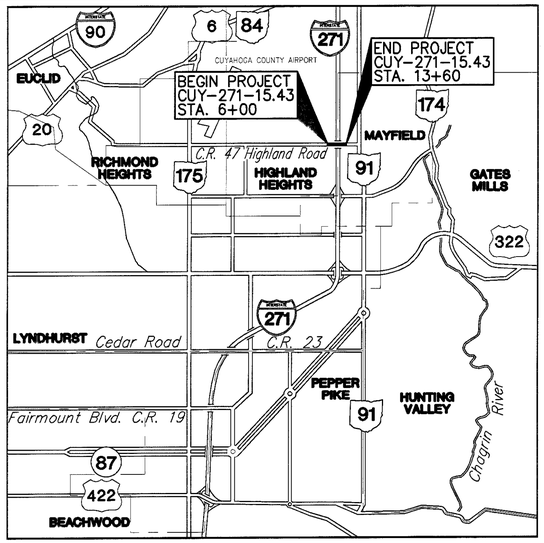


LOCATION MAP

LATITUDE: 41° 33' 05"N. LONGITUDE: 81° 26' 40"W.

SCALE IN MILES
0 1 2 3 4 5 6

N

PORTION TO BE IMPROVED
INTERSTATE,U.S & STATE ROUTES 271 322 91
OTHER ROADS 87

DESIGN DESIGNATION

CURRENT ADT (2000)	7,551
DESIGN YEAR ADT (2020)	9,777
DESIGN HOURLY VOLUME (2020)	978
DIRECTIONAL DISTRIBUTION	55%
TRUCKS (24 HOUR B&C)	3%
DESIGN SPEED	40 M.P.H.
LEGAL SPEED	35 M.P.H.
FUNCTIONAL CLASSIFICATION	URBAN ARTERIAL

DESIGN EXCEPTIONS
NONE REQUIRED

STATE OF OHIO
RONALD A. BENDER
31771
REGISTERED
PROFESSIONAL ENGINEER

Ronald A. Bender

UNDERGROUND UTILITIES
TWO WORKING DAYS
BEFORE YOU DIG
CALL...800-362-2764 (Toll Free)
OHIO UTILITIES
PROTECTION SERVICE
NON-MEMBERS
MUST BE CALLED DIRECTLY

PLAN PREPARED BY:
EUTHENICS INC.
CONSULTING ENGINEERS
975 Keynote Circle, Cleveland, Ohio

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
CUY-271-15.43
HIGHLAND ROAD (C.R. 47)
CITY OF HIGHLAND HEIGHTS
VILLAGE OF MAYFIELD
CUYAHOGA COUNTY

INDEX OF SHEETS

PROJECT DESCRIPTION

REPLACEMENT OF ONE BRIDGE DECK ON HIGHLAND ROAD OVER I-271 INCLUDING RAISING DECK, ADDING TO EXISTING PIER CAPS AND ROADWAY APPROACH WORK.

LIMITED ACCESS

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

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 TO TRAFFIC OF THE HIGHWAY AND THAT DETOURS WILL BE PROVIDED AS INDICATED ON SHEET 9.

APPROVED _____
DATE 12/DEC/2000 DISTRICT DEPUTY DIRECTOR

APPROVED Gordon Proctor
DATE 1-8-01 DIRECTOR, DEPARTMENT OF TRANSPORTATION

CONVERSION OF METRIC STANDARD DRAWINGS
THE METRIC STANDARD DRAWINGS REFERENCED IN THIS PLAN SHALL BE CONVERTED TO ENGLISH UNITS USING THE SI (METRIC) TO ENGLISH 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.

STANDARD CONSTRUCTION DRAWINGS

BP-3.1	7-28-00	RM-4.2M	10-21-97	DM-4.4	4-29-99	MT-101.60M	4-25-94	
BP-4.1	7-28-00					MT-102.10M	1-30-95	
BP-5.1	7-28-00	CB-1.1M	7-12-95	TC-18.24M	2-1-94	MT-102.20M	1-30-95	
				TC-31.21M	3-31-94	MT-105.10M	4-25-94	
F-3.1	7-28-00	HW-2.2M	7-12-95	TC-32.11M	3-31-94	MT-105.11M	9-25-94	
				TC-41.20M	7-1-94			
GR-1.1M	10-21-97	MH-1.1M	10-21-97	TC-42.20M	3-31-94	AS-1-81	9-15-94	
GR-1.2M	1-3-96	MH-1.2M	9-6-95	TC-52.10M	7-29-94			
GR-2.1M	4-14-98			TC-52.20M	7-29-94	VPF-1-90	3-20-95	
GR-3.1M	10-21-97	DM-1.1M	10-21-97					
GR-4.2M	10-21-97	DM-3.1M	6-30-95	MT-95.30M	4-25-94			
		DM-4.3	4-29-99	MT-95.40M	4-25-94			

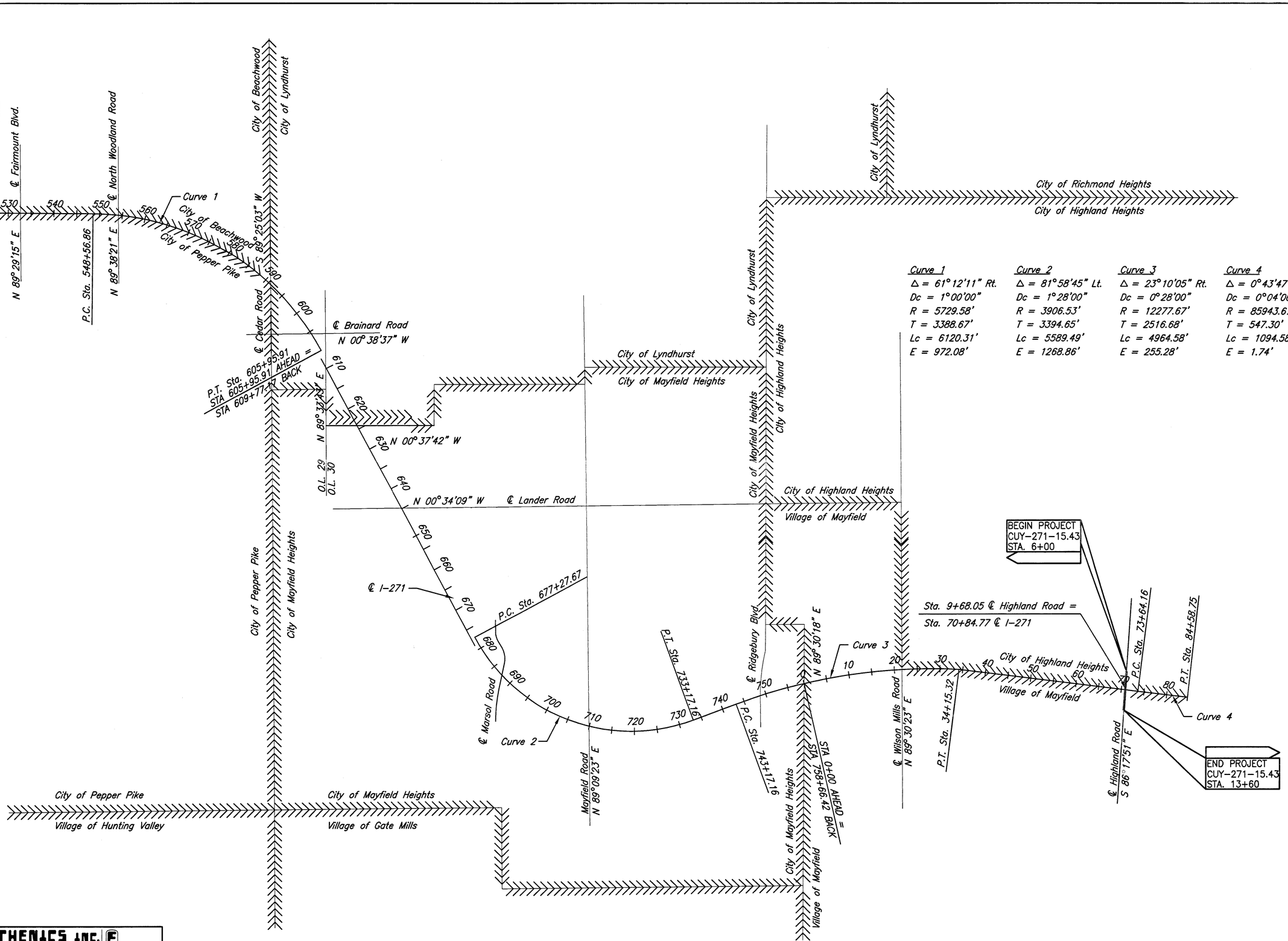
SUPPLEMENTAL SPECIFICATIONS

806	9-9-97	906	5-5-98
814	6-2-98	907	10-21-98
815	5-30-96	908	3-28-00
830	10-21-98	911	7-10-97
842	1-6-99		
843	5-5-98		
844	1-6-99		
846	9-9-97		
863	10-12-00		
877	4-13-99		
899	10-21-98		
905	4-1-98		

FEDERAL PROJECT NO.
PID NO. 20738
CONSTRUCTION PROJECT NO.
RAILROAD INVOLVEMENT NONE
CUY-271-15.43
1 / 57

CUY - IR 271-15.43 (Highland Road C.
010157 PID - 20738
Dist 12 4/11/01

\\OBOS\326ROADWAY\MSC\326_TITH.DWG PLOT @ 1:1 IMP.
P.W. 12/15/00



Curve 1	Curve 2	Curve 3	Curve 4
Δ = 61°12'11" Rt.	Δ = 81°58'45" Lt.	Δ = 23°10'05" Rt.	Δ = 0°43'47" Lt.
Dc = 1°00'00"	Dc = 1°28'00"	Dc = 0°28'00"	Dc = 0°04'00"
R = 5729.58'	R = 3906.53'	R = 12277.67'	R = 85943.67'
T = 3388.67'	T = 3394.65'	T = 2516.68'	T = 547.30'
Lc = 6120.31'	Lc = 5589.49'	Lc = 4964.58'	Lc = 1094.58'
E = 972.08'	E = 1268.86'	E = 255.28'	E = 1.74'

N

1000 0 500
SCALE IN FEET

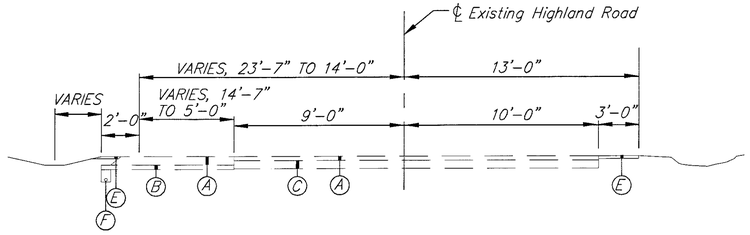
CALCULATED RSY
CHECKED EPS

SCHEMATIC PLAN

CUY-271-15.43

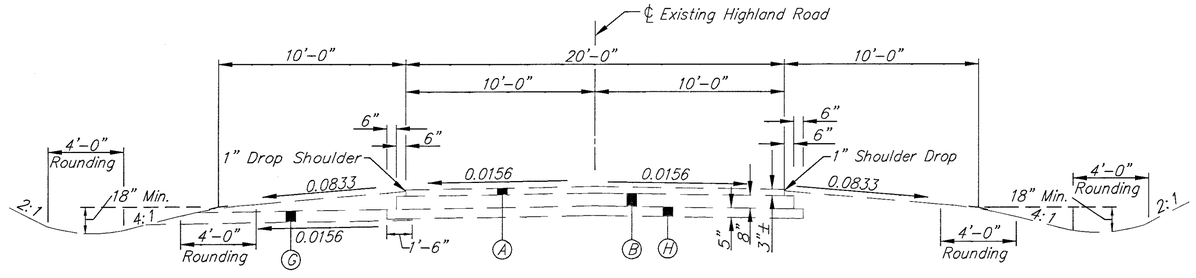
[328SCMH1.DWG] RDJ 12/15/00 PLOT ● 1:1000 IMP.

EUTHENICS INC.
CONSULTING ENGINEERS



EXISTING HIGHLAND ROAD

Sta. 4+80.64 to Sta. 7+49.46



EXISTING HIGHLAND ROAD

Sta. 11+61.64 to Sta. 14+80

LEGEND

- Ⓐ ASPHALT CONCRETE
- Ⓑ AGGREGATE BASE
- Ⓒ CONCRETE BASE
- Ⓔ STABALIZED CRUSHED AGGREGATE
- Ⓕ EXISTING UNDERDRAIN
- Ⓖ AGGREGATE DRAIN
- Ⓗ SUBBASE

TYPICAL SECTIONS - HIGHLAND ROAD (EXISTING)

CUY-271-15.43

3
57

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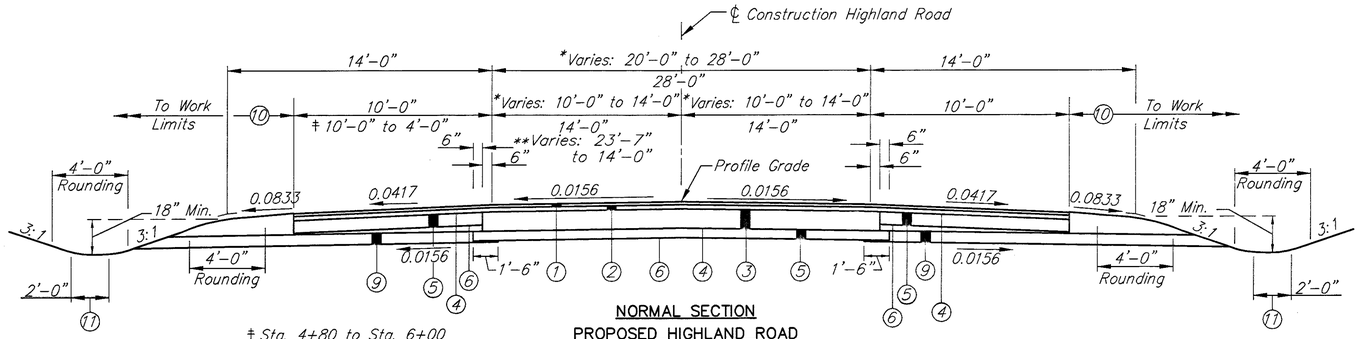
CLEVELAND, OHIO

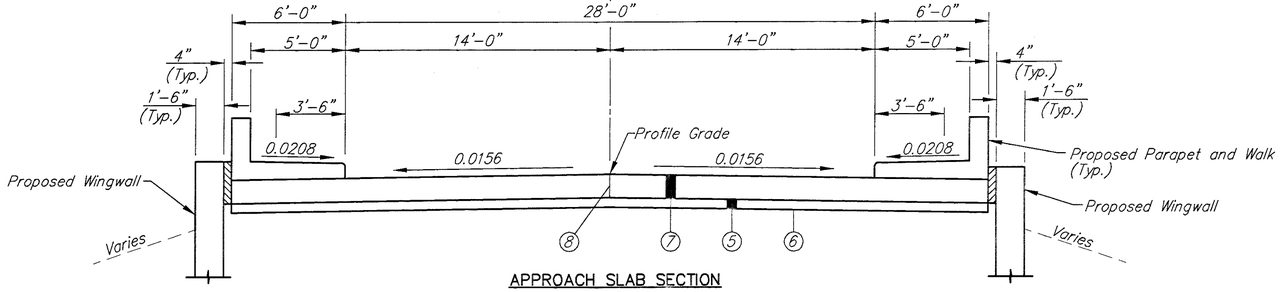
[\JOBS\326\ROADWAY\TS\326TS05.DWG] RDJ 11/16/99 PLOT ● 1:1



‡ Sta. 4+80 to Sta. 6+00
(Lt. Side Only)

NORMAL SECTION
PROPOSED HIGHLAND ROAD

*Sta. 4+80 to Sta. 6+00 (Rt. Side)	=	120.00 Lin.Ft.
Sta. 6+00 to Sta. 7+49.46 (Rt. Side)	=	149.46 Lin.Ft.
**Sta. 4+80 to Sta. 7+49.46 (Lt. Side)		
Sta. 11+86.64 to Sta. 13+60	=	173.36 Lin.Ft.
*Sta. 13+60 to Sta. 14+80	=	120.00 Lin.Ft.
Total	=	562.82 Lin.Ft.



