR UNITS, BY TYPE, AS PER PLAN

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

THE OUTPUT DEVICE SHALL BE A RELAY, AND ALL CONTACTS SHALL BE INCLUDED IN THE WIRING HARNESS.

THE OUTPUT DEVICE SHALL BE A RELAY, AND ALL CONTACTS SHALL BE INCLUDED IN THE WIRING HARNESS.

THE UNIT SHALL BE SELF TUNING.

THE UNIT'S ELECTRICAL CONNECTION PLUGS OR WIRING HARNESS SHALL ALLOW READY REPLACEMENT WITH A SINGLE CHANNEL AMPLIFIER AS DESCRIBED IN THE FINAL PARAGRAPH OF 732.07.

EACH UNIT SHALL BE LABELED TO CORRESPOND TO ITS PHASE AND DIRECTION.

DELAY INHIBIT SHALL BE CONNECTED ON ALL DETECTOR HARNESSES FOR THEIR RESPECTIVE PHASE GREENS.

STRAIN POLE FOUNDATION ELEVATIONS

ELEVATIONS SHOWN IN THE PLANS FOR STRAIN POLE FOUNDATIONS ARE FOR COMPUTATIONAL PURPOSES ONLY. THE ACTUAL ELEVATION OF THE FOUNDATION SHALL BE IN ACCORDANCE WITH TC-21.20 PROVIDED THE EXISTING SLOPE IS LESS THAN 6:1.

AT LOCATIONS WHERE THE EXISTING SLOPE IS 6:1 OR GREATER, THE BURIED DEPTH OF FOUNDATION, AS SHOWN IN STANDARD DRAWING TC-21.20, SHALL APPLY TO THE LOW SIDE OF THE SLOPE. THE TOP OF THE FOUNDATION SHALL BE SET 2 INCHES ABOVE THE EXISTING SURFACE ON THE HIGH SIDE OF THE SLOPE. THE ADDITIONAL DEPTH OF FOUNDATION NECESSARY TO MEET THESE REQUIREMENTS SHALL BE ADDED TO THE FORMED TOP.

PAYMENT FOR ADDITIONAL CONCRETE SHALL BE AT THE CONTRACT UNIT PRICE BID FOR ITEM 632 STRAIN POLE FOUNDATION.

SIGNAL PLAN KEY

Symbol	Description
	Power Pole
	Telephone Pole
	Light Pole
●	Signal Strain Pole
⊗	Signal Power Source
■	Pullbox
	Controller with Pad & Pullbox
	Span Wire Signal Head
	Span Wire 5-Section Signal Head
	Conduit
L-#	Signal Loop

633 ITEM CONTROLLER, MISC.: MODEL 2070L, WITH MODEL 332 CABINET AND ACCESSORIES

SPECIFICATIONS FOR THESE CONTROLLERS AND CABINETS SHALL BE "TRANSPORTATION ELECTRICAL EQUIPMENT SPECIFICATIONS", CALIFORNIA DEPARTMENT OF TRANSPORTATION, NOVEMBER 19, 1998, INCLUDING ALL ADDENDA. THE CONTROLLER UNITS AND CABINETS SHALL CURRENTLY BE LIST". PLEASE REFER TO SHEETS 3 AND 4 FOR FURTHER CONTROLLER AND CABINET SPECIFICATIONS. SHEETS 3 AND 4 WERE ORIGINALLY PRODUCED FOR ODOT'S 170E CONTROLLER SITES. EVERY EFFORT WAS MADE TO UPDATE SHEETS 3 AND 4 FOR THE LATEST 2070L AND 332 SPECIFICATIONS. THE CONTRACTOR SHALL PROVIDE THE LATEST EQUIPMENT AND ADHERE TO THE GENERAL SPECIFICATIONS SET FORTH IN SHEETS 3 AND 4 FOR THE CONTROLLERS AND CABINETS.

IN ADDITION:

1. THE 2070L CONTROLLER UNIT SHALL BE SUPPLIED WITH THE FOLLOWING MODULES:
   - MODEL 2070 UNIT CHASSIS
   - MODEL 2070-1B, CPU MODULE
   - MODEL 2070-2B, FIELD I/O FOR A 332 CABINET
   - MODEL 2070-3B, FRONT PANEL, DISPLAY B (40 CHAR. X 8 LINES)
   - MODEL 2070-4A, OR 2070-4B, POWER SUPPLY

2. IF A TELEPHONE DROP IS CURRENTLY INSTALLED AT AN INTERSECTION, ALL NECESSARY COMMUNICATION MODULES, MODEM, LIGHTNING PROTECTION AND CABLES FOR AUTO DIAL/ANSWER TELEPHONE CONNECTION SHALL BE PROVIDED.

3. IF THE CONTROLLER IS PART OF AN INTERCONNECTED SIGNAL SYSTEM, THE CONTROLLER SHALL INCLUDE MODEMS, PORTS, AND CABLES FOR SYSTEM COMMUNICATION BETWEEN OTHER CONTROLLERS OR WITH DETECTION ZONES, UNLESS OTHERWISE ITEMIZED HEREIN.

4. THE CONTROLLER UNIT SHALL HAVE ALL NECESSARY SOFTWARE TO EMULATE A NEMA EIGHT (8) PHASE, FULL-ACTUATED, SIGNAL OPERATION WITH OVERLAPS, PREEMPTION, INTERNAL TBC AND PEDESTRIAN MOVEMENTS.

5. IF THE CONTROLLER IS TO BE A MASTER UNIT IT SHALL HAVE ALL NECESSARY SOFTWARE, CABLES, PORTS AND EQUIPMENT NEEDED TO FUNCTION AS A MASTER CONTROLLER.

PAYMENT FOR THE ITEM 633 CONTROLLER, MISC.: MODEL 2070L, WITH MODEL 332 CABINET AND ACCESSORIES, AS PER PLAN, WILL BE AT THE CONTRACT BID PRICE COMPLETE AND IN PLACE INCLUDING CONTROLLER AND CABINET INSTALLATION, PROGRAMMING AND ALL NECESSARY ITEMS TO PLACE THE CONTROLLER INTO OPERATION IN THE SPECIFIED CABINET.

CALCULATED PLE
CHECKED JMH

SIGNAL GENERAL NOTES (1 OF 3)

CENTRAL AVE. (US20) & PERCENTUM RD./SEQUOIA RD. SIGNAL PLAN SHEETS

B157A1H
FILE 774

S:\PROJECTS\MSI\B157A1D\ROADWAY\B157A1H.T.GN01
CAD Dwg. Scale: (Eng.) 1=1
Last CAD Revision: 07/11/01
Last Revision By: ple
Description PAGE NUM

633 ITEM CONTROLLER, MISC.: MODEL 2070L, WITH MODEL 332 CABINET AND ACCESSORIES (POLE OR BASE MOUNTED) (CONTINUED)

THE CONTROLLER SUPPLIED SHALL BE COMPLETE WITH THE SPECIFIED CABINET INCLUDING ALL NECESSARY COMPONENTS AND CABLES NOT SPECIFICALLY MENTIONED BELOW. ALL EQUIPMENT AND CABINETS SHALL CONFORM TO ODOT SPECIFICATIONS 633, 733 AND THE FOLLOWING:

MODEL 2070L CONTROLLERS:

SPECIFICATIONS FOR THESE CONTROLLERS SHALL BE "TRANSPORTATION ELECTRICAL EQUIPMENT SPECIFICATIONS", CALIFORNIA DEPARTMENT OF TRANSPORTATION, NOVEMBER 19, 1998, INCLUDING ALL ADDENDA. THE CONTROLLER UNITS SHALL CURRENTLY BE LISTED ON THE CALTRANS "QUALIFIED PRODUCTS LIST".

IN ADDITION:

1. THE CONTROLLER UNIT SHALL NOT BE SUPPLIED WITH THE M170E BOARD.

2. FOR CABINETS THAT ARE TO BE INCLUDED IN A HARDWIRE (TWISTED PAIR) INTERCONNECTED SIGNAL SYSTEM, THE CONTROLLER UNIT SHALL INCLUDE A MODEL 400 MODEM AND COMMUNICATION SYSTEM INTERFACE AS SPECIFIED IN THE CALTRANS SPECIFICATIONS. IN ADDITION TO THE CALTRANS SPECIFICATION, MODEMS SHALL BE DESIGNED SUCH THAT IF ONE MODEM LOSES COMMUNICATION WITH THE MASTER, SUBSEQUENT MODEMS SHALL STILL BE ABLE TO COMMUNICATE.