APPROACH SLAB SECTION
PROPOSED HIGHLAND ROAD

Sta. 7+49.46 to Sta. 7+74.46	=	25.00 Lin.Ft.
Sta. 11+61.64 to Sta. 11+86.64	=	25.00 Lin.Ft.
Total	=	50.00 Lin.Ft.

LEGEND

(1)	Item 448	1 1/4" Asphalt Concrete Surface Course, Type 1, PG64-22, As Per Plan
(2)	Item 448	1 3/4" Asphalt Concrete Intermediate Course, Type 2, PG64-22, As Per Plan
(3)	Item 301	8" Bituminous Aggregate Base, PG64-22, As Per Plan
(4)	Item 408	Bituminous Prime Coat (Applied at the Rate of 0.4 gal./Sq.Yd.)
(5)	Item 304	6" Aggregate Base, As Per Plan
(6)	Item 203	Subgrade Compaction
(7)	Item 611	Reinforced Concrete Approach Slab (T=15"), As Per Plan
(8)		Standard Longitudinal Joint
(9)	Item 605	Aggregate Drain at 50' Intervals
(10)	Item 660	Sodding Unstaked, As Per Plan
(11)	Item 660	Sodding Staked, As Per Plan

TYPICAL SECTIONS - HIGHLAND ROAD

CUY-271-15.43

[_008S\326\ROADWAY\TS\326TS02.DWG] PJK 12/15/00 PLOT ● 1:1

EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND, OHIO

GENERAL NOTES

GENERAL

CONSTRUCTION INITIATION

The Contractor will advise the District Communications Officer at (216) 581–2100, ten days prior to the start of construction activities. The Project Engineer will provide assistance or clarification for any questions.

SCOPE OF WORK

The project consists of the replacement of bridge deck on Highland Road over I–271. The project also involves roadway approach work which consists of new pavement, minor drainage work, signing and striping and maintenance of traffic. Traffic will be detoured and road will be closed to through traffic.

ROUNDING

The rounding at slope breakpoints shown on the typical sections apply to all cross sections even though otherwise shown.

EXISTING TYPICAL SECTIONS

Existing typical sections have been developed from site measurements and record plans and are believed to represent the width and composition of the existing pavement, but the State of Ohio does not guarantee the accuracy of same.

UTILITIES

Listed below are all utilities located within the project construction limits together with their respective owners:

Ameritech
13630 Lorain Ave., Rm. 400
Cleveland, Ohio 44111
(216) 476–6142

City of Highland Heights
5827 Highland Road
Highland Hts., Ohio 44143
(216) 461–2444

Cleveland Water Department
1201 Lakeside Avenue
Cleveland, Ohio 44114
(216) 664–2444–(2342)

Village of Mayfield
610 SOM Center Road
Mayfield Village, Ohio 44143
(216) 442–5506

East Ohio Gas Company
1201 East 55th Street
Cleveland, Ohio 44103
(216) 736–6828

The Illuminating Company
6896 Miller Road
Brecksville, Ohio 44141
(440) 546–8748

Cablevision of Ohio
14300 S. Industrial Ave.
Maple Hts., Ohio 44137
(216) 663–4003

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. The location of the utilities shown in the profile of the Plan–Profile Sheets are estimated.

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.

FLASHING ARROW PANELS AND VARIABLE MESSAGE BOARDS

When flashing arrow panels or variable message sign boards are shown on the plans, solar, electric, or battery powered equipment shall be exclusively utilized when located within 300 feet of any residence. Diesel or gasoline powered generators will not be permitted in these areas, except when used intermittently for the sole purpose of charging internal batteries which provide the primary power for the equipment.

CONSTRUCTION NOISE

Activities and land use adjacent to this project may be affected by construction noise. In order to minimize any adverse construction noise impacts, any power–operated construction–type device shall not be operated between the hours of 9:00 P.M. AND 7:00 A.M. In addition, any such device shall not be operated at any time in such a manner that the noise created substantially exceeds the noise customarily and necessarily attendant to the reasonable and efficient performance of such equipment.

ELEVATION DATUM

Elevations shown in the plans are based on Cleveland Regional Geodetic Survey (C.R.G.S.) Data.

GENERAL

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.

FIELD OFFICE AND COMPUTER EQUIPMENT

For field office and computer equipment requirements, see Supplement Specification SS806.

ROADWAY

ITEM 201 – CLEARING AND GRUBBING

Although there are no trees and/or stumps specifically marked for removal within the limits of this 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.

LOCATION OF GUARDRAIL

The location of guardrail runs, as shown in these plans, is subject to adjustment prior to final acceptance. The Engineer shall be satisfied that all installations will afford maximum protection for traffic.

ITEM 202 – APPROACH SLAB REMOVED

Approach slab removed shall include the removal of any asphalt overlay and any integral curbs together with the concrete approach slab. Payment for removal of asphalt overlay and integral curbs shall not be paid separately but considered incidental to the approach slab removed.

EROSION CONTROL

ITEM 660 – SODDING STAKED, AS PER PLAN
ITEM 660 – SODDING UNSTAKED, AS PER PLAN

The preparation of sodded areas shall include two (2) inches of topsoil furnished and placed beneath the sod in accordance with Item 653, except the ignition test sampling will not be required.

Payment for preparing and placing sodded areas, including the two (2) inch topsoil bed, will be made at the contract unit price bid per square yard for Item 660 – Sodding, Staked/ Unstaked, As Per Plan.

WATER PERMANENT SODDED AREAS

The following estimated quantities are to be used as directed by the Engineer to promote growth for permanent sodded areas per 660.08:

870	Water	5 M Gal.

TEMPORARY SOIL EROSION AND SEDIMENT CONTROL

The following estimated quantities are to be placed by the Contractor with the Engineer's concurrence for Temporary Erosion and Sediment Control Measures.

877	Temporary Seeding and Mulching	500 Sq. Yd.
877	Temporary Slope Drains	100 Lin. Ft.
877	Temporary Sediment Basins & Dams	200 Cu. Yd.
877	Temporary Perimeter, Ditch Check or Inlet Protection Filter Fabric Fence	400 Lin. Ft.
877	Temporary Dikes	100 Cu. Yd.
877	Temporary Ditch Protection	100 Sq. Yd.
601	Rock Channel Protection, Type C With Filter	20 Cu. Yd.
601	Rock Channel Protection, Type C Without Filter	100 Cu. Yd.
870	Mowing	5 M Sq. Ft.
870	Commercial Fertilizer	0.05 Ton
870	Water	1 M. Gal.
660	Sodding Unstaked, As Per Plan (for Repair)	100 Sq. Yd.

EROSION CONTROL

Items 601 and 660 are provided in the plans for erosion control. Rock of a stable nature shall not be removed in order to place any of these items and turf of a stable nature shall not be removed in order to place 660. The Engineer shall check and non–perform quantities or adjust locations and quantities of these items where indicated by field conditions during construction. In addition, these items shall meet the requirements of 108.04.

DRAINAGE

REVIEW OF DRAINAGE FACILITIES

Before any work is started on the project and again before final acceptance by the State, representatives of the State and the Contractor, along with local representatives, shall make an inspection of all existing sewers which are to remain in service and which may be affected by the work. The condition of the existing conduits and their appurtenance shall be determined from field observations. Records of the inspection shall be kept in writing by the State.

DRAINAGE

All new conduits, inlets, catch basins, and manholes constructed as a part of the project shall be free of all foreign matter and in a clean condition before the project will be accepted by the State.

All existing sewers inspected initially by the above mentioned parties shall be maintained and left in a condition reasonably comparable to that determined by the original inspection. Any change in the condition resulting from the Contractor's operations shall be corrected by the Contractor to the satisfaction of the Engineer.

Payment for all operations described above shall be included in the contract price for the pertinent 603 conduit items.

CROSSING 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.

SPRING DRAINS

The following estimated quantities have been carried to the General Summary for use as directed by the Engineer for draining any springs shown in the plan or encountered during construction. The following types of pipes may be used: 707.17; ASTM D3034 SDR 35, SS 931 or SS 944 perforated per 707.15.

Spring drains shall be constructed as shown on Standard Construction Drawing MC–1 and paid for at the contract price for:

605, 6" Unclassified Pipe Underdrain, for Springs	100 Lin. Ft.
605, Aggregate Drain, for Springs	100 Lin. Ft.

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.

TREATED SEPTIC CONNECTIONS

Treated septic flow may be discharged into the highway drainage system provided the owner has acquired an official permit from the City or Village which the resident resides.

In each case where a permit has been issued for making a treated septic connection into a highway drainage conduit, an inspection well shall be provided in accordance with Standard Construction Drawing DM–3.1M.

The following estimated quantities have been included in the General Summary for use as directed by the Engineer in making the above connections:

603,	6" Conduit, Type B	100 Lin. Ft.
603,	6" Conduit, Type C	100 Lin. Ft.
604,	Inspection Well	2 Each

RESIDENTIAL AND COMMERCIAL DRAINAGE CONNECTIONS

Any existing roof drains, footer drains, or yard drains disturbed by the work shall be provided with unobstructed outlets by connecting a conduit 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, 707.41 Non– perforated, 707.42, 707.43, 707.45, 707.46, 707.47, 707.51, 707.52 PS46 MIN.

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	100 Lin. Ft.
603,	6" Conduit, Type C, for Drainage Connection	100 Lin. Ft.
603,	4" Conduit, Type E, for Drainage Connection	100 Lin. Ft.
603,	6" Conduit, Type F, for Drainage Connection	100 Lin. Ft.

[326GN01H.DWG] PJK 12/15/00 PLOT 1:1
EUTHENICS INC. CONSULTING ENGINEERS CLEVELAND, OHIO

DRAINAGE

ITEM 604 – MANHOLE, NO. 3, AS PER PLAN

At locations indicated in the plans, the Contractor shall provide Cuyahoga County Manhole Frame No. 9 and Cover No. 28 in lieu of the frame and cover as shown in the Standard Construction Drawings MH–1.2M.

ITEM 604 – MANHOLE ADJUSTED TO GRADE

Manholes shall be adjusted to grade by the method of adjusting height of supporting walls as necessary and resetting the existing frame in a bed of mortar or concrete. No adjusting ring shall be permitted.

ITEM 604 – CATCH BASIN NO. 2–2B, AS PER PLAN

Catch basins shall be constructed in conformance with Item 604 except that the grates shall be Neenah No. R–4859–C or East Jordan 5110 Type M2 or approved equals.

ITEM SPECIAL – MISCELLANEOUS METAL

Structures, for which adjust to grade or reconstruction work is specified, may have existing castings which are unsuitable for reuse, as determined by the Engineer. To provide for this contingency, an estimated quantity of Item Special – Miscellaneous Metal has been included in the General Summary to be used as directed by the Engineer. It shall be the Contractor's responsibility to provide the castings of the required type, size and strength (heavy duty) for the particular structure in question. All casting materials shall conform to Item 604 specifications and have the prior approval of the Engineer.

Where it is necessary to replace unsuitable storm sewer manhole castings (frames and/or covers), they shall be replaced using Cuyahoga County No. 9 frames and No. 28 covers as detailed on Sheet No. 24.

Where the Engineer determines Catch Basin Grates encountered within the work are non–bicycle/pedestrian safe, they shall be removed and replaced with the appropriate bicycle/pedestrian safe grates as available and recommended by the various casting manufacturers and approved by the Engineer. See Sheet No. 25 for appropriate grate to be used on Cuyahoga County No. 3–C Catch Basins.

The Contractor is cautioned to use extreme care in the removal, storage and resetting of all existing castings. Castings damaged by the negligence of the Contractor, as determined by the Engineer, shall be replaced with the proper new castings at the Contractor's expense.

The Contractor shall not order any of the above castings until directed by the Engineer, and in the event no replacement castings are required, the Item shall be nonperformed.

The following estimated quantity has been carried to the General Summary for use as directed by the Engineer.

Item Special – Miscellaneous Metal 2,000 Pound

PAVEMENT

ITEMS 301 AND 448, AS PER PLAN

The coarse aggregate for any asphalt concrete course shall be crushed carbonate stone or crushed air–cooled slag.

For all intermediate, leveling or bituminous aggregate base courses, up to a maximum of 35 percent reclaimed material may be used; however PG58–28 binder shall be used for mixes containing more than 20 percent reclaimed material.

ITEM 304 – AGGREGATE BASE, AS PER PLAN

Material furnished for this Item shall be limited to crushed carbonate stone, crushed air–cooled blast furnace slag, granulated slag or open hearth slag from approved sources on file at the laboratory.

All materials or blended materials shall meet the gradation requirements of 304.02.

Any granulated slag material used shall meet these gradation requirements in lieu of 703.08.

448 – 3" ASPHALT CONCRETE SURFACE COURSE, UNDER GUARDRAIL, TYPE 1, PG64–22 AS PER PLAN

Paving under guardrail shall consist of placing Item 448 to the depth specified using one of the following methods:

Method A:
1. Set guardrail posts
2. Place Item 448

Method B:
1. Place Item 448
2. Bore asphalt at post locations (may be omitted if steel posts are used)
3. Set guardrail posts
4. Patch around posts. The materials used for patching shall be a bituminous concrete approved by the Engineer. Patched areas shall be compacted using either hand or mechanical methods. Finished surfaces shall be smooth and sloped to drain away from the posts.

CURBING ON APPROACH SLABS

The shape of the curbing on approach slabs shall be transitioned from the standard section on the approaches to the section used on the bridge, within the limits of the approach slab.

ITEM 611–REINFORCED CONCRETE APPROACH SLAB (T=15"), AS PER PLAN

Two separate thicknesses of clear or opaque polyethylene film, 705.06, shall be placed on the prepared subbase and where the approach slab is to be constructed. The polyethylene films shall completely cover the full length and width of the subbase between the sidewall forms for the approach slab. Materials, labor and installation shall be included with approach slabs for payment.

WATER WORK

SCOPE OF WORK

The work contemplated under this contractis to install and remove fire hydrants, lower and extend service connections and adjusting valve boxes to grade at locations indicated in the plans. Any valve boxes, covers, stems, etc. deemed structurally unsuitable to be used by the Engineer shall be replaced.

GENERAL NOTES

Water work shall conform to all water work notes as shown in project specification. In addition it shall be the responsibilty of the contractor to furnish all new materials required for all new or relocated installations, unless otherwise specifically noted water work, and also do all excavating, sheeting, backfilling and provide crane service if needed.

All water work materials required shall be new and unused.

When a water service connection is disturbed or disconnected during trench or sheeting excavation, the contractor will replace the water connections with all new materials from the corporation shut–off to the curb shut–off vavle. Use suitable backfill material and compact sufficiently in those areas where water mains and water service connections are exposed.

All water work required will be at the expense of the project and shall conform to Cleveland Water Department Standards.

A two year warrant on all water service connections in retap, reconnection and supported areas would be the responsibilty of the Contractor or Municpality, should any leaks or repairs be needed.

Contact Mr. Richard Kmetz, Supervisor of the Inspection and Enforcement Unit of this Division at (216) 664–2342 three days prior to the start of the project.

ITEM SPECIAL – MISCELLANEOUS METAL WORK

WORK INCLUDED

(A) The Contractor shall furnish and install all miscellaneous metal work which is required for the proper completion of the work included under this contract and is not specifically included under the other items or these specifications.

(B) In general, the work shall include the replacement of any valve boxes, covers, manhole rings and covers, water service stop boxes, bronze bolts, manhole steps, extension stems and brace structural members and other similar items determined by the Engineer as being unsuitable.

MATERIALS

All castings shall conform to the requirements of Item 604 of the Ohio Department of Transportation Construction and Materials Specifications. All structural steel shall meet the requirements of the ASTM Specifications A 36. All bronze bolts and nuts shall conform to the U. S. Standard Sizes, and shall be clean cut and have well fitted threads. All bronze bolts and nuts shall be tobin or manganese bronze, or of similar approved material.

Aluminum, except as otherwise required, shall be aluminum alloy equivalent to specification 6063; rivets and screws shall be 2017 alloy; aluminum plate and structural shapes shall be 2017 alloy; aluminum plate and structural shapes shall be 6061–t6 and extruded shapes shall be 6063–t5; all as manufactured by The Aluminum Company of America, or equal.

Brass shall be of a commercial grade conforming to the "Standard Specifications for Brass Plate, Sheet, Strip and Rolled Bar", ASTM Designation B36–71, Alloy No. 3.

Copper–silicon alloy or "Everdur" shall conform to the "Standard Specifications for Copper –Silicon Alloy Plant, Sheet, Strip and Rolled Bar for General Purposes", ASTM Designation B97–70, Type B.

WATER WORK

Stainless steel rods and fasteners shall conform to the requirements of "Specifications for Hot Rolled and Cold–Finished Stainless and Heat–Resistant Bars". ASTM Designation a 276–72, Type 304. All wrought iron shall meet the requirements of the "Specifications for Rolled Wrought Iron Shapes and Bars", ASTM Designation a 207–68, or the "Specifications for Wrought Iron Plates", ASTM Designation A42–66.

Dimension tolerances are primary considerations and strength is not a primary or major consideration. Valve boxes and covers shall be ASTM Designation A–48 with no specific requirement as to class. Chemical composition shall not be considered, but the material shall be of good quality and of such character as shall make the metal of the castings strong, tough and of even grain. The metal shall be made without any admixture of cinder iron or other inferior metal.

Workmanship and finish shall conform substantially to the dimensions on the contract drawings or furnished drawings. The castings or moldings shall be free from injurious defects, cracks, gas holes, flaws, and excessive shrinkage. Additional inspection may be made at the project or work site. Inspection shall be visual inspection for appearance and surface smoothness in comparison with samples accepted as standard.
Sample castings or moldings from each pattern, when required by the Engineer, shall be submitted by the Manufacturer for the purpose of establishing standards of appearance and dimensional tolerances. The Manufacturer shall certify that his product conforms to these specifications. Each certification so furnished shall be signed by an authorized agent of the Manufacturer.

CLEANING AND TESTING

All castings shall be thoroughly cleaned and subjected to a careful hammer test. No castings shall be coated unless clean and free from rust, and approved in these respects by the Engineer or his authorized inspector immediately before being dipped.

COATING

Each coating shall be sprayed or brushed inside and out with one coat of asphaltic compound varnish. The varnish shall be made of high grade asphalt fluxed and blended with properly treated drying oils and thinned to a proper consistency with a volatile solvent. The varnish shall be made to comply with Federal Specification 77–V–51A or joint Army–Navy specification JAN–P–450. other methods of coating and types of coating material shall be subject to the approval of the Engineer. In addition to the shop coat, the castings shall receive two (2) coats of approved paint.

INSPECTION

The Engineer or his authorized representative shall have the right to inspect the material and work done, as the interests of the City or State may require. Such inspection shall not relieve the Contractor from any obligation to perform said work strictly in accordance with the specifications, and any modification thereof, as herein provided, and work not so constructed shall be removed and made good by the Contractor at his own expense. all manhole rings and covers must be sound and shall conform to these specifications, and any defective castings which may have passed the Inspector at the works, or elsewhere, shall be at all times liable to rejection when discovered, until the date of final payment under this contract.

STEPS AND LADDERS

Ductile iron steps and ladders of the size and shape shown on the contract drawings shall be built into the brick and concrete masonry of the manholes as indicated on the drawings. rims and covers.

(A) All cast iron manhole rims and covers of the forms, dimensions and detail shown on the contract drawings shall be furnished and installed as directed.

(B) The rims shall be properly set in place in a full bed of mortar of poured monolithic in the masonry, at such elevation as to make the top of the rim conform to the finished surfaces of the structures or the finished grade as established by the Engineer.

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DETAILED DRAWINGS

Complete detailed drawings of miscellaneous metal work shall be submitted to the Engineer for approval, prior to the manufacture of any work to be furnished under this item in accordance with these specifications.

PAINTING

All miscellaneous metal work not galvanized shall be thoroughly cleaned and given three (3) coats of coal tar pitch, using Intertol 50 or Bitumastic 50, or approved equal.

MEASUREMENT

The miscellaneous metal work shall be the metal work actually furnished and placed in accordance with these specifications and the detailed drawings approved by the Director. In the computing of weights, if not determined by weighing, one (1) cubic foot of cast iron shall be assumed to weigh four hundred and fifty (450) pounds, and one (1) cubic foot of steel shall be assumed to weigh four hundred and ninety (490) pounds. The weight of cast iron shall be used for cast iron valve boxes and covers and any cast iron sections of valve boxes and covers.

PAYMENT

The unit price stipulated per pound for miscellaneous metal work shall include the furnishing, erecting, machining, fitting, adjusting, bolting, cleaning and painting of all miscellaneous metal work, and the furnishing of all labor, materials, tools and appliances necessary to complete the work as specified or as shown. The following estimated quantities are included in the general summary for this work:

Item Special– Miscellaneous Metal Work 500 pounds

ITEM SPECIAL–WATER SERVICE CONNECTIONS

GENERAL

New and unused materials shall be used in the following situation involving water service connections.

1. Where a service connection is disturbed for lowering or relocating between the water main at the "corporation shut–off valve" and the curb shut–off valve, it shall be totally replaced with new and unused materials, from the "corporation shut–off valve" to curb shut–off valve.

2. Where a service connection is disturbed for lowering or extending on the "property side" of the curb shutoff valve, the piping materials and fittings shall be totally replaced with new and unused materials from the existing curb shutoff valve to the limit as required when simply lowering and/or raising, or to the new curb shutoff valve when extension or shortening is required.

However, if the existing service connection encountered in the work is found to be lead or galvanized pipe, it is to be totally replaced from "coporation shutoff valve "to the "curb shutoff valve" with copper water pipe. The additional copper piping will be paid for separately under "item special–copper water tubing" with the contractor being responsible to furnish the proper size pipe. A contingency quanitity of 200 linear feet has been provided in the general summary for "item special–copper water tubing."

3. Where a service connection is disturbed for lowering or extending, it shall be extended in a straight prolongation of the existing connection and where the "property side" service connection piping is not immediately contiguous to the extended service connection curb shutoff, all labor, materials and equipment required to reconnnect shall be provided by the contractor. The contractor will also install the material and complete the reconnection to restore service, however, any reconnection on the "property side" of the curb shutoff must be parallel to the street centerline or right –of –way from the curb shutoff. If upon inspection of the "property side" piping, it is found unsuitable for such reconnection, the connection shall not be disturbed until such time as the municipality has arranged for replacement.

4. Where a connection is inadvertently damaged or broken which was not to be disturbed, only the damaged portion needs to be replaced. If the extent of damage cannot be fully assessed, the connection shall be replaced, as noted in item 1 above, at the contractor's expense.

5. Any tapping required for pipe sizes less than 1–1/2" shall be performed by the contractor. The contractor must be qualified to tap mains in accordance with the "prequalifications of contractor for tapping "general note. All tapping for pipe sizes 1–1/2" and larger shall be performed by the city.

WORK INCLUDED

In addition to the work described above, the contractor shall install new and/or reconstruct water service connections.

PIPE MATERIAL FOR SERVICE CONNECTION

The following pipe material shall be used for the service connections on this project:

Copper water tubing, Type K, ASTM B88–74, 5/8" to 3" diameter.

Ductile iron pipe and fittings, ANSI CLASS 52 (new) AND/OR 56 (reconstruct), cement lined, 4" diameter and up.

PAYMENT

The following pay items are listed in the general summary for water service connection work:

ITEM SPECIAL–EXTEND 3/4" WATER SERVICE CONNECTION, COMPLETE (EACH)
ITEM SPECIAL–LOWER 3/4" WATER SERVICE CONNECTION, COMPLETE (EACH)
ITEM SPECIAL–LOWER AND EXTEND 3/4" WATER SERVICE CONNECTION, COMPLETE (EACH)
ITEM SPECIAL–COPPER WATER TUBING (L.F.)

The contract unit price bid for each item special, classified by size, shall include the excavation, backfilling, tapping and furnishing of all labor, tools, new material, equipment and incidentals necessary to complete the work in place as shown. Seeding, sodding and repaving shall also be included if not paid for seperately in the plans. If new curb boxes are required, as determined by the engieer, they shall be furnished and paid for under Item Special – "Miscellaneous Metal Work".

PREQUALIFICATIONS OF CONTRACTOR FOR TAPPING

That the commissioner of water is authorized to deem persons or firms qualified to tap mains for service connection reinstallation after qualifications of tapper, inspection of equipment, and proven ability and workmanship have been established as to tap sizes to his satisfaction. To determine the qualifications of any person or firm to tap mains, the commissioner or his designee shall witness the installation of a service connection in a water main under pressure and inspect tapping equipment to be used by the tapper. Upon successful completion of a tap size, the tapper shall be certified by letter from the commissioner to the director of transportation of tappers competence and qualifications. This qualification may be revoked by the commissioner of water and heat if it is determined that the tappers competency is not maintained or equipment is changed.

No tapping shall be done with out the knowledge and approval of the division of water and heat inspector. For each tap to be made to reinstall a water service connection, the tapper shall obtain and complete a City of Ceveland "City meter repairs hy" Form C of C 101–130A from the inspector. Failure to present form at time of completion of reinstallation shall be cause for immediate disqualification.

On Class 52 Ductile Iron Water Main all service connections will require a bronze double strap tapping saddle.

ITEM SPECIAL – EXTEND AND ADJUST HYDRANT TO GRADE, TYPE B

WORK INCLUDED

The work included under this item shall consist of extending and adjusting existing hydrants to grade from the main to the hydrant to remove an existing leaded joint and at location shown on the plans or as directed be the engineer, including excavating, removing and resetting of hydrant, new 16"x 6" cut in tee w/ sleeve, new valve, valve box and cover, new branch pipe, sheeting and bracing, backfill, labor, materials, equipment, tools and incidentals necessary to make this a complete item of work.

SETTING

(A) GENERAL LOCATION : The hydrant shall be located in a manner to provide complete accessibility, and in such a manner that the possibility of damage from vehicles or injury to pedestrians will be minimized.

(B) POSITION OF NOZZLE : The hydrant shall stand plumb with the nozzles pointing toward the road at an angle of forty–five (45) degrees therefrom. Where the hydrant branch piping is parallel with or not at right angles to the curb, the contractor shall release swivel head bolts and adjust the hydrant nozzles to face the road at the proper angle. A hydrant without swivel heads will be adjusted by the City of Cleveland where necessary to correct the angle of the nozzles. The elevation shall conform to the established grade with tops of frost casing at least four inches above grade.