3. AS PER CALTRANS REQUIREMENTS, ALL MEMORY, MICROPROCESSOR AND ACIA DEVICES SHALL BE SOCKET MOUNTED. SOCKETS SHALL HAVE MACHINED BERYLLIUM COPPER CONTACTS WITH GOLD PLATING.

4. A CABLE HARNESS, APPROXIMATELY 4 FT. LONG, SHALL BE SUPPLIED TO CONNECT A LAPTOP COMPUTER WITH THE CONTROLLER FOR THE TRANSFER OF DATA. THE CABLE SHALL HAVE A DB-9 CONNECTOR ON ONE END, AND A CONNECTOR ON THE OTHER END TO MATE WITH THE C2 ON THE BACK OF THE CONTROLLER.

5. ALL CIRCUIT BOARDS SHALL BE VERTICALLY MOUNTED.

6. THE POWER SUPPLY SHALL BE MODULAR AND EASILY REMOVABLE FROM THE CHASSIS.

7. THE UNIT SHALL CONTAIN SEPARATE INPUT AND OUTPUT MODULES.

8. IF A TELEPHONE DROP IS SHOWN IN THE PLANS, ALL NECESSARY COMMUNICATION MODULES, MODEM, LIGHTNING PROTECTION AND CABLES FOR AUTO DIAL/ANSWER TELEPHONE CONNECTION SHALL BE PROVIDED.

9. IF THE CONTROLLER IS PART OF AN INTERCONNECTED SIGNAL SYSTEM, THE CONTROLLER SHALL INCLUDE MODEMS, PORTS AND CABLES FOR SYSTEM COMMUNICATION.

2 SETS OF CONTROLLER SCHEMATICS AND SERVICE MANUALS SHALL BE SUPPLIED WITH EACH CONTROLLER.

CONFLICT MONITORS, TYPE 2010:

CONFLICT MONITORS SHALL BE ON THE ODOT PRE-APPROVED LIST (S.S. 962). TWO SETS OF OPERATIONS INSTRUCTIONS AND MONITOR SCHEMATICS SHALL BE SUPPLIED WITH EACH MONITOR. PERMISSIVE CHANNELS SHALL BE PROGRAMMED WITH THE USE OF A DIODE CARD (CALTRANS STANDARD) WHICH SHALL BE INCLUDED WITH THE MONITOR.

CABINET, MODEL 332:

MODEL 332 CABINETS SHALL MEET THE SPECIFICATIONS "TRAFFIC SIGNAL CONTROL EQUIPMENT SPECIFICATIONS", CALIFORNIA DEPARTMENT OF TRANSPORTATION, JANUARY 1989, OR LATEST EDITION. THE MANUFACTURER OF 332 CABINETS SHALL CURRENTLY BE ON THE CALTRANS "QUALIFIED PRODUCTS LIST" (QPL) FOR 332 CABINETS.

THE CALTRANS SPECIFICATION FOR MODEL 332 CABINETS SHALL BE MODIFIED SO THAT THE CABINETS PROVIDED FOR THIS ITEM ARE THE STRETCH TYPE THAT PROVIDES AN ADDITIONAL 10 INCHES (250mm) CABINET HEIGHT.

CABINETS SHALL BE CONSTRUCTED OF ALUMINUM AND SHALL BE SUPPLIED UNPAINTED. ANODIC COATING IS NOT REQUIRED. CABINETS SHALL BE FULLY EQUIPPED WITH CONFLICT MONITOR, FLASHERS, AC ISOLATORS, DC ISOLATORS, AND FLASH TRANSFER RELAYS. THE APPROPRIATE NUMBER OF SWITCH PACKS AND MODEL 222 LOOP DETECTOR SENSOR UNITS SHALL BE SUPPLIED TO OPERATE THE INTERSECTION AS SHOWN IN THE PLANS. ALL COMPONENTS SHALL MEET CALTRANS SPECIFICATIONS AND SHALL BE ON THE QPL AS APPLICABLE.

FOR POLE MOUNTED CABINETS, MOUNTING BRACKETS AND BOTTOM PLATES SHALL BE SUPPLIED AND INSTALLED. UNLESS OTHERWISE SHOWN IN THE PLANS, THE MOUNTING BRACKET AND DOOR HINGE SHALL BE ON THE SAME SIDE. FOR BASE MOUNTED CABINETS, GALVANIZED ANCHOR BOLTS WITH NUTS AN WASHERS SHALL BE SUPPLIED. ANCHOR BOLTS SHALL BE 3/4" (19mm) DIAM. BY 16" (406mm) MINIMUM LENGTH WITH AN "L" BEND ON THE UNTHREADED END.

CABINETS SHALL BE FITTED WITH A PDA-2 POWER DISTRIBUTION ASSEMBLY. CABINETS SHALL BE EQUIPPED WITH AN EDCO SHA12-10 OR APPROVED EQUAL SURGE PROTECTOR IN LIEU OF THE CALTRANS SPECIFIED SURGE PROTECTION. THE SHA12-10 UNIT SHALL BE INSTALLED IN AN ENCLOSURE WITHIN THE CABINET.

THE FRONT OF THE INPUT AND OUTPUT FILES SHALL BE LABELED USING A WRITABLE TAPE. IN THE CASE OF THE OUTPUT FILE, THE TAPE SHALL CLEARLY DESIGNATE THE PURPOSE OF THE CORRESPONDING SWITCH PACK. AN EXAMPLE OF SWITCH PACK LABELING IS "PHASE 2" OR "PHASE 2 PED". IN THE CASE OF THE INPUT FILE, THE TAPE SHALL CLEARLY DESIGNATE THE PURPOSE OF THE CORRESPONDING DETECTOR UNIT. EVERY USED CHANNEL OF THE 222 DETECTOR SHALL BE LABELED. AN EXAMPLE OF DETECTOR UNIT LABELING IS "PHASE 2 C" OR "PHASE 2 EC" OR "PHASE 2 EXT" WHERE:

C – IS A CALL INPUT ONLY DURING RED
EC – IS EXTEND AND CALL DURING RED, YELLOW AND GREEN
EXT – IS AN EXTENSION ONLY DURING GREEN

CABINET WIRING SHALL COMPLY WITH THE FOLLOWING:

1. OUTPUT FILES SHALL BE "HARDWIRED". NO PRINTED CIRCUIT WIRING SHALL BE USED IN THE OUTPUT FILE EXCEPT FOR THE RED MONITOR BOARD.

2. CABINETS SHALL HAVE RED MONITOR CABLING INSTALLED. A PROGRAM BOARD SHALL BE INSTALLED TO ENABLE/DISABLE RED MONITORING. CABINETS SHALL BE SHIPPED WITH THE RED MONITOR JUMPERS SET IN THE 'ENABLE' POSITION.

3. PEDESTRIAN YELLOW LOADSWITCH OUTPUTS SHALL NOT BE CONNECTED TO THE CONFLICT MONITOR CARD-EDGE CONNECTOR.

4. FIELD WIRING FOR LOOP DETECTOR LEAD-IN CABLES AND PEDESTRIAN DETECTORS SHALL BE TERMINATED ON A LOWER LOOP INPUT PANEL. EDCO MODEL SRA-6LCA, SRA-6LCB OR SRA-6LC SURRESTORS SHALL BE PROVIDED ON THE LOWER INPUT PANEL FOR PROTECTION AGAINST INCOMING ELECTRICAL SURGES AND LIGHTNING. FIELD WIRING TERMINALS ON THE LOWER INPUT PANEL SHALL BE LABELED BY A PERMANENT SCREENING PROCESS TO IDENTIFY THE INPUT FILE (I OR J), THE INPUT FILE SLOT NUMBER (1-14) AND THE CHANNEL TERMINAL (D, E, J OR K). AN EXAMPLE IS "I4-K" STANDING FOR INPUT FILE "I"; SLOT 4; CHANNEL TERMINAL "K". ALL TERMINALS ON THESE DETECTOR PANELS SHALL BE EASILY ACCESSIBLE WITHOUT REMOVING EQUIPMENT FROM THE MOUNTING RACK. TAGGING OF WIRES SHALL NOT BE CONSIDERED ACCEPTABLE TO SATISFYING TERMINAL LABELING.

5. FOR CABINETS THAT ARE TO BE INCLUDED IN A HARDWIRE (TWISTED PAIR) INTERCONNECTED SIGNAL SYSTEM, INCOMING INTERCONNECT CABLE SHALL BE TERMINATED ON AN APPROPRIATE TERMINAL BASE THAT IS MOUNTED ON THE SIDE OF THE CABINET. PROTECTION FROM INCOMING ELECTRICAL SURGES/LIGHTNING ON INTERCONNECT PAIRS SHALL BE PROVIDED BY INSTALLATION OF EDCO PC642 SURGE ARRESTORS ON THE TERMINAL BASE. THE PROTECTED OUTPUTS FROM THE TERMINAL BASE SHALL THEN BE ROUTED THROUGH TO THE CONTROLLER.

6. ON THE OUTPUT FILE, PIN NUMBER 11 OF EACH SWITCHPACK SHALL BE WIRED TO AC-, SO THAT THE OUTPUT INDICATORS ON DUAL INDICATOR SWITCHPACKS WILL DISPLAY PROPERLY. SWITCHPACKS SHALL HAVE BOTH INPUT AND OUTPUT INDICATORS FOR EACH SWITCH.

THE FOLLOWING AUXILIARY ITEMS SHALL BE SUPPLIED:

1. CABINETS SHALL HAVE TWO FLUORESCENT LIGHTS (FRONT AND REAR) WITH DOOR SWITCHES.

2. A RACK MOUNTED DETECTOR TEST PANEL SHALL BE FURNISHED WITH SEPARATE TEST SWITCHES FOR ALL POSSIBLE VEHICLE AND PEDESTRIAN PHASES. THE SWITCHES SHALL BE THREE (3) POSITION "ON/OFF/MOMENTARY ON" SWITCHES.

3. EACH CABINET SHALL BE PROVIDED WITH A POLICE PANEL WHICH WILL INCLUDE A PUSHBUTTON WITH CORD AND THREE SWITCHES LABELED AUTO/FLASH, SIGNALS ON/OFF, AND AUTO/MANUAL. THE PUSHBUTTON CORD SHALL NOT BE WIRED THROUGH AN AC ISOLATOR, BUT SHALL BE CONNECTED TO THE CONTROLLER HARNESS WIRING BY A MOLEX PLUG CONNECTION. WHEN PLACED IN THE MANUAL POSITION, MANUAL CONTROL ENABLE SHALL BE APPLIED TO THE CONTROLLER AND "RECALL" SHALL BE APPLIED TO ALL PHASES. ACTIVATION OF THE PUSHBUTTON SHALL "ADVANCE" THE CONTROLLER EXCEPT THAT MANUAL ADVANCEMENT WILL BE PROHIBITED IN THE MINIMUM GREEN, YELLOW AND RED INTERVALS.

4. AN ALUMINUM SHELF WITH INTEGRAL STORAGE COMPARTMENT SHALL BE PROVIDED IN THE RACK BELOW THE CONTROLLER. THE STORAGE COMPARTMENT WILL HAVE TELESCOPING DRAWER GUIDES FOR FULL EXTENSION. THE COMPARTMENT TOP SHALL HAVE A NON-SLIP PLASTIC LAMINATE ATTACHED.

TWO SETS OF CABINET WIRING DIAGRAMS, SERVICE MANUALS, PROGRAMING AND MAINTENANCE INSTRUCTIONS SHALL BE FURNISHED FOR EACH CABINET AND EQUIPMENT ITEM. THE CABINET WIRING DIAGRAMS SHALL BE SUPPLIED IN A CLEAR PLASTIC POUCH FASTENED TO THE INSIDE OF THE CONTROLLER CABINET.

GENERATOR POWER PANEL:

THIS ITEM SHALL ALLOW SIGNAL ELECTRICIANS TO OPERATE THE TRAFFIC SIGNAL DURING POWER OUTAGES, WITHOUT OPENING THE CABINET DOOR OR CONNECTING OR DISCONNECTING PERMANENT POWER CABLES. THE ENCLOSURE SHALL BE INSTALLED ON THE POWER PANEL SIDE OF THE CONTROLLER CABINET. DESIGN AND LAYOUT OF THE CONTROLLER CABINET SHALL DETERMINE EXACT PLACEMENT OF THE ENCLOSURE BUT IT SHOULD BE PLACED NEAR THE TOP OF GROUND MOUNTED CABINETS AND ABOUT 5 FEET FROM THE GROUND ON POLE MOUNTED CABINETS. THE ENCLOSURE SHALL BE SEALED WITH A HIGH QUALITY SILICON CAULK AND ALL HOLES DRILLED INTO THE SIDE OF THE CONTROLLER CABINET SHALL BE CAULKED AND SEALED AFTER THE ELECTRICAL EQUIPMENT IS INSTALLED. ALL ELECTRICAL CONNECTIONS, SOLDERED OR SCREW TYPE TERMINALS, SHALL BE COVERED WITH A CLEAR SILICON CAULK.

THE GENERATOR INLET SHALL BE 30 AMP, LOCKING, FOUR WIRE GROUNDING AND MEET THE NEMA 114-30-P 30A 125/250V SPECIFICATION. THE INLET SHALL BE A HUBBLE CATALOG #2715.

THE LINE VOLTAGE GENERATOR SWITCH SHALL BE 30 AMP, 125/250V AC, TWO (2) POLE, THREE (3) POSITION, (ON, OFF, ON HUBBLE #1388).

THE LINE VOLTAGE INDICATOR LIGHT SHALL BE 125V AC LIGHT EMITTING DIODE WITH A RED LENS.

THE LINE VOLTAGE CIRCUIT BREAKER SHALL BE SINGLE POLE SINGLE THROW AND A MINIMUM OF 30 AMPS. THE AMPERAGE SHALL BE INCREASED TO ACCOMMODATE GREATER LOADS, IF NECESSARY. THE GUAGE OF THE POWER CABLE SHALL BE OF PROPER SIZE PER THE NATIONAL ELECTRICAL CODE (NEC).

CABINET RISER:

AN ALUMINUM RISER SHALL BE PROVIDED WITH EACH BASE MOUNTED CABINET WHICH WILL RAISE THE CABINET APPROXIMATELY 8" (203mm) ABOVE THE CONCRETE FOUNDATION. THE BOTTOM OF THE RISER SHALL BOLT TO THE STANDARD CABINET FOUNDATION ANCHOR BOLTS AND THE TOP OF THE RISER SHALL BOLT TO THE BOTTOM OF THE CABINET. ALL NECESSARY BOLTS, WASHERS AND NUTS SHALL BE SUPPLIED.

PAYMENT:

COST FOR ALL OF THE ABOVE INCLUDING LABOR, MATERIAL, TOOLS AND EQUIPMENT TO PROVIDE AND INSTALL A COMPLETELY OPERATIONAL CABINET AND CONTROLLER SHALL BE INCLUDED IN THE BID ITEM PRICE FOR 633 ITEM CONTROLLER, MISC.: MODEL 2070L, WITH MODEL 332 CABINET AND ACCESSORIES.