(C) DRAINAGE AT HYDRANT : Drainage shall be provided at tha base of th hydrant by filling around the elbow with coarse gravel or crushed stone to at least 6 inches above the waste opening. Wherever a hydrant is set in rock, clay or other impervious soil, the trench shall be widened and deepened on each side of the hydrant base and the space shall be filled compactly with coarse gravel or broken stone mixed with coarse sand of sufficient quantity to absorb all water to be drained from the hydrant when the valve is closed.

(D) ANCHORAGE FOR HYDRANT : The hydrant shall be set on a stone slab or similar foundation and the base of the hydrant and the hydrant tee shall be well braced against unexcavated earth at the end of the trench with concrete backing, or it shall be tied to the pipe with suitable rods or clamps as directed by the engineer.

(E) CLEANING : The hydrant shall be thoroughly cleaned of dirt and foreign matter before setting.

PAYMENT

The unit price stipulated for each "Item Special – Extend and Adjust Hydrant to Grade, Type B" shall include all excavation, sheeting, removing and resetting hydrant, extending or replacing branch pipe, installation of 16"x 6" cut in tee w/sleeve adjustment or replacement of valve and valve box, testing, painting, backfilling and furnishing all labor, tools, materials and incidentals necessary to complete the work as stated above.

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GENERAL

DURING THE CONSTRUCTION OF THIS PROJECT THE CONTRACTOR SHALL DIRECT THE TRAFFIC AROUND THE CONSTRUCTION AREA WITH THE DETOUR PLAN SHOWN ON SHEET 9, AND SHALL PROVIDE THE SAFE WORKING CONDITIONS FOR THE PROTECTION OF THE PUBLIC FROM INJURY.

LANES ON I–271 MAY BE CLOSED PER THE TIMES GIVEN IN DISTRICT 12'S "PERMITTED LANE CLOSURE REFERENCE MAP". COPIES MAY BE OBTAINED BY CONTACTING DISTRICT 12'S WORK ZONE TRAFFIC CONTROL ENGINEER.

NOTIFICATION

THE CONTRACTOR SHALL NOTIFY IN WRITING THE FOLLOWING AGENCIES AT LEAST ONE WEEK PRIOR TO THE START OF CONSTRUCTION, AND AT LEAST 72 HOURS BEFORE IMPLEMENTING ANY SUBSTANTIAL CHANGE IN TRAFFIC PATTERN OR CLOSING ANY STREET TO TRAFFIC:
THE CUYAHOGA COUNTY ENGINEER
THE GREATER CLEVELAND REGIONAL TRANSIT AUTHORITY
THE CITY OF HIGHLAND HEIGHTS POLICE, FIRE & SERVICE DEPARTMENT
THE VILLAGE OF MAYFIELD POLICE, FIRE & SERVICE DEPARTMENT
THE MAYFIELD CITY SCHOOL DISTRICT

NOTICE OF CONSTRUCTION SIGNS

NOTICE OF CONSTRUCTION SIGNS OC–60A AS DETAILED IN THESE PLANS, SHALL BE ERECTED BY THE CONTRACTOR AT LEAST ONE WEEK IN ADVANCE OF THE SCHEDULED BEGINNING OF CONSTRUCTION. THE SIGNS SHALL BE ERECTED ON THE RIGHT HAND SIDE OF THE ROAD AT STA. 5+70 AND STA. 13+40 HIGHLAND ROAD FACING TRAFFIC. THEY SHALL BE PLACED SO AS NOT TO INTERFERE WITH THE VISIBILITY OF ANY OTHER TRAFFIC CONTROL SIGNS.

THE CONTRACTOR SHALL INSERT THE SCHEDULED DATE OF THE BEGINNING OF CONSTRUCTION, DURATION (NUMBER OF DAYS FROM THE START DATE TO THE PROJECT COMPLETION DATE) AND INFORMATION PHONE NUMBER ON THE SIGN IN THE PROPER POSITIONS.

CONSTRUCTION TRAFFIC

ALL CONSTRUCTION TRAFFIC SHALL USE ACCEPTABLE TRUCK ROUTES TO ACCESS THE CONSTRUCTION AREA. USE OF LOCAL RESIDENTIAL STREETS IS STRICTLY PROHIBITED UNLESS ALLOWED IN WRITING BY THE LOCAL ENFORCEMENT AUTHORITY.

ITEM SPECIAL – REPLACEMENT SIGN

FLAT SHEET SIGNS FURNISHED BY THE CONTRACTOR IN ACCORDANCE WITH THE REQUIREMENTS OF THE PLANS, SPECIFICATIONS, AND PROPOSAL WHICH BECOME DAMAGED BY TRAFFIC FOR REASONS BEYOND THE CONTROL OF THE CONTRACTOR SHALL BE REPLACED IN KIND WHEN ORDERED BY THE ENGINEER. REPLACEMENT SIGNS SHALL BE NEW. OTHER MATERIALS MAY BE IN USED BUT GOOD CONDITION SUBJECT TO THE APPROVAL OF THE ENGINEER.

WHEN ADDITIONAL SIGNS ARE FOUND BY THE ENGINEER TO BE NECESSARY FOR THE SAFE MAINTENANCE OF TRAFFIC, ABOVE AND BEYOND THE SIGNING SHOWN IN THE PLANS AND/OR ON THE STANDARD CONSTRUCTION DRAWINGS, THE CONTRACTOR SHALL FURNISH, ERECT, MAINTAIN, AND REMOVE THE ADDITIONAL SIGNS UNDER THIS ITEM, AS DIRECTED BY THE ENGINEER.

PAYMENT FOR THE NEW SIGNS SHALL BE MADE AT THE CONTRACT PRICE PER SQUARE FEET FOR ITEM SPECIAL, REPLACEMENT SIGN, AND SHALL INCLUDE THE COST OF REMOVING AND DISPOSING OF DAMAGED SIGNS, HARDWARE AND SUPPORTS, AND PROVIDING THE NECESSARY REPLACEMENT HARDWARE, SUPPORTS, ETC.

AN ESTIMATED QUANTITY OF 50 SQUARE FEET HAS BEEN PROVIDED IN THE GENERAL SUMMARY.

ITEM 622 – PORTABLE CONCRETE BARRIER

THE CONTRACTOR SHALL CLOSE HIGHLAND ROAD BRIDGE TO TRAFFIC WITH PORTABLE CONCRETE BARRIERS.

THE FOLLOWING QUANTITY IS INCLUDED IN THE GENERAL SUMMARY:

ITEM 622 – PORTABLE CONCRETE BARRIER, 32"	20 LIN. FT.

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:

ITEM 616 – WATER	50 M. GAL.
ITEM 616 – CALCIUM CHLORIDE	5 TONS

HIGHLAND ROAD

THE REHABILITATION OF HIGHLAND ROAD BRIDGE SHALL CONSIST OF THE REMOVAL OF EXISTING DECK AND RAISING THE EXISTING STRUCTURAL STEEL TO PROVIDE ADDITIONAL CLEARANCE FOR FUTURE WIDENING OF HIGHLAND ROAD. THE PROPOSED WORK SHALL CONSIST OF CONSTRUCTING A NEW BRIDGE DECK, PARAPETS AND APPROACH ROADWAY WORK.

CLOSING/SHIFTING LANES

THE CONTRACTOR SHALL FOLLOW THE STANDARD CONSTRUCTION DRAWINGS MT–95.30M OR MT–95.40M FOR LANE CLOSURE, AND MT–102.10M OR MT–102.20M FOR LANE CLOSURE ON I–271 UNDER HIGHLAND ROAD WHEN NEEDED AND AS DIRECTED BY THE ENGINEER.

MAINTENANCE OF TRAFFIC GENERAL NOTES

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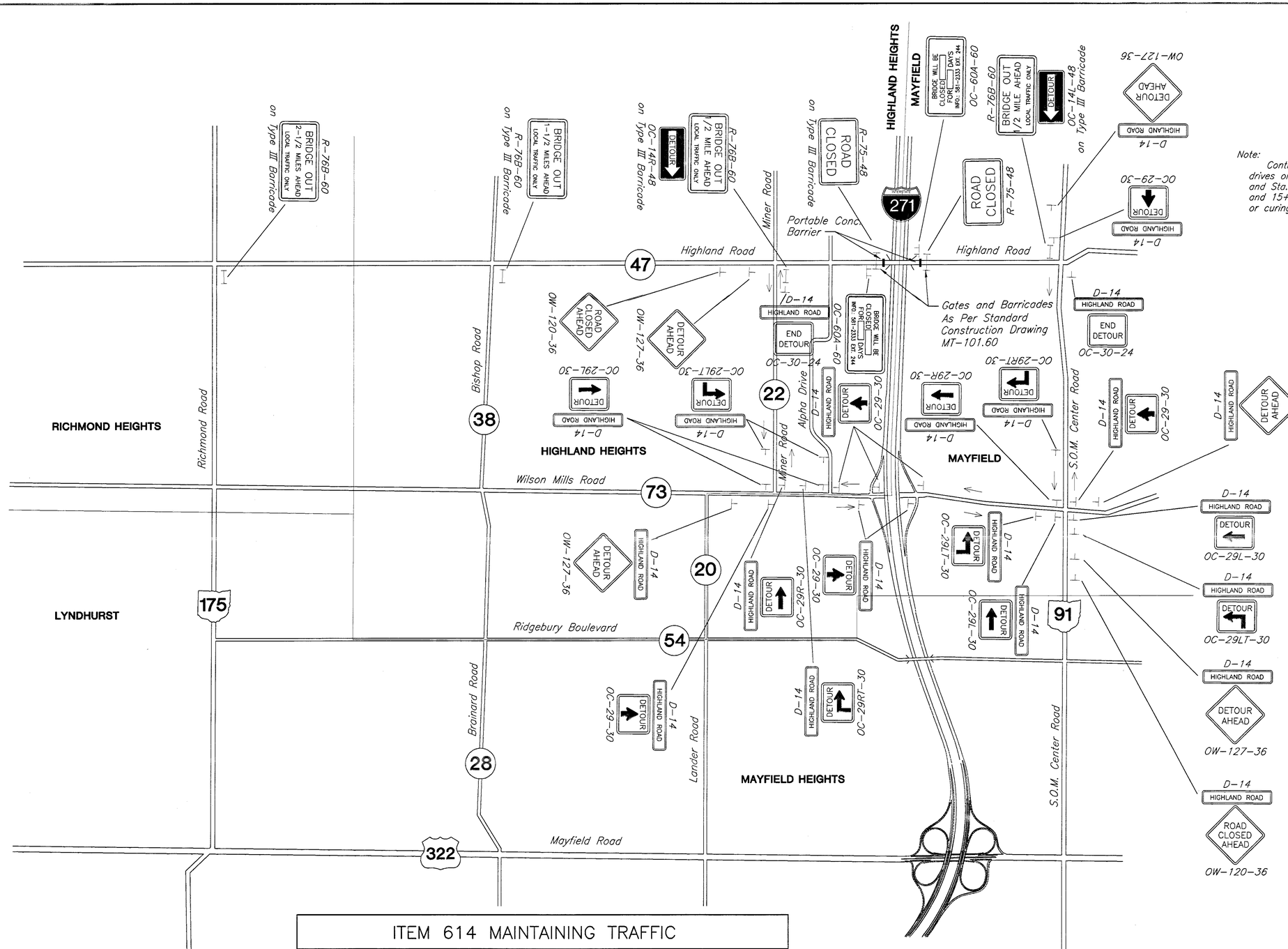

Note:
Contractor shall maintain access to all drives on Highland Road between Sta. 4+00 and Sta. 7+50, and between Sta. 12+00 and 15+00 except when actually paving or curing the drives.

ITEM 614 MAINTAINING TRAFFIC

	D-14	OC-14L-48	OC-14R-48	OC-29-30	OC-29L-30	OC-29R-30	OC-29LT-30	OC-29RT-30	OC-60A-60	OW-120-36	OW-127-36
NOTE: FOR INFORMATION ONLY.											
HIGHLAND ROAD DETOUR	25	1	1	8	4	2	4	2	2	2	5