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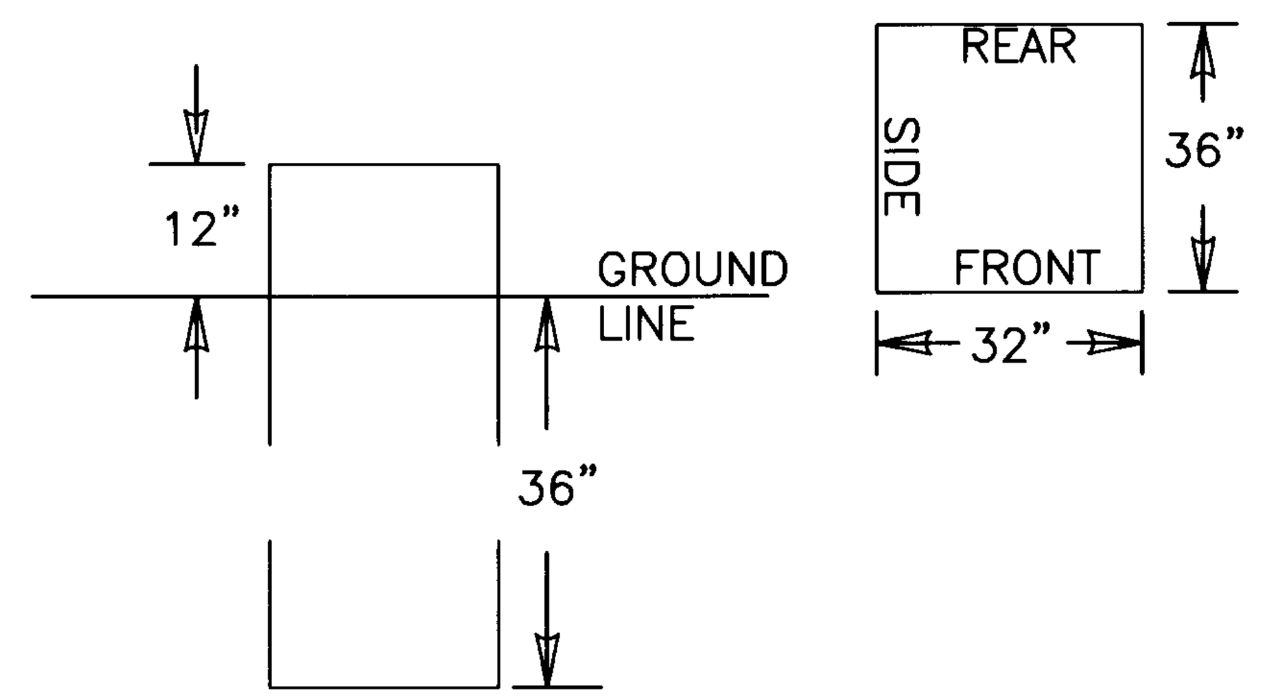
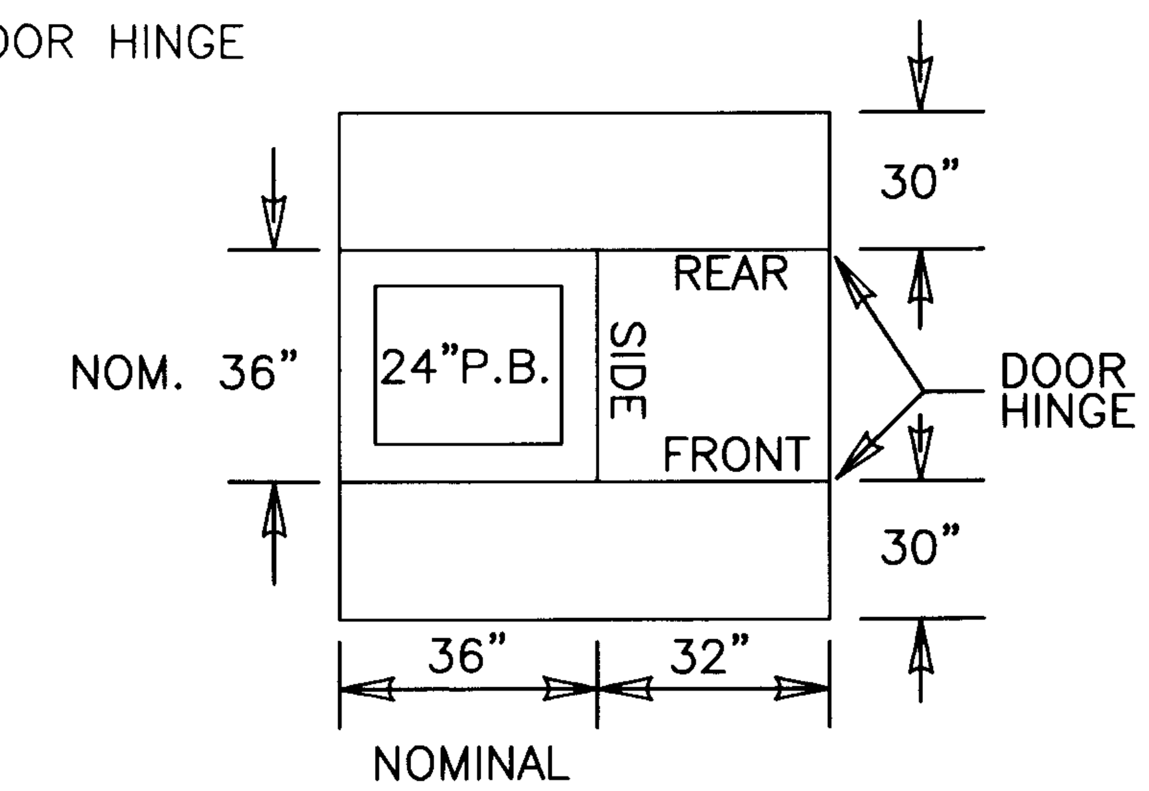
OPTIONAL 332 CABINET FOUNDATION ELEVATION VIEW



SEPARATE BID ITEMS:
625 PULLBOX, 713.08, 24"
633 CONTROLLER WORK PAD
633 CONC. FOR CAB. FOUNDATION

NOTE: PULLBOX SHALL BE PLACED ON OPPOSITE SIDE OF DOOR HINGE



OPTIONAL 332 CONTROLLER WORK PAD PLAN VIEW

FRONT VIEW OF TOP INPUT FILE I

	SLOT 1	SLOT 2	SLOT 3	SLOT 4	SLOT 5	SLOT 6	SLOT 7	SLOT 8	SLOT 9	SLOT 10	SLOT 11	SLOT 12	SLOT 13	SLOT 14
Channel #1	1 EC	2 EC	3 EC	4 EC	5 EC	6 EC	7 EC	8 EC	PED. INHIB	EV-A	EV-B	2 PPB	6 PPB	FLSH
Field Term.	I 1-D,E	I 2-D,E	I 3-D,E	I 4-D,E	I 5-D,E	I 6-D,E	I 7-D,E	I 8-D,E	I 9-D,E	I 10-D,E	I 11-D,E	I 12-D,E	I 13-D,E	I 14-D,E
Channel #2	2 C	2 EC	4 C	4 EC	6 C	6 EC	8 C	8 EC	RR	EV-C	EV-D	4 PPB	8 PPB	STOP TIME
Field Term.	I 1-J,K	I 2-J,K	I 3-J,K	I 4-J,K	I 5-J,K	I 6-J,K	I 7-J,K	I 8-J,K	I 9-J,K	I 10-J,K	I 11-J,K	I 12-J,K	I 13-J,K	I 14-J,K

FRONT VIEW OF BOTTOM INPUT FILE J

C – INPUT ONLY DURING RED
EC – EXTEND AND CALL (RED, YELLOW, GREEN)
EXT – INPUT ONLY DURING GREEN

TERMINATION OF FIELD WIRING SHALL CONFORM TO THE ABOVE CHART. THE CONTRACTOR SHALL DUPLICATE THE INPUT ASSIGNMENT CHART AND INCLUDE IT IN THE CABINET DOCUMENTATION. THE CHART SHALL CLEARLY INDICATE WHICH INPUT FILE SLOTS AND CHANNEL TERMINALS ARE USED IN THE CABINET. A RED PEN SHALL BE USED TO CIRCLE SLOT NUMBERS AND CHANNEL TERMINALS THAT ARE USED.

INPUT FILE TERMINAL ASSIGNMENT

TERM.	PIN	FUNCTION
1	SP	SPARE
2	F	CHANNEL 1 OUTPUT
3	W	CHANNEL 2 OUTPUT
4	D	CHANNEL 1 INPUT
5	E	CHANNEL 1 INPUT
6	J	CHANNEL 2 INPUT
7	K	CHANNEL 2 INPUT
8	L	EQUIPMENT GROUND

SIGNAL GENERAL NOTES (3 OF 3)