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HIGHLAND ROAD DETOUR PLAN

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SHEET NUMBER													COST PARTICIPATION	ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	AS PER PLAN REF. SHEET
5	6	7	12	13	15	16	17	18	19	20	21	27	NORMAL PARTICIPATION						
																		ROADWAY	
													LUMP	201	11000	LUMP		CLEARING AND GRUBBING	
			202										202	202	22900	202	SQ. YD.	APPROACH SLAB REMOVED	
												406	406	202	23000	406	SQ. YD.	PAVEMENT REMOVED	
			599										599	202	23900	599	SQ. YD.	CONCRETE BASE REMOVED	
				226	148	53	147						574	202	35100	574	LIN. FT.	PIPE REMOVED, 24" AND UNDER	
					87.5	112.5							200	202	38000	200	LIN. FT.	GUARDRAIL REMOVED	
				2	1								3	202	58100	3	EACH	CATCH BASIN REMOVED	
				2			1						3	202	60010	3	EACH	MONUMENT ASSEMBLY REMOVED	
							120						120	202	75000	120	LIN. FT.	FENCE REMOVED	
					16	16							32	202	75200	32	LIN. FT.	FENCE REMOVED FOR REUSE	
								285	259	221	448	131	1344	203	12000	1344	CU. YD.	EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION	
								25	114	97	40	8	284	203	20000	284	CU. YD.	EMBANKMENT	
			2929										2929	203	50000	2929	SQ. YD.	SUBGRADE COMPACTION	
				1	1	1							3	604	38504	3	EACH	CUYAHOGA COUNTY ROADWAY MONUMENT ASSEMBLY	
					112.5	112.5							225	606	13000	225	LIN. FT.	GUARDRAIL, TYPE 5	
					3	3							6	606	26500	6	EACH	ANCHOR ASSEMBLY, TYPE T	
					2	2							4	606	35000	4	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 1	
			216		950	912							2078	608	10000	2078	SQ. FT.	4" CONCRETE WALK	
				4	4	2	2						12	SPECIAL	69050100	12	EACH	MAILBOX SUPPORT SYSTEM, SINGLE	23
																		EROSION CONTROL	
20													20	601	32200	20	CU. YD.	ROCK CHANNEL PROTECTION, TYPE C WITH FILTER	
100													100	601	34200	100	CU. YD.	ROCK CHANNEL PROTECTION, TYPE C WITHOUT FILTER	
0.05			0.20										0.25	870	20000	0.25	TON	COMMERCIAL FERTILIZER	
			1.00										1.00	870	30000	1.00	TON	AGRICULTURAL LIME	
6													6	870	35000	6	M.GAL	WATER	
5													5	870	40000	5	M.SQ. FT.	MOWING	
								49	55	42	73		219	660	25001	219	SQ. YD.	SODDING, STACKED, AS PER PLAN	5
100								369	562	430	603		2064	660	30001	2064	SQ. YD.	SODDING UNSTACKED, AS PER PLAN	5
500													500	877	10000	500	SQ. YD.	TEMPORARY SEEDING AND MULCHING	
400													400	877	30000	400	LIN.FT.	TEMPORARY PERIMETER, DITCH CHECK OR INLET PROTECTION FILTER FABRIC FENCE	
100													100	877	40000	100	LIN. FT.	TEMPORARY SLOPE DRAINS	
200													200	877	50000	200	CU. YD.	TEMPORARY SEDIMENT BASINS AND DAMS	
100													100	877	55000	100	CU. YD.	TEMPORARY DIKES	
100													100	877	55500	100	SQ. YD.	TEMPORARY DITCH PROTECTION	
																		DRAINAGE	
					0.20	0.20							0.40	602	20000	0.40	CU. YD.	CONCRETE MASONARY	
100													100	603	00400	100	LIN. FT.	4" CONDUIT, TYPE E FOR DRAINAGE CONNECTION	
100													100	603	00900	100	LIN. FT.	6" CONDUIT, TYPE B	
100													100	603	00900	100	LIN. FT.	6" CONDUIT, TYPE B FOR DRAINAGE CONNECTION	
100													100	603	01100	100	LIN. FT.	6" CONDUIT, TYPE C	
100													100	603	01100	100	LIN. FT.	6" CONDUIT, TYPE C FOR DRAINAGE CONNECTION	
100													100	603	01500	100	LIN. FT.	6" CONDUIT, TYPE F FOR DRAINAGE CONNECTION	
					27	27	64						118	603	04400	118	LIN. FT.	12" CONDUIT, TYPE B, 706.02 1350 D-LOAD	
				101	50	96	32						279	603	04600	279	LIN. FT.	12" CONDUIT, TYPE C, 706.01 CL. 3 OR 706.02 OR 706.08 E.S.	
				55	76	62							193	603	04900	193	LIN. FT.	12" CONDUIT, TYPE D	
					2	2							4	604	01000	4	EACH	CATCH BASIN, CUYAHOGA COUNTY NO. 3C	
				3	1	1	3						8	604	04501	8	EACH	CATCH BASIN, NO. 2-2B, AS PER PLAN	6
					1								1	604	31501	1	EACH	MANHOLE, NO. 3, AS PER PLAN	6
					1								1	604	34500	1	EACH	MANHOLE ADJUSTED TO GRADE	
2													2	604	37000	2	EACH	INSPECTION WELL	
	2000	500											2500	SPECIAL	60450000	2500	POUND	MISCELLANEOUS METAL	6,7
100													100	605	13402	100	LIN. FT.	6" UNCLASSIFIED PIPE UNDERDRAIN FOR SPRINGS	
				482									482	605	31100	482	LIN. FT.	AGGREGATE DRAIN	
100													100	605	32200	100	LIN. FT.	AGGREGATE DRAIN FOR SPRINGS	

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GENERAL SUMMARY

CUY-271-15.43

SHEET NUMBER								COST PARTICIPATION	ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	AS PER PLAN REF. SHEET
7	8	12	13	15	16	17	27	NORMAL PARTICIPATION						
													PAVEMENT	
		419						419	301	46001	419	CU. YD.	BITUMINOUS AGGREGATE BASE, PG64-22, AS PER PLAN	7
		488					145	633	304	20001	633	CU. YD.	AGGREGATE BASE, AS PER PLAN	7
		1032					192	1224	408	10000	1224	GALLON	BITUMINOUS PRIME COAT	
		125						125	448	46051	125	CU. YD.	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG64-22, AS PER PLAN	7
		90						90	448	47021	90	CU. YD.	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG64-22, AS PER PLAN	7
				2	2			4	448	47081	4	CU. YD.	ASPHALT CONCRETE SURFACE COURSE, UNDER GUARDRAIL, TYPE 1, PG64-22, AS PER PLAN	7
							29	29	448	48020	29	CU. YD.	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG64-22 (DRIVEWAYS)	
							354	354	452	10000	354	SQ. YD.	6" PLAIN CONCRETE PAVEMENT	
		193						193	611	25001	193	SQ. YD.	REINFORCED CONCRETE APPROACH SLAB (T=15"), AS PER PLAN	7
		60						60	830	26000	60	LIN. FT.	CURB, TYPE 6	
													WATER WORK	
			1			1		2	638	10480	2	EACH	FIRE HYDRANT REMOVED	
				1	2			3	638	10800	3	EACH	VALVE BOX ADJUSTED TO GRADE	
			1	3	2	1		7	638	10900	7	EACH	SERVICE BOX ADJUSTED TO GRADE	
			1			1		2	SPECIAL	63824702	2	EACH	EXTEND AND ADJUST HYDRANT TO GRADE, TYPE B	7
			1					1	SPECIAL	63828004	1	EACH	LOWER AND EXTEND 3/4" WATER SERVICE CONNECTION, SHORT SIDE COMPLETE	7, 26
			1					1	SPECIAL	63828208	1	EACH	LOWER AND EXTEND 3/4" WATER SERVICE CONNECTION, LONG SIDE COMPLETE	7, 26
			1	1	1	1		4	SPECIAL	63828502	4	EACH	LOWER 3/4" WATER SERVICE CONNECTION, SHORT SIDE COMPLETE	7, 26
				1	1			2	SPECIAL	63828706	2	EACH	LOWER 3/4" WATER SERVICE CONNECTION, LONG SIDE COMPLETE	7, 26
			1					1	SPECIAL	63829406	1	EACH	EXTEND 3/4" WATER SERVICE CONNECTION, COMPLETE	7, 26
200								200	SPECIAL	63830000	200	LIN. FT.	COPPER WATER TUBING	7
													MAINTENANCE OF TRAFFIC	
	50							50	SPECIAL	61412500	50	SQ. FT.	REPLACEMENT SIGN	8
	50							50	616	10000	50	M. GAL.	WATER	
	5							5	616	20000	5	TON	CALCIUM CHLORIDE	
	20							20	622	40020	20	LIN. FT.	PORTABLE CONCRETE BARRIER, 32"	
													FOR TRAFFIC CONTROL GENERAL SUMMARY, SEE SHEET 33 FOR CAST-IN-PLACE STRUCTURE QUANTITIES, SEE SHT. 42	
								LUMP						
								LUMP	614	11000	LUMP		MAINTAINING TRAFFIC	
								LUMP	623	10000	LUMP		CONSTRUCTION LAYOUT STAKES	
								12	624	10000	LUMP		MOBILIZATION	
								12	806	16010	12	MONTH	FIELD OFFICE, TYPE B	

[F:\JOBS\326\ROADWAY\HIGHLAND\326GS02H.DWG] PJK 12/15/00 PLOT @ 1:1 IMP.

CALCULATED NNB
CHECKED RAB

GENERAL SUMMARY

CUY-271-15.43

ITEM 202 – APPROACH SLAB REMOVED

Sta. 7+49.46 to Sta. 7+74.46
(25' x 36.33')/9 = 100.9 Sq. Yd.
Sta. 11+61.64 to Sta. 11+86.64
(25' x 36.33')/9 = 100.9 Sq. Yd.

TOTAL = 202 Sq. Yd.

ITEM 202 – CONCRETE BASE REMOVED

Sta. 4+80 to Sta. 7+ 49.46
(20' x 269.46')/9 = 598.8 Sq. Yd.

TOTAL = 599 Sq. Yd.

ITEM 203 – SUBGRADE COMPACTION

From Item 304
488.2 Cu. Yd. X 27/0.5'/9 = 2,929.2 Sq. Yd.

TOTAL = 2,929 Sq. Yd.

ITEM 301 – 8" BITUMINOUS AGGREGATE BASE, PG64-22, AS PER PLAN

Sta. 4+80 to Sta. 6+00
[(34.58'+34.29')/2 x 120.00' x 0.67']/27 = 102.5 Cu. Yd.
Sta. 6+00 to Sta. 7+49.46
[(34.29'+29.0')/2 x 149.46' x 0.67']/27 = 117.4 Cu. Yd.
Sta. 11+86.64 to Sta. 13+60
(29' x 173.36' x 0.67')/27 = 124.8 Cu. Yd.
Sta. 13+60 to Sta. 14+80
[(29.0'+21.0')/2 x 120' x 0.67']/27 = 74.4 Cu. Yd.

TOTAL = 419 Cu. Yd.

ITEM 304 – 6" AGGREGATE BASE, AS PER PLAN

Sta. 4+80 to Sta. 6+00
[(35.58'+35.29')/2 x 120.00' x 0.5']/27 = 78.7 Cu. Yd.
Sta. 6+00 to Sta. 7+49.46
[(35.29' + 30')/2 x 149.46' x 0.5]/27 = 90.4 Cu. Yd.
Sta. 7+49.46 to Sta. 7+74.46
(40' x 25' x 0.5')/27 = 18.5 Cu. Yd.
Sta. 11+61.64 to Sta. 11+86.64
(40 x 25' x 0.5')/27 = 18.5 Cu. Yd.
Sta. 11+86.64 to Sta. 13+60
(30.0' x 173.36' x 0.5')/27 = 96.3 Cu. Yd.
Sta. 13+60 to Sta. 14+80
[(30.0'+22.0')/2 x 120.00' x 0.5']/27 = 57.8 Cu. Yd.

AREA UNDER SHOULDERS

Sta. 4+80 to Sta. 6+00, Lt.
$[\frac{(4.0 + 10.0)}{2}$ (120.0 – *46.0) x 0.5]/27 = 9.6 Cu.Yd.
Sta. 6+00 to Sta. 7+05, Lt.
[(10.0' x (105 – *35) x 0.5')]/27 = 13.0 Cu. Yd.
Sta. 4+80 to Sta. 7+00, Rt.
[(10.0' x (220.0 – *69.0) x 0.5')]/27 = 28.0 Cu. Yd.
Sta. 12+32 to Sta. 14+60, Lt.
[(10.0' x (228.0 – *25.0) x 0.5')]/27 = 37.6 Cu. Yd.
Sta. 14+60 to Sta. 14+80, Lt.
$[\frac{(4.0 + 10.0)}{2}$ x 20.0 x 0.5]/27 = 2.6 Cu.Yd.
Sta. 12+24 to Sta. 14+50, Rt.
[10.0' x (226 – *25.0) x 0.5']/27 = 37.2 Cu. Yd.

TOTAL = 488 Cu. Yd.

* Deduction for Drives

ITEM 408 – BITUMINOUS PRIME COAT

(Rate: 0.40 Gallons/Square Yard)

From Item 448
(89.6 Cu. Yd. x 27/0.10417'/9) x 0.40 = 1,032.2 Gal.

TOTAL = 1,032 Gal.

ITEM 448 – 1-1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE I, PG64-22, AS PER PLAN

Sta. 4+80 to Sta. 6+00
[(33.58'+33.29')/2 x 120.00' x 0.10417']/27 = 15.5 Cu. Yd.
Sta. 6+00 to Sta. 7+49.46
$[(33.29'+\frac{28.00'}{2}) \times 149.46' \times 0.10417']/27$ = 17.7 Cu. Yd.
Sta. 11+86.64 to Sta. 13+60
(28.00'x 173.36' x 0.10417')/27 = 18.7 Cu. Yd.
Sta. 13+60 to Sta. 14+80
[(28.00'+20.00') /2 x 120 x 0.10417']/27 = 11.1 Cu. Yd.

AREA UNDER SHOULDERS

Sta. 4+80 to Sta. 6+00, Lt.
$[\frac{(4.0 + 10.0)}{2}$ x (120.0 – *46.0) x 0.10417']/27 =2.0 Cu.Yd.
Sta. 6+00 to Sta. 7+05, Lt.
[(10.0' x (105 – *35) x 0.10417')]/27 = 2.7 Cu. Yd.
Sta. 4+80 to Sta. 7+00, Rt.
[(10.0' x (220.0 – *69.0) x 0.10417')]/27 = 5.8 Cu. Yd.
Sta. 12+32 to Sta. 14+60, Lt.
[(10.0' x (228.0 – *25.0) x 0.10417')]/27 = 7.8 Cu. Yd.
Sta. 14+60 to Sta. 14+80, Lt.
$[\frac{(4.0 + 10.0)}{2}$ x (20.0 x 0.10417']/27 = 0.5 Cu.Yd.
Sta. 12+24 to Sta. 14+50, Rt.
[(10.0' x (226 – *25.0) x 0.10417')]/27 = 7.8 Cu. Yd.

TOTAL = 90 Cu. Yd.

ITEM 448 – 1-3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG64-22, AS PER PLAN

89.6 Cu.Yd. x $\frac{0.14583}{0.10417}$ = 125.4 Cu. Yd.

TOTAL = 125 Cu. Yd.

ITEM 608 – CONCRETE WALK

Sta. 7+49± to Sta. 7+61±, Lt. & Rt.
(4.5 x 12) x 2 =108 Sq. Ft.
Sta. 11+75± to Sta. 11+87±, Lt. & Rt.
(4.5 x 12) x 2 =108 Sq. Ft.

TOTAL = 216 Sq. Ft.

ITEM 609 – CURB, TYPE 6

Sta. 7+34± to Sta. 7+49±, Lt. & Rt.
15 x 2 =30 Lin. Ft.
Sta. 11+87± to Sta. 12+02±, Lt. & Rt.
15 x 2 =30 Lin. Ft.

TOTAL = 60 Lin. Ft.

ITEM 611 – REINFORCED CONCRETE APPROACH SLAB (T=15"), AS PER PLAN

Sta. 7+49.46 to Sta. 7+74.46
[(13'x 40') + (12' x 29')]/9 = 96.4 Sq. Yd.
Sta. 11+61.64 to Sta. 11+86.64
[(13'x 40') + (12' x 29')]/9 = 96.4 Sq. Yd.

TOTAL = 193 Sq. Yd.

ITEM 870 – COMMERCIAL FERTILIZER

(Rate: 20 lbs. per 1,000 Sq. Ft.)
(2,283 S.Y. x 9/1000 x 20) /2000 = 0.20 Ton

TOTAL = 0.20 Ton

ITEM 870 – AGRICULTURAL LIMING

(Rate: 100 lbs. per 1,000 Sq. Ft.)
(2,283 S.Y. x 9/1000 x 100) /2000 = 1.03 Ton

TOTAL = 1.00 Ton

CALCULATED NNB CHECKED RAB

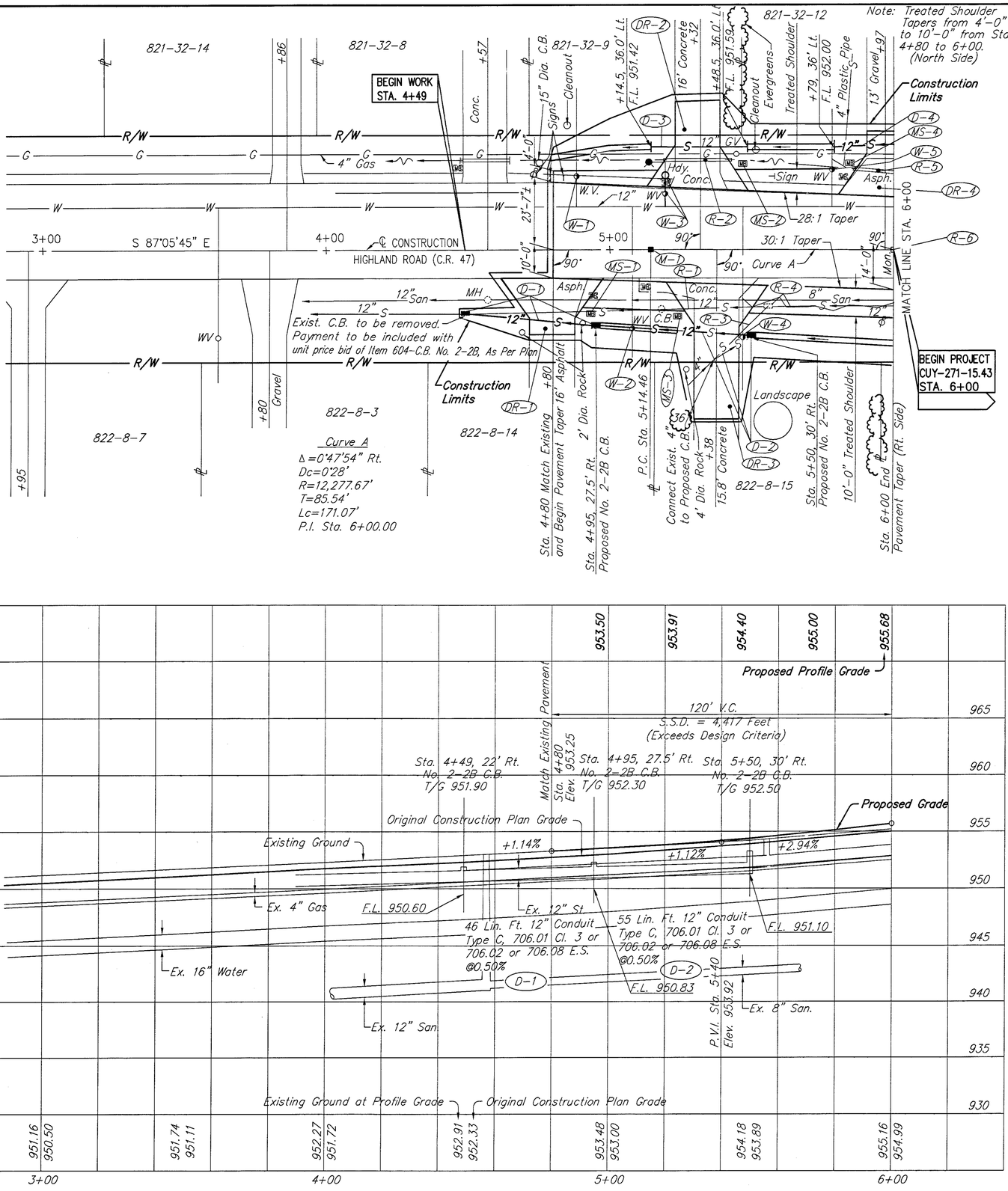
CALCULATIONS

CUY-271-15.43

12/57

[328PC01A.DWG] P.K 12/14/00 PLOT @ 1:1 IMP.

EUTHENICS INC. CONSULTING ENGINEERS CLEVELAND, OHIO



REF. NO.	STATION		SIDE	202 Pipe Removed, 24" and Under	202 Catch Basin Removed	202 Monument Assembly Removed		603 12" Conduit, Type C, 706.01 Cl. 3 or 706.02 or 706.08 E.S.	603 12" Conduit, Type D	604 Catch Basin, No. 2-2B, As Per Plan	604 Cuyahoga County Roadway Monument Assembly
	FROM	TO		Lin. Ft.	Each	Each		Lin. Ft.	Lin. Ft.	Each	Each
R-1	4+49	5+56	Rt.	107	1						
R-2	5+19	5+43	Lt.	24							
R-3	5+36	5+56	Rt.	27							
R-4	5+56	6+00	Rt.	44	1						
R-5	5+76	6+00	Lt.	24							
R-6	6+00		℄			1					
D-1	4+49	4+95	Rt.					46		2	
D-2	4+95	5+50	Rt.					55		1	
D-3	5+14.5	5+48.5	Lt.						34		
D-4	5+79	6+00	Lt.						21		
M-1	5+14.46		℄			1					1
	Total			226	2	2		101	55	3	1

REF. NO.	STATION		SIDE	638 Service Box, Adjusted to Grade	SPECIAL Extend and Adjust Hydrant to Grade, Type B	SPECIAL Lower and Extend 3/4" Water Service Connection, Short Side Complete	SPECIAL Lower and Extend 3/4" Water Service Connection, Long Side Complete	SPECIAL Lower 3/4" Water Service Connection, Short Side Complete	SPECIAL Extend 3/4" Water Service Connection, Complete	638 Fire Hydrant Removed	SPECIAL Mailbox Support System, Single
	FROM	TO		Each	Each	Each	Each	Each	Each	Each	Each
W-1	4+88		Lt.			1					
W-2	5+08		Rt.				1				
W-3	5+19		Lt.		1					1	
W-4	5+47		Rt.						1		
W-5	5+78		Lt.	1				1			
MS-1	4+93		Rt.								1
MS-2	5+47		Lt.								1
MS-3	5+24		Rt.								1
MS-4	5+84		Lt.								1
	Total			1	1	1	1	1	1	1	4

ITEM 605 – AGGREGATE DRAIN
(at 50 foot intervals)

HIGHLAND ROAD
Sta. 4+80 to Sta. 7+49.46, Lt. & Rt.
[269.46'/50 x 24'(Avg. Length)] x 2 = 259 Lin. Ft.
Sta. 11+86.64 to Sta. 14+80, Lt. & Rt.
[293.36'/50' x 19'(Avg. Length)] x 2 = 223 Lin. Ft.

Total = 482 Lin. Ft.

N

0 20 40 HORIZONTAL SCALE IN FEET

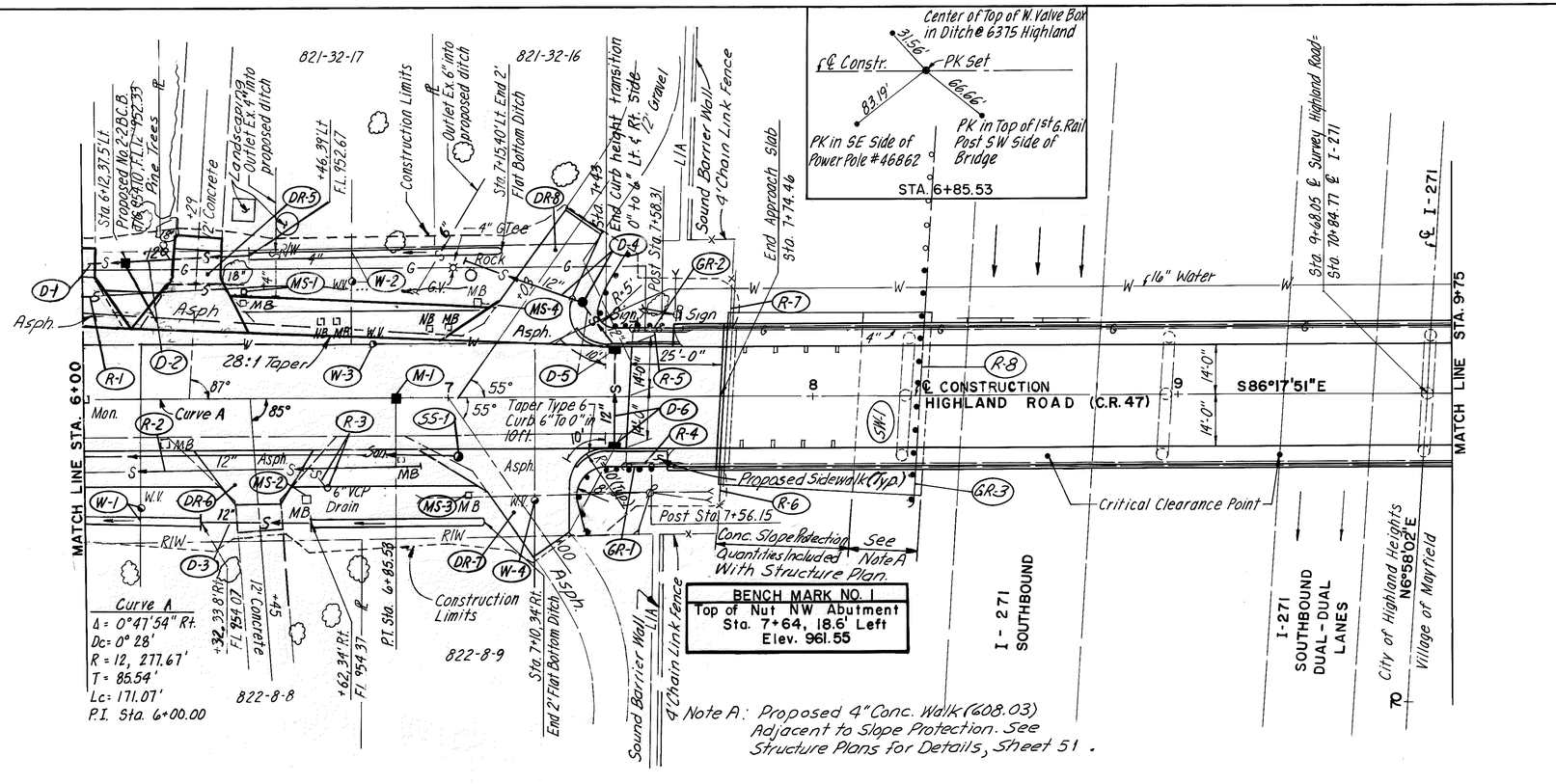
CALCULATED EPS CHECKED RAB

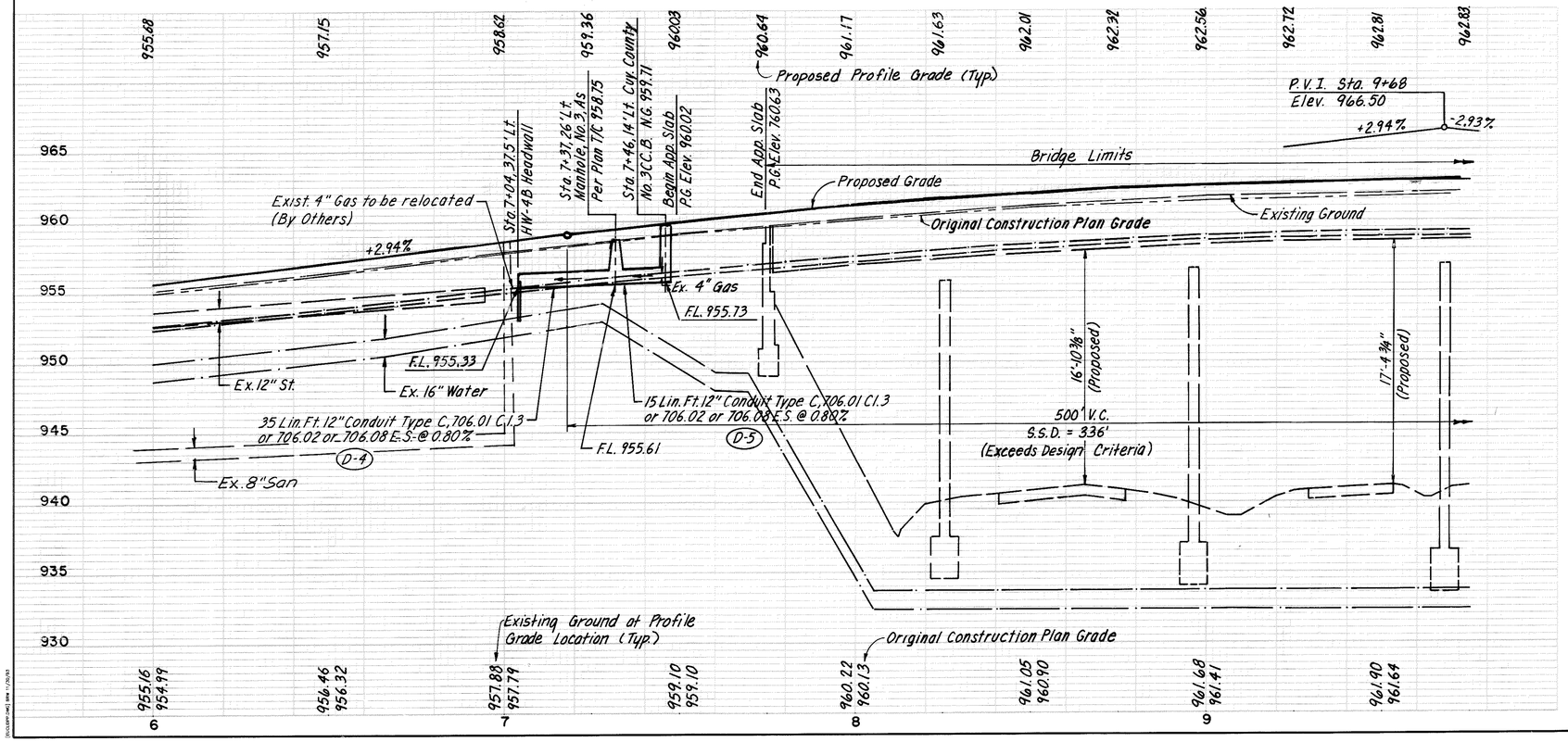
PLAN AND PROFILE - HIGHLAND ROAD (C.R. 47) STA. 3+00 TO STA. 6+00

CUY-271-15.43

13/57

[326PP02.DWG] P.K. 5/30/00 PLOT 1:20





EXISTING STRUCTURE	
Type:	Continuous Steel Beam, with Reinforced Concrete Deck and Substructure
Spans:	49'–0"±, 4 Spans @ 71'–2"±, 49'–0"± Center to Center Bearings
Roadway:	28'–0"± Toe to Toe of Curbs with two 4'–2"± Sidewalks
Loading:	C.F.= 130 (57)
Skew:	3°–15'–53"± Left Forward
Wearing Surface:	Monolithic Concrete
Approach Slabs:	25' Long
Alignment:	Tangent
Crown:	Normal, 0.0156± Ft./Ft.
Date Built:	1960
Structural File No.:	1811851

PROPOSED STRUCTURE	
Proposed Work:	Replace concrete deck, seal expansion joints and repair and seal existing substructure units
Type:	Continuous composite steel beam with reinforced concrete deck and substructure
Spans:	49'–0"±, 4 spans @ 71'–2"±, 49'–0"± Center to Center Bearings
Roadway:	28'–0" Toe to Toe of Curbs with two 5'–0" Sidewalks
Loading:	HS20–44 Case II and the Alternate Military Loading
Skew:	3°–15'–53"± Left Forward
Wearing Surface:	Monolithic Concrete
Approach Slabs:	AS–1–81 (25'–0" Long)
Alignment:	Tangent
Crown:	Normal, 0.0156 Ft./Ft.