CENTRAL AVE. (US20) & PERCENTUM RD./SEQUOIA RD. SIGNAL PLAN SHEETS

31C
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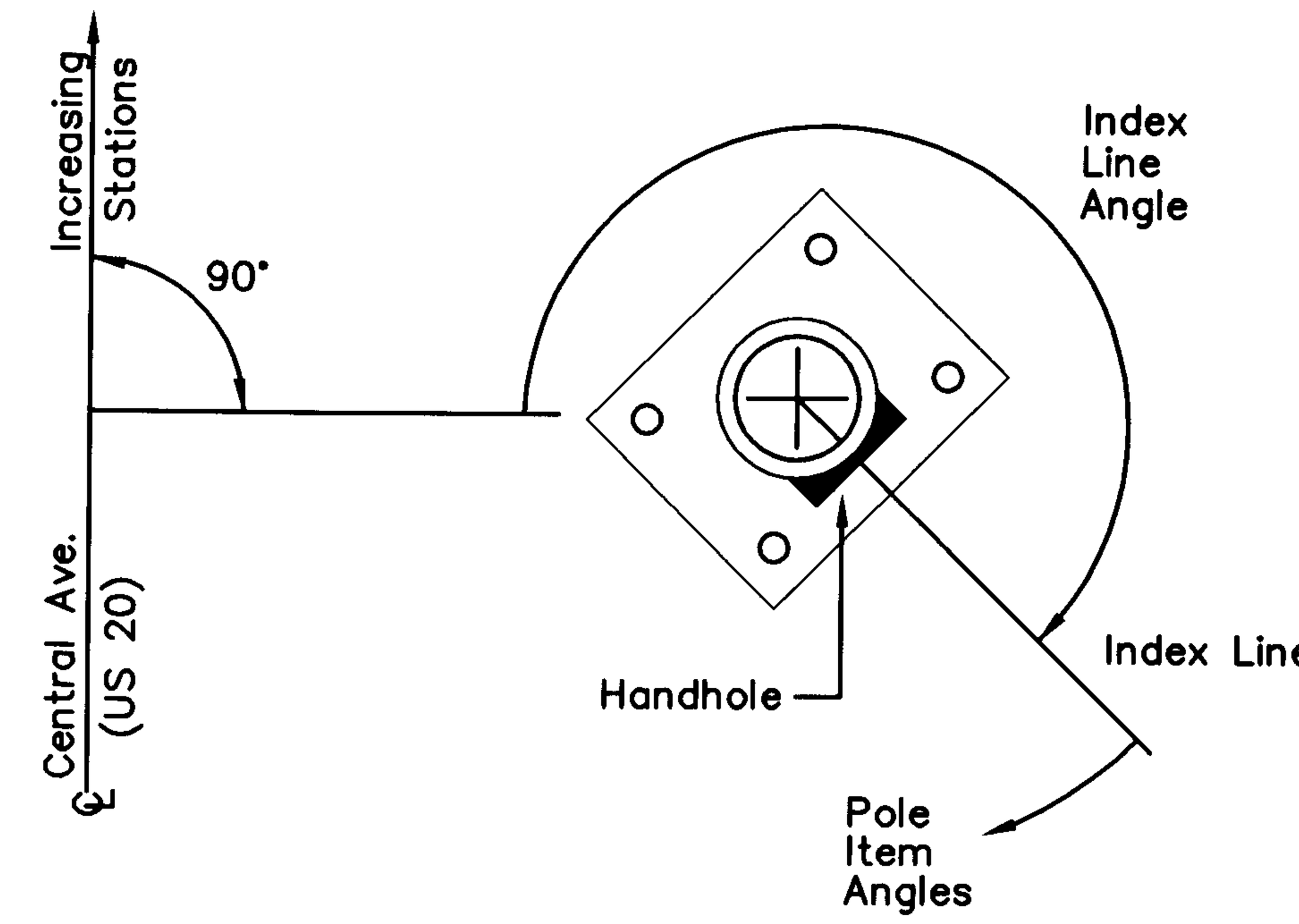
SIGNAL GENERAL SUMMARY

Sheet Number					Item	Item Extension	Grand Total	Unit	Description	See Sheet No.
--	--	--	--	31E						
--	--	--	--	70	625	25500	70	Lin. Ft.	Conduit, 3", 713.04	
--	--	--	--	60	625	29000	60	Lin. Ft.	Trench	
--	--	--	--	5	625	30706	5	Each	Pullbox, 713.08, 24"	
--	--	--	--	5	625	32000	5	Each	Ground Rod	
--	--	--	--	7	632	00300	7	Each	Vehicular Signal Head, 3 Section, 12" Lens, 1-Way	
--	--	--	--	4	632	00500	4	Each	Vehicular Signal Head, 5 Section, 12" Lens, 1-Way	
--	--	--	--	6	632	20100	6	Each	Pedestrian Signal Head, Type A2	
--	--	--	--	11	632	25000	11	Each	Covering of Vehicular Signal Head	
--	--	--	--	6	632	25010	6	Each	Covering of Pedestrian Signal Head	
--	--	--	--	6	632	26000	6	Each	Pedestrian Pushbutton	
--	--	--	--	8	632	26500	8	Each	Detector Loop	
--	--	--	--	5	632	27009	5	Each	Loop Detector Unit, Delay and Extension Type, As Per Plan	31A
--	--	--	--	458	632	30300	458	Lin. Ft.	Messenger Wire, 7 Strand, 7/16" Diameter With Accessories	
--	--	--	--	160	632	40200	160	Lin. Ft.	Signal Cable, 2 Conductor, No. 14 AWG	
--	--	--	--	234	632	40500	234	Lin. Ft.	Signal Cable, 5 Conductor, No. 14 AWG	
--	--	--	--	595	632	40700	595	Lin. Ft.	Signal Cable, 7 Conductor, No. 14 AWG	
--	--	--	--	875	632	41200	875	Lin. Ft.	Signal Cable, 12 Conductor, No. 14 AWG	
--	--	--	--	4	632	64000	4	Each	Strain Pole Foundation	
--	--	--	--	661	632	65200	661	Lin. Ft.	Loop Detector Lead-in Cable	
--	--	--	--	202	632	68200	202	Lin. Ft.	Power Cable, 2 Conductor, No. 6 AWG	
--	--	--	--	1	632	70000	1	Each	Power Service	
--	--	--	--	2	632	84700	2	Each	Combination Strain Pole, Type TC-81.10, Design 7	
--	--	--	--	2	632	85000	2	Each	Combination Strain Pole, Type TC-81.10, Design 10	
--	--	--	--	1	633	40100	1	Each	Controller Misc.: Model 2070L With Model 332 Cabinet And Accessories, As Per Plan	31A-31C
--	--	--	--	1	633	65001	1	Each	Cabinet Without Controller, As Per Plan	31A-31C
--	--	--	--	1.11	633	70000	1.11	Cu. Yd.	Concrete For Cabinet Foundation	
--	--	--	--	27.5	633	70500	27.5	Sq. Ft.	Controller Work Pad	



Notes:
1. All Angles Measured Clockwise.
2. Index Line Goes Through the Center of the Handhole.

POLE DATA SUBSUMMARY

From Sheet No.	Intersection	Central Ave. (US20) Station & Offset	Pole No.	Design No.	Pole Height (Ft.)	Foundation Elevation	Span Wire Attachment Height	Index Line Angle (Degree)	Angle (Degree) From Index Line: Pedestrian Signal	Pedestrian Pushbutton	Vehicular Signal	Power Service	Cable Entrance From Top	Luminaire Bracket	Interconnect Pole Splice Box	Signal Conduit
31E	Central & Percentum	Sta.463+56.2, 54' LEFT	1	7	30'	654.8'	26.62'	135°	220°	120° / 220°	–	–	180°	–	–	90° / 270°
31E	Central & Sequoia	Sta.463+61.7, 73' RIGHT	2	7	30'	654.5'	26.82'	225°	135° / 225°	135° / 225°	–	–	180°	–	–	90° / 270°
31E	Central & Percentum	Sta.464+64.1, 64' LEFT	3	10	30'	654.7'	27.22'	225°	135°	225°	225°	90°	180°	–	–	90° / 270°
31E	Central & Sequoia	Sta.464+57.8, 72.' RIGHT	4	10	30'	654.4'	27.93'	135°	125°	125°	–	–	180°	–	–	90° / 270°

POLE FOUNDATION SCHEDULE
CENTRAL AVE. (US20) & PERCENTUM/SEQUOIA

POLE #	DESIGN #	POLE GA. & SIZE	BOLT	BOLT CIRCLE
1	7	0.299 x 13.0" x 8.80' x 30'0"	2" x 90"	18"
2	7	0.299 x 13.0" x 8.80' x 30'0"	2" x 90"	18"
3	10	0.478 (2 PLY) x 13.0" x 8.80' x 30'0"	2.25" x 90"	22"
4	10	0.478 (2 PLY) x 13.0" x 8.80' x 30'0"	2.25" x 90"	22"

CALCULATED PLE
CHECKED JMH

SIGNAL GENERAL SUMMARY & POLE DATA

CENTRAL AVE. (US20) & PERCENTUM RD./SEQUOIA RD. SIGNAL PLAN SHEETS

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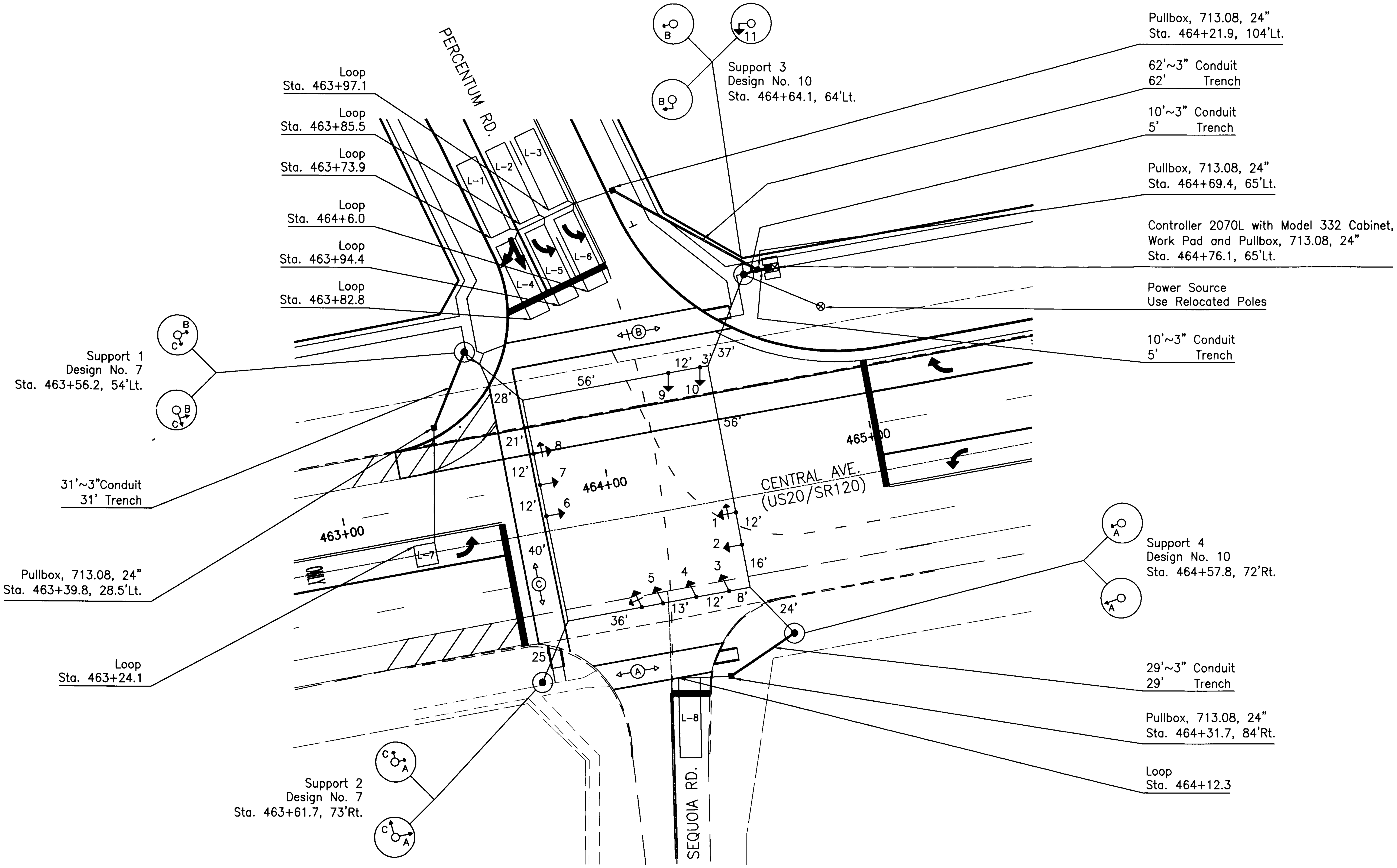
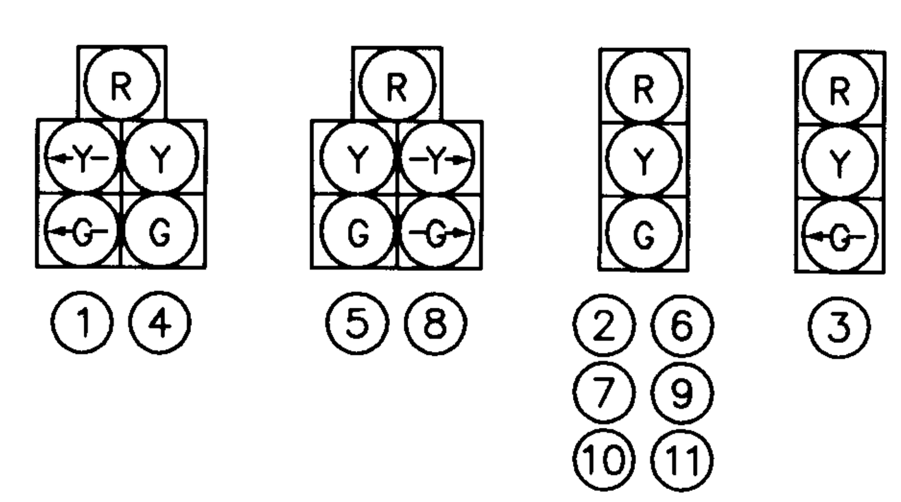
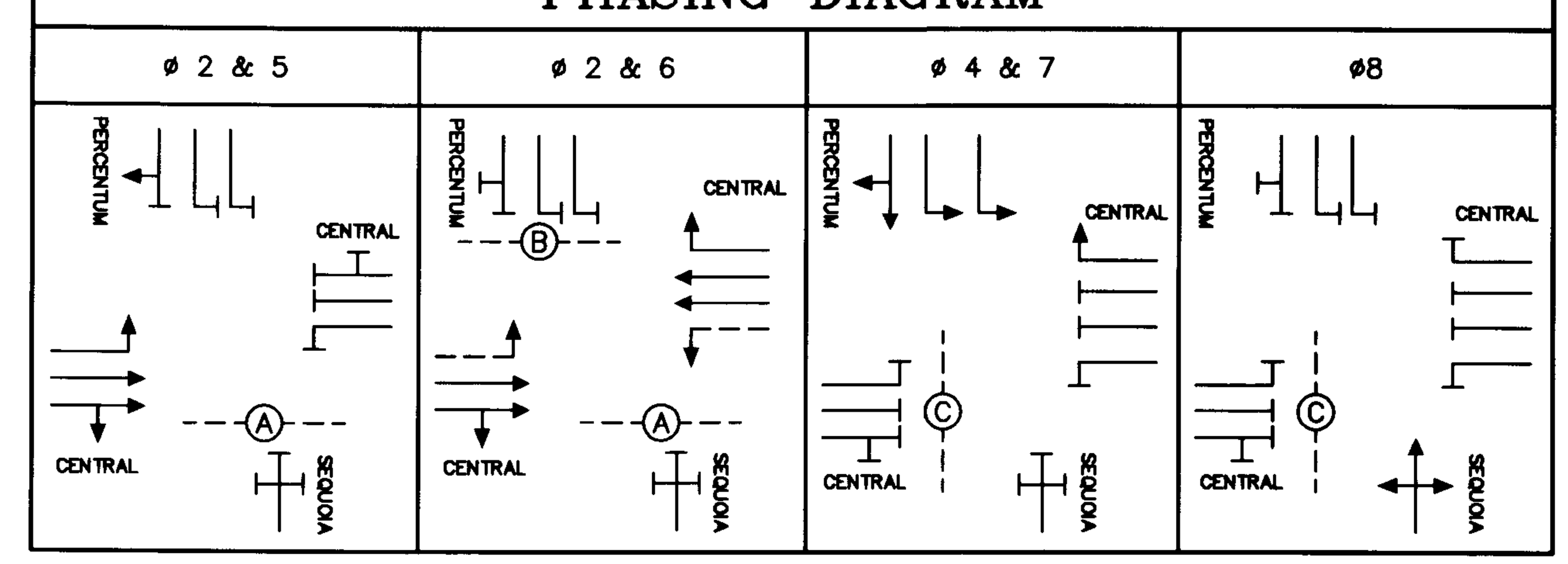


TRAFFIC SIGNAL DETECTORS							
Loop Number	Size (Feet)	Number of Turns	Shape	Pulse or Presence	Delay or Extension (Sec)	Connect to Detector Unit #/Channel	Associated Controller Phase
L-1	8 x 30	2	Rect.	Presence	6	1-1	ø4
L-2	8 x 30	2	Rect.	Presence	--	2-1	ø7
L-3	8 x 30	2	Rect.	Presence	--	3-1	ø7
L-4	8 x 30	2	Rect.	Presence	6	1-2	ø4
L-5	8 x 30	2	Rect.	Presence	--	2-2	ø7
L-6	8 x 30	2	Rect.	Presence	--	3-2	ø7
L-7	8 x 8	2	Rect.	Presence	--	4-1	ø5
L-8	8 x 30	2	Rect.	Presence	6	5-1	ø8

SIGNAL HEAD DISPLAYS (ALL 12" HEADS)



PHASING DIAGRAM



SIGNAL PLAN

CENTRAL AVE. (US20) & PERCENTUM RD./SEQUOIA RD. SIGNAL PLAN SHEETS

HORIZONTAL SCALE IN FEET 0' 20' 40'