For Sewer Profile of D-6, see Sheet 19.
For Estimated Quantities, see Sheet 15.

N

0 20 40 HORIZONTAL SCALE IN FEET

CALCULATED EPS
CHECKED RAB

PLAN AND PROFILE - HIGHLAND ROAD (C.R. 47) STA. 6+00 TO STA. 9+75

CUY-271-15.43

14/57

ESTIMATED QUANTITIES (STA. 6+00 TO STA. 9+75)

REF. NO.	STATION FROM	STATION TO	SIDE	202 Pipe Removed, 24" and Under	202 Guardrail Removed	202 Catch Basin Removed	202 Fence Removed for Reuse		602 Concrete Masonry	603 12" Conduit, Type B, 706.02 1350 D-Load	603 12" Conduit, Type C, 706.01 Cl. 3 or 706.02 or 706.08 E.S.	603 12" Conduit, Type D	604 Manhole Adjusted to Grade	604 Catch Basin, Cuyahoga County No. 3C	604 Catch Basin, No. 2-2B, As Per Plan	604 Manhole, No. 3, As Per Plan	604 Cuyahoga County Roadway Monument Assembly		448 3" Asphalt Concrete Surface Course, Under Guardrail, Type 1, PG 64-22, As Per Plan	606 Anchor Assembly, Type T	606 Guardrail, Type 5	606 Bridge Terminal Assembly, Type 1	608 Concrete Walk	638 Valve Box Adjusted to Grade	SPECIAL Lower 3/4" Water Service Connection, Long Side Complete	SPECIAL Lower 3/4" Water Service Connection, Short Side Complete	638 Service Box, Adjusted to Grade	SPECIAL Mailbox Support System, Single
				Lin. Ft.	Lin. Ft.	Each	Lin. Ft.		Cu. Yd.	Lin. Ft.	Lin. Ft.	Lin. Ft.	Each	Each	Each	Each	Each		Cu. Yd.	Each	Lin. Ft.	Each	Sq. Ft.	Each	Each	Each	Each	Each
R-1	6+00	6+50	Lt.	50																									
R-2	6+00	6+92	Rt.	92																									
R-3	6+62	6+67	Rt.	6		1																							
R-4	7+50	7+62.5	Rt.		12.5																								
R-5	7+52	7+64.5	Lt.		12.5																								
R-6	7+75	7+76	Rt.				8																						
R-7	7+77	7+78	Lt.				8																						
R-8	70+45±	71+07.5	Lt.		62.5																								
D-1	6+00	6+12	Lt.									12																	
D-2	6+12	6+46	Lt.									34			1														
D-3	6+32	6+62	Rt.									30																	
D-4	7+04	7+37	Lt.						0.20		35					1													
D-5	7+37	7+46	Lt.								15			1															
D-6	7+46	7+46	Lt./Rt.							27				1															
M-1	6+85.53		℄														1												
W-1	6+15		Rt.																								1		1	
W-2	6+74		Lt.																									1	1	
W-3	6+79		Lt.																							1				
W-4	7+23		Rt.																										1	
MS-1	6+44		Lt.																											1
MS-2	6+60		Rt.																											1
MS-3	7+05		Rt.																											1
MS-4	7+08		Lt.																											1
GR-1	7+35	7+62.40	Rt.																	1	1	31.25	1						
GR-2	7+40	7+64.56	Lt.																	1	1	31.25	1						
GR-3	70+45±	71+07.5	Lt.																		1	50.00							
SS-1	7+02		Rt.										1																
SW-1	70+50	71+07	Lt.																					950					
TOTAL				148	87.5	1	16		0.20	27	50	76	1	2	1	1	1		2	3	112.50	2	950	1	1	1	3	4

For Plan, see Sheet 14

CALCULATED EPS
CHECKED RAB

ESTIMATED QUANTITIES - HIGHLAND ROAD

CUY-271-15.43

[325EQ02.DWG] PJK 12/14/00 PLOT @ 1:50 IMP.

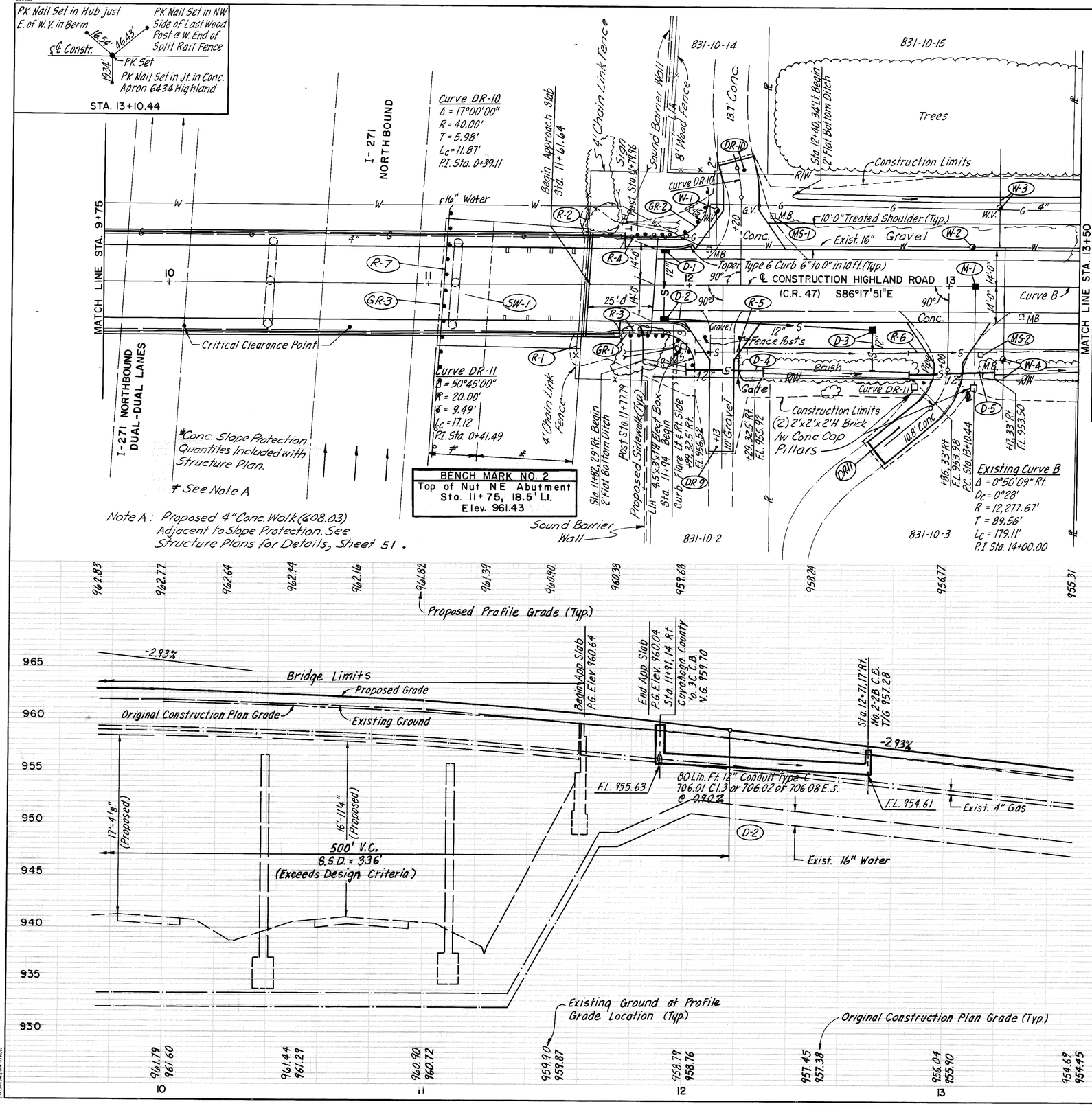
S69900

PK Nail Set in Hub just E. of W.V. in Berm — 16.54' — 16.43' — PK Nail Set in NW Side of Last Wood Post @ W. End of Split Rail Fence

℄ Constr. — 19.34' — PK Set

PK Nail Set in Jt. in Conc. Apron 6434 Highland

STA. 13+10.44



REF. NO.	STATION		SIDE	202	202	202	602	603	603	603	604	604	604
				Pipe Removed, 24" and Under	Guardrail Removed	Fence Removed For Reuse	Concrete Masonry	12" Conduit, Type B, 706.02 1350 D-Load	12" Conduit, Type C, 706.01 C1.3 or 706.02 or 706.08 E.S.	12" Conduit, Type D	Catch Basin, Cuyahoga County No. 3C	Catch Basin, No. 2-2B, As Per Plan *	Cuyahoga County Roadway Monument Assembly
	FROM	TO		LIN. FT.	LIN. FT.	LIN. FT.	CU. YD.	LIN. FT.	LIN. FT.	LIN. FT.	EACH	EACH	EACH
R-1	11+57	11+58	Rt.			8							
R-2	11+60	11+61	Lt.			8							
R-3	11+71.5	11+96.5	Rt.		25								
R-4	11+73.5	11+98.5	Lt.		25								
R-5	12+04	12+23	Rt.	19									
R-6	12+84	13+18	Rt.	34									
R-7	70+60±	71+22.5	Rt.		62.50								
D-1	11+91	11+91	Lt./Rt.					27			1		
D-2	11+91	12+71	Rt.						80		1		
D-3	12+71	12+71	Rt.				0.20		16			1	
D-4	11+99	12+29	Rt.							30			
D-5	12+85	13+17	Rt.							32			
M-1	13+10.44		℄										1
TOTAL				53	112.50	16	0.20	27	96	62	2	1	1

* Note:
Contractor shall provide bicycle safety heavy duty frame and grate with the proposed No. 2-2B Catch Basin at Sta. 12+71, 17' Rt.

REF. NO.	STATION		SIDE	448	606	606	606	638	638	SPECIAL	SPECIAL	SPECIAL
				3" Asph. Conc., AC-20, Under G.R. Type I, PG64-22, M.P.P.	Anchor Assembly, Type T	Guardrail, Type 5	Bridge Terminal Assembly, Type I	Service Box Adjusted to Grade	Valve Box Adjusted to Grade	Lower ¾" Water Service Connection, Long Side Complete	Lower ¾" Water Service Connection, Short Side Complete	Mailbox Support System, Single
	FROM	TO		CU. YD.	EACH	LIN. FT.	EA.	EA.	EA.	EACH	EACH	EACH
W-1	12+10		Lt.						1			
W-2	13+09		Lt.						1			
W-3	13+19		Lt.					1			1	
W-4	13+21		Rt.					1		1		
MS-1	12+33		Lt.									1
MS-2	13+12		Rt.									1
GR-1	11+71.54	12+02	Rt.	1	1	31.25	1					
GR-2	11+73.71	12+08	Lt.	1	1	31.25	1					
GR-3	70+60±	71+22.50			1	50						
TOTAL				2	3	112.50	2	2	2	1	1	2

Ref. No.	Station From	Station To	Side	608 Concrete Walk Sq. Ft.
SW-1	70+63	71+18		912
Total				912

For Sewer Profiles of D-1 and D-3, see Sheet 20.