CALCULATED PLE

CHECKED JMH

31E
31

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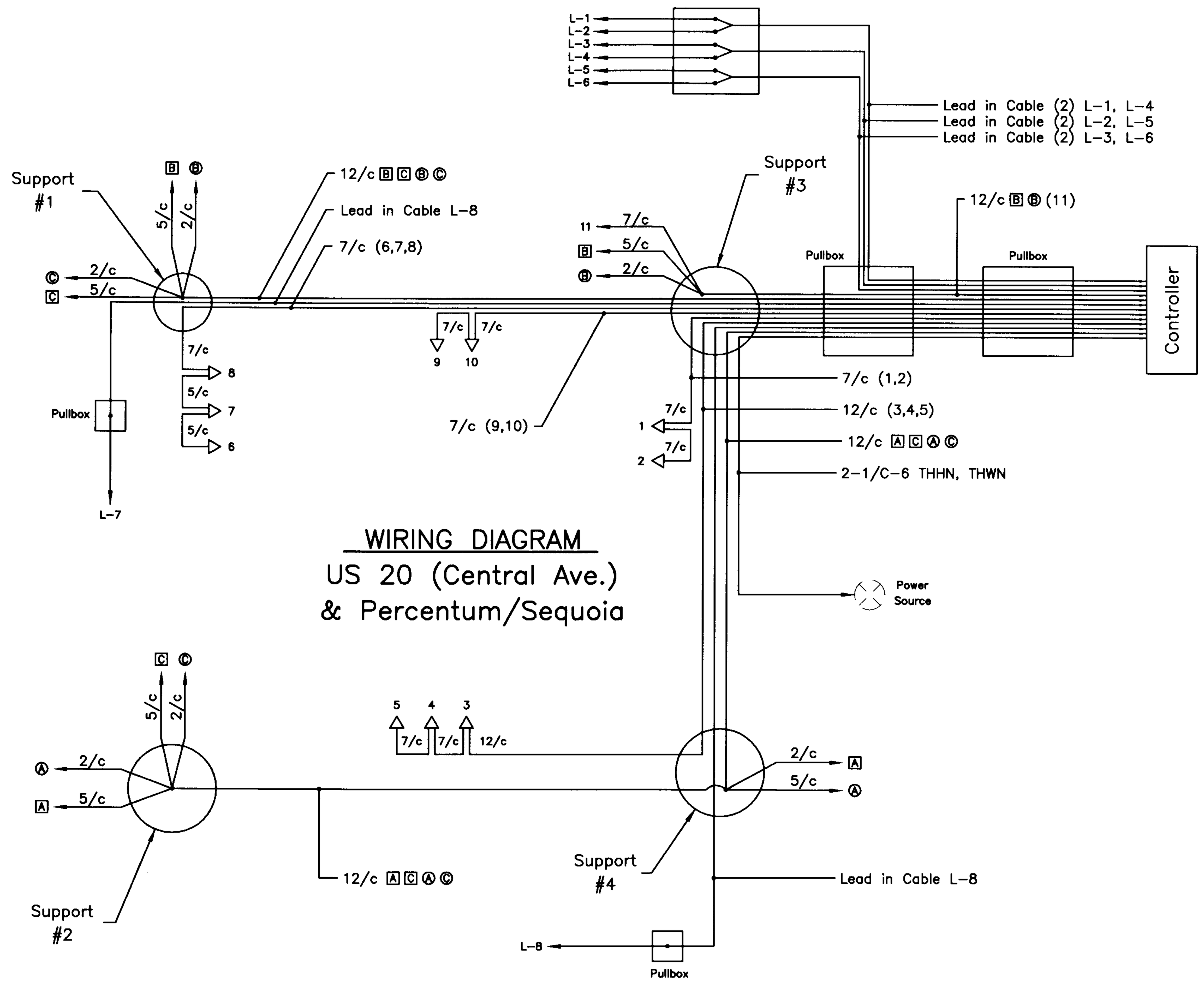


WIRING DIAGRAM
US 20 (Central Ave.)
& Percentum/Sequoia

TIMING CHART

ACTUATED
TRAFFIC SIGNAL CONTROLLER
TIMING CHART

INTERSECTION: CENTRAL AVE. (US20) & PERCENTUM/SEQUOIA
MAINTAINING AGENCY: ODOT DISTRICT 2

START UP
Start In: All Red Time for All Red: 5 Sec.
Time For Flash NONE
First Phase(s) #1
Color Displayed:
Green ● Yellow ○

CYCLE LENGTH = 120 Sec.

Interval or Feature		Controller Movement #							
		1	2	3	4	--	--	--	--
Intersection Movement		øA Lead 2 & 5 EB US20 & Left	øA 2 & 6 EB US20 WB US20	øB Lead 4 & 7 SB PERCENTUM	øB 4 & 8 PERCENTUM & SEQUOIA	--	--	--	--
Minimum Green (Initial)	(Sec)	12	35	12	12	--	--	--	--
Added Initial *	(Sec/Actuation)	2	--	1	1	--	--	--	--
Passage Time (Preset Gap)	(Sec)	3	--	3	3	--	--	--	--
Time Before Reduction *	(Sec)	0	0	0	0	--	--	--	--
Minimum Gap *	(Sec)	0	0	0	0	--	--	--	--
Time To Reduce *	(Sec)	0	0	0	0	--	--	--	--
Maximum Green 1	(Sec)	30	--	30	15	--	--	--	--
Maximum Green 2	(Sec)	30	--	30	15	--	--	--	--
Yellow Change	(Sec)	4	4	4	4	--	--	--	--
All Red Clearance	(Sec)	1	2	1	1	--	--	--	--
Walk	(Sec)	7	7	7	--	--	--	--	--
Pedestrian Clearance	(Sec)	14	23	27	--	--	--	--	--
Recall	Maximum (On/Off)	Off	Off	Off	Off	--	--	--	--
	Minimum (On/Off)	Off	On	Off	Off	--	--	--	--
	Pedestrian (On/Off)	--	Off	Off	Off	--	--	--	--
Memory	(Lock/Nonlock)	--	--	--	--	--	--	--	--
Call To Non-Actuated		Off	On	Off	Off	--	--	--	--

* Volume Density Controls

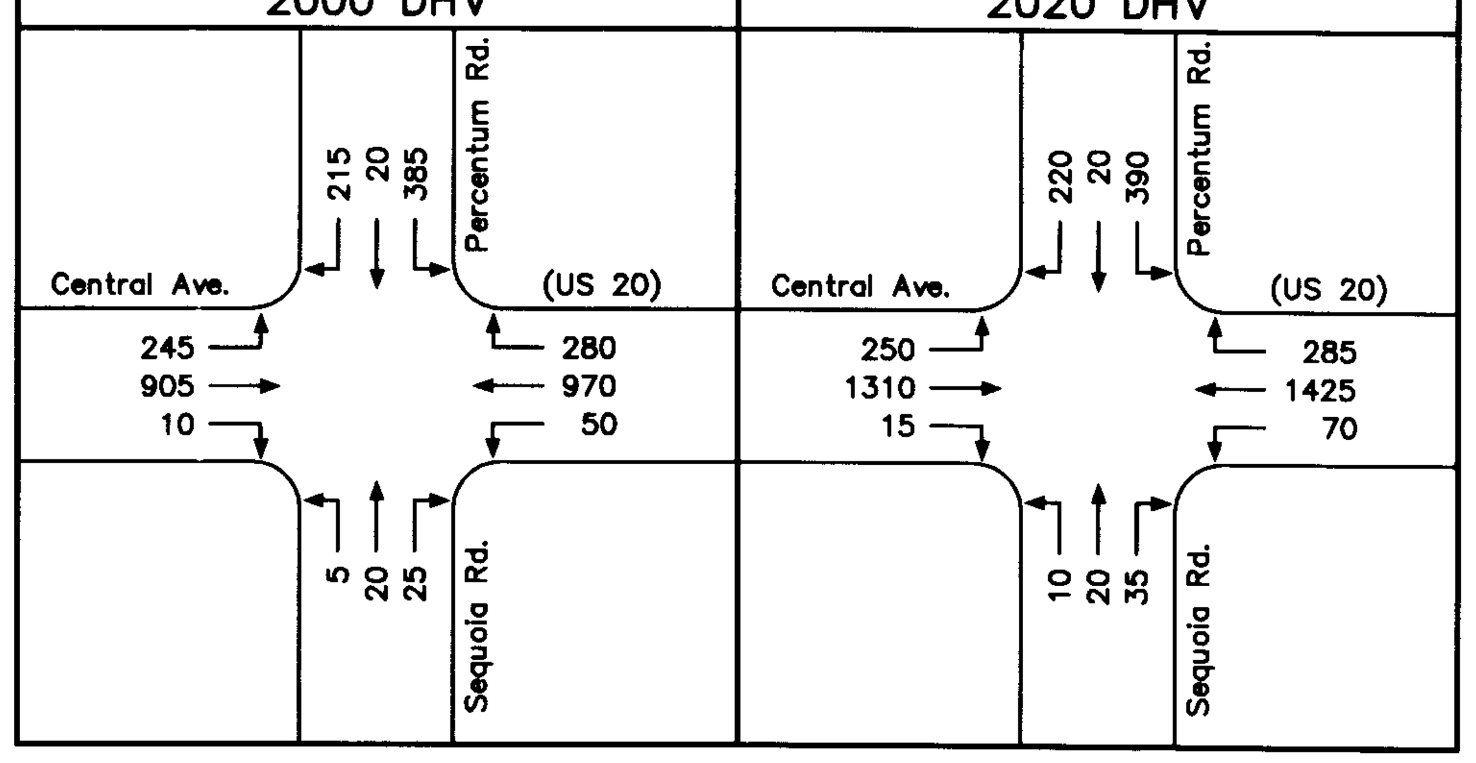
COORDINATION TIMING
(To Be Provided by ODOT)

Item	Timing Program (Cycle Number)						
	1	2	3	4	5	6	7
Description	--	--	--	--	--	--	--
Time Period In Effect	--	--	--	--	--	--	--
Cycle Length (Sec)	--	--	--	--	--	--	--
(1) Offset (Reset) No. 1 (Sec)	--	--	--	--	--	--	--
(1) Offset (Reset) No. 2 (Sec)	--	--	--	--	--	--	--
(1) Offset (Reset) No. 3 (Sec)	--	--	--	--	--	--	--
(2) Force-Off	--	--	--	--	--	--	--
(2) Force-Off	--	--	--	--	--	--	--
(2) Force-Off	--	--	--	--	--	--	--
Length Of Hold-Release Or Yield (Permissive)	--	--	--	--	--	--	--

(1) Offsets are measured from incoming master synch pulse time to hold-release (Yield) at end of major street phase, which is phase(s) numbered _ & _. End of major street phase is end of green/beginning of yellow, except where pedestrian timing is provided, in which case it is end of green plus walk/beginning of green plus flashing dont walk.

(2) Force-Off is measured from the hold-release (yield).

TRAFFIC VOLUMES



COLOR SEQUENCE CHART

Approach	Signal	Intervals 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Flash
Eastbound Central Ave. (US 20/SR 120)	1	G / ←G	G / ←Y	G	G	G	Y	R	R	R	R	R	R	R	R	R	Y
	2	G	G	G	G	G	Y	R	R	R	R	R	R	R	R	R	
Westbound Central Ave. (US 20/SR 120)	6/7	R	R	R	G	G	Y	R	R	R	R	R	R	R	R	R	Y
	8	R	R	R	G	G	Y	R	R / G→	R / G→	R / Y→	R	R	R	R	R	
Southbound Percentum Rd.	3/4	R	R	R	R	R	R	R	G / ←G	G / ←G	Y	R	G	G	Y	R	R
	5	R / G→	R / Y→	R	R	R	R	R	G	G	Y	R	G	G	Y	R	
Northbound Sequoia Rd.	9/11	R	R	R	R	R	R	R	R	R	R	R	G / ←G	G / ←G	Y	R	R
	10	R	R	R	R	R	R	R	R	R	R	R	G	G	Y	R	
Crosswalk Ⓐ	Ⓐ	W*	W*	W*	W*	FL* DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DARK
Crosswalk Ⓑ	Ⓑ	DW	DW	DW	W*	FL* DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DARK
Crosswalk Ⓒ	Ⓒ	DW	DW	DW	DW	DW	DW	DW	W*	FL* DW	DW	DW	DW	W*	DW	DW	DARK
Phasing		øA Lead		øA			øB				øC						

* Volume Density Controls

N

CALCULATED PLE
CHECKED JMH

SIGNAL DETAILS

CENTRAL AVE. (US20) & PERCENTUM RD./SEQUOIA RD. SIGNAL PLAN SHEETS

31F
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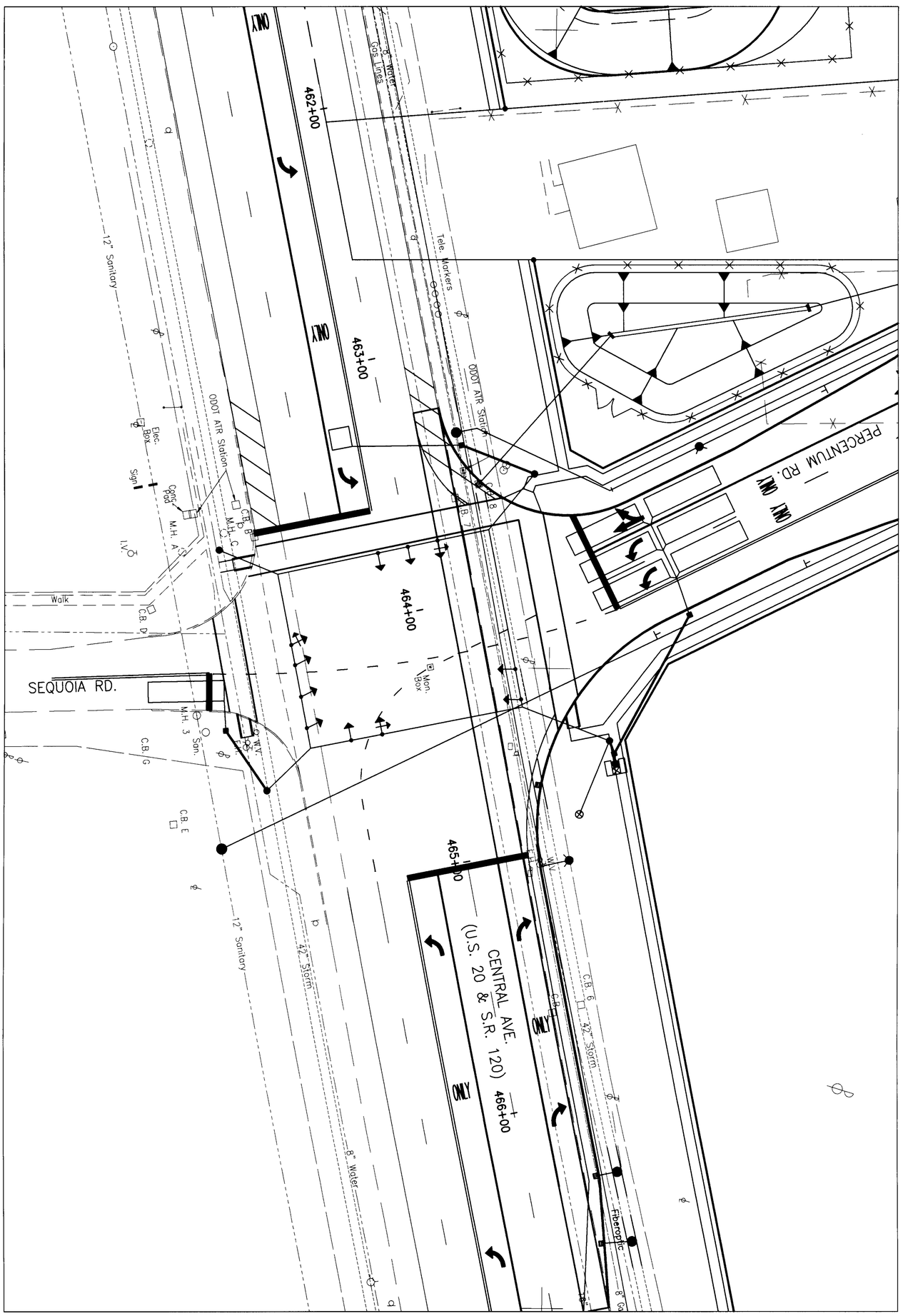
S:\PROJECTS\MSR\B157A1D\ROADWAY\B157A1H.T.PN02
CAD Dwg. Scale: (Eng.) 1=1
Last CAD Revision: 07/11/01
Last Revision By: ple
Description: ODOT REVS



31G / 31	**CENTRAL AVE. (US20) & PERCENTUM RD./SEQUOIA RD. SIGNAL PLAN SHEETS**	**SIGNAL UTILITIES INFORMATION**	CALCULATED PLE / CHECKED JMH	0' 20' 40' HORIZONTAL SCALE IN FEET

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