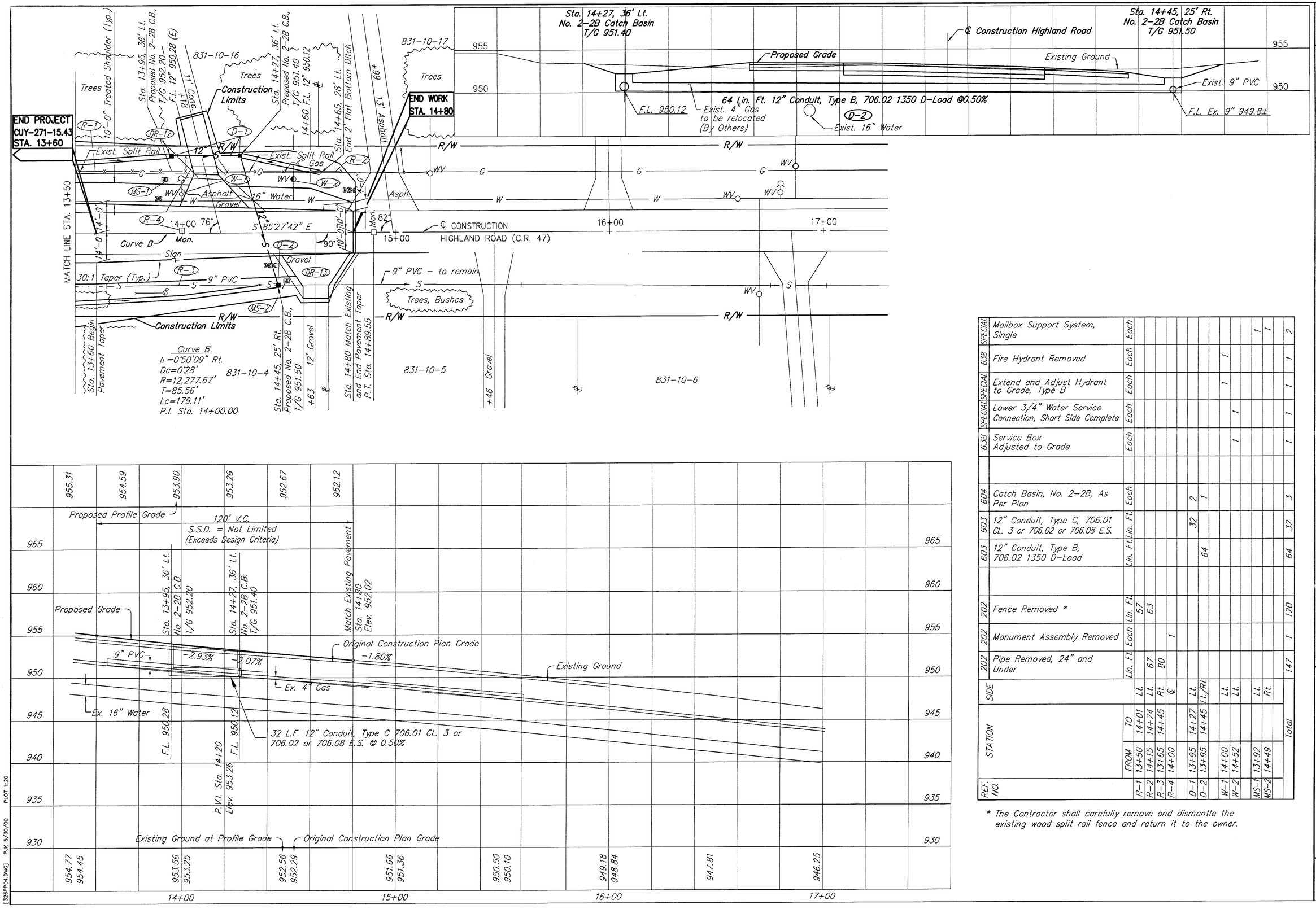
CALCULATED EPS
CHECKED RAB

HORIZONTAL SCALE IN FEET
0 20 40

PLAN AND PROFILE - HIGHLAND ROAD (C.R. 47) STA. 9+75 TO STA. 13+50

CUY-271-15.43

16
57



REF. NO.	STATION FROM	STATION TO	SIDE	202 Pipe Removed, 24" and Under Lin. Ft.	202 Monument Assembly Removed Each	202 Fence Removed * Lin. Ft.	603 12" Conduit, Type B, 706.02 1350 D-Load Lin. Ft.	603 12" Conduit, Type C, 706.01 CL. 3 or 706.02 or 706.08 E.S. Lin. Ft.	604 Catch Basin, No. 2-2B, As Per Plan Each	6.38 Service Box Adjusted to Grade Each	SPECIAL Lower 3/4" Water Service Connection, Short Side Complete Each	SPECIAL Extend and Adjust Hydrant to Grade, Type B Each	6.38 Fire Hydrant Removed Each	SPECIAL Mailbox Support System, Single Each
R-1	13+50	14+01	Lt.			57								1
R-2	14+15	14+74	Lt.	67		63							1	1
R-3	13+65	14+45	Rt.	80								1		2
R-4	14+00		℄		1					1	1		1	
D-1	13+95	14+27	Lt.					32	2					
D-2	13+95	14+45	Lt./Rt.				64		1					
W-1	14+00		Lt.							1	1			
W-2	14+52		Lt.											
MS-1	13+92		Lt.											
MS-2	14+49		Rt.											
			Total	147	1	120	64	32	3	1	1	1	1	2

* The Contractor shall carefully remove and dismantle the existing wood split rail fence and return it to the owner.

HORIZONTAL SCALE IN FEET
0 20 40

CALCULATED EPS
CHECKED RAB

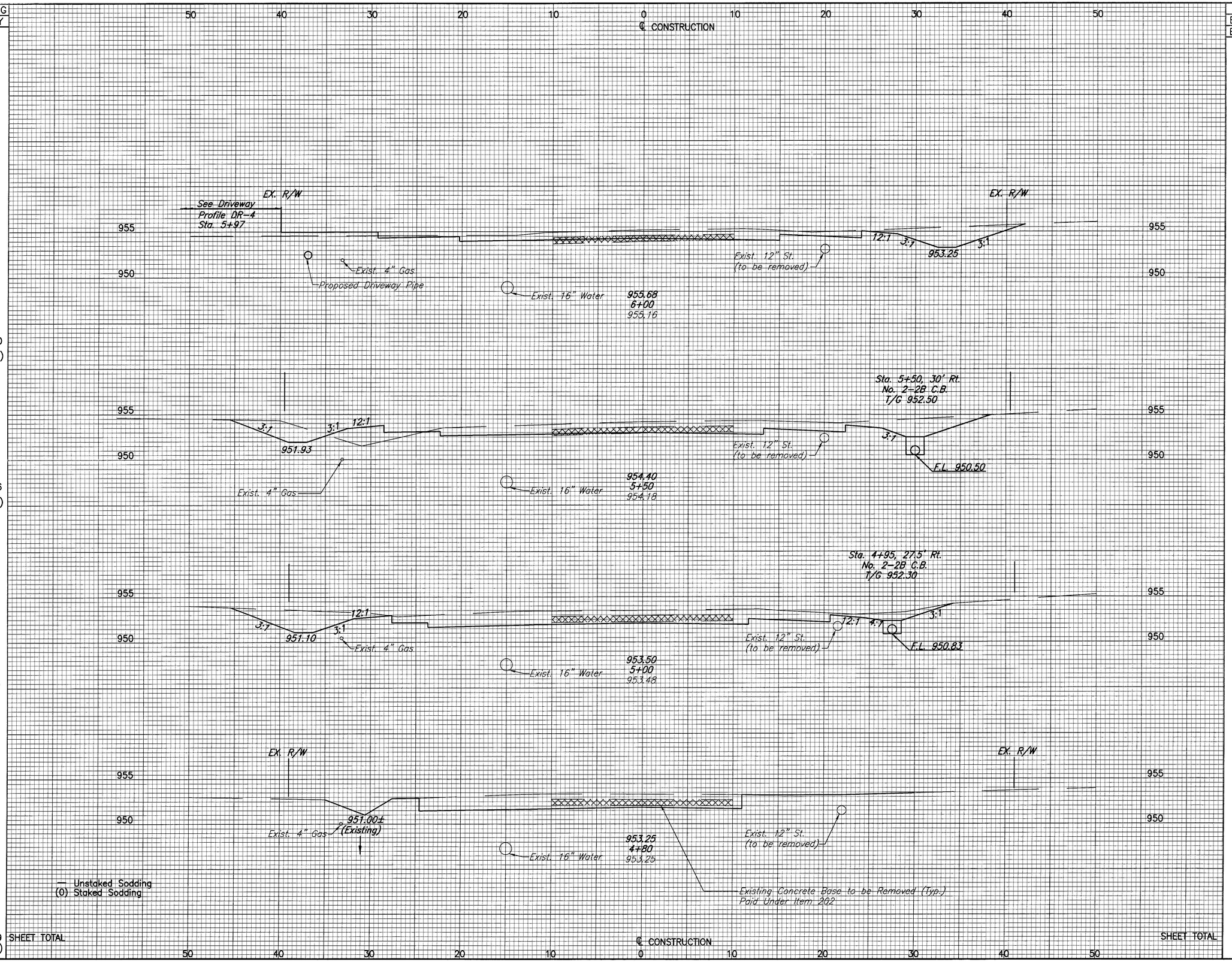
PLAN AND PROFILE - HIGHLAND ROAD (C.R. 47)
STA. 13+50 TO STA. 14+50

CUY-271-15.43

17/57

PLOT 1:20
P.W. 5/30/00
[326PP04.DWG]

SODDING	
LF	SY
25	
(4)	
	150
	(22)
29	
(4)	
156	
(22)	
27	
(4)	
	63
	(5)
30	
369	SHEET TOTAL
(49)	



EARTHWORK			
END AREA		VOLUME	
EXC.	EMB.	EXC.	EMB.
48	3		
		109	14
70	12		
		133	11
74	0		
		43	0
41	0		
		285	25

CALCULATED PLN CHECKED EPS

CROSS SECTIONS - HIGHLAND ROAD STA. 4+80 TO STA. 6+00

CUY-271-15.43

18
57

[32X5SH1.DWG] PJK 12/15/009 PLOT @ 1:5

SODDING LF	SODDING SY
	47
35 (0)	
	184 (11)
32 (4)	
175 (22)	
31 (4)	
156 (22)	
25 (4)	
562 (55)	SHEET TOTAL

Spill Quantity
Sta. 7+49.46 to Sta. 7+61.5±
[(35' +35')/2 x 12']/9 = 47 S.Y.

Spill Quantity
Sta. 7+49.46 to Sta. 7+74.46
Exc.: [(29'x12'x1') + (35'x13'x1')]/27 = 30 C.Y.
Sta. 7+49.46 to Sta. 7+61.5±
Emb.: [(36 S.F. + 36 S.F.)/2 x 12']/27 = 16 C.Y.

50 40 30 20 10 0 ℄ CONSTRUCTION 10 20 30 40 50

960 955 950

EX. R/W — 4:1 — 24:1 — D-5 — Exist. 4" Gas — F.L. 955.73 — Exist. 16" Water — Sta. 7+46, 14' Lt. Cuyahoga County No. 3C Catch Basin N.G. 959.71

960.02
7+49.46
959.10

27 Lin. Ft. 12" Conduit, Type B, 706.02 1350 D-Load @1.00%
D-6

Sta. 7+46, 14' Rt. Cuyahoga County No. 3C Catch Basin N.G. 959.71 — 24:1 — 4:1 — EX. R/W — F.L. 956.00

960 955 950

EX. R/W — 3:1 — 12:1 — 3:1 — 954.20 — Exist. 4" Gas — Exist. 16" Water

958.62
7+00
957.88

12:1 — 3:1 — 956.00 — 3:1 — EX. R/W

960 955 950

EX. R/W — 3:1 — 12:1 — 3:1 — 954.00 — Exist. 4" Gas — Exist. 16" Water

957.15
6+50
956.46

Exist. 12" Storm (to be removed)

12:1 — 3:1 — 954.25 — 3:1 — EX. R/W

Existing Asphalt Bituminous Base to be removed and backfilled. Quantities of Excavation and Embankment included in end area of section.

Existing Concrete Base to be Removed (Typ.) Paid Under Item 202

Sta. 6+00 — Sta. 6+00

— Unstaked Sodding
(0) Staked Sodding

℄ CONSTRUCTION

50 40 30 20 10 0 10 20 30 40 50

SHEET TOTAL

EARTHWORK			
END AREA		VOLUME	
EXC.	EMB.	EXC.	EMB.
		30	16
23	45		
		60	54
43	14		
		82	35
46	24		
		87	25
48	3		
		259	114

CALCULATED PLN
CHECKED EPS

CROSS SECTIONS - HIGHLAND ROAD
STA. 6+50 TO STA. 7+49.46

CUY-271-15.43

19
57

[326KSH2.DWG] PJK 12/15/00 PLOT @ 1:5

SODDING LF	SODDING SY
33 (4)	167 (22)
27 (4)	169 (17)
34 (2)	49 (3)
32 (2)	45 (0)
	430 (42)

SHEET TOTAL

— Unstaked Sodding
(0) Staked Sodding

℄ CONSTRUCTION

Sta. 12+71, 17' Rt.
No. 2-2B Catch Basin
T/G 957.28

Proposed Top of Pavement

Sta. 12+71, 33' Rt.
HW-4B Headwall

957.62
Sta. 12+71
(Drainage Outlet)

F.L. 954.91

16 Lin. Ft. 12" Conduit Type C, 706.01 Cl. 3 or 706.02 or 706.08 E.S. @0.90%
D-3

954.59

F.L. 954.77

2:1

EX. R/W

3:1

954.50

Exist. 4" Gas

Exist. 16" Water

956.77
13+00
956.04

12:1

953.75

Sta. 11+91, 14' Lt.
Cuyahoga County No. 3C
Catch Basin
N.G. 959.70

Sta. 11+91, 14' Rt.
Cuyahoga County No. 3C
Catch Basin
N.G. 959.70

4:1

24:1

956.50

27 Lin. Ft. 12" Conduit, Type B, 706.02 1350 D-Load @1.00%
D-1

959.68
12+00
958.79

F.L. 955.90

F.L. 955.63

958.24
12+50
957.45

955.70

955.50

960.04
11+86.64
959.10

958.00

Exist. 16" Water

Spill Quantity
Sta. 11+74.7± to Sta. 11+86.64
[(34' + 34')/2 x 12"]/9 = 45 S.Y.

Existing Asphalt Bituminous Base to be removed and backfilled. Quantities of Excavation and Embankment included in end area of section.

Spill Quantity
Sta. 11+61.64 to Sta. 11+86.64
Exc.: [(35' x 13' x 1')+(29' x 12' x 1')]/27 = 30 C.Y.
Sta. 11+74.7± to Sta. 11+86.64
Emb.: [(22 S.F. + 22 S.F.)/2 x 12']/27 = 10 C.Y.

EARTHWORK END AREA EXC.	EARTHWORK END AREA EMB.	VOLUME EXC.	VOLUME EMB.
68	3	102	20
42	19	72	51
36	6	17	16
32	28	30	10
		221	97

SHEET TOTAL

CALCULATED PLN
CHECKED EPS

STA. 11+86.64 TO 13+00

CUY-271-15.43

20
57

[326XSH3o.DWG] kjw 12-15-00 PLOT 1:5

SODDING	
LF	SY
18 (0)	
	67 (7)
22 (4)	
	150 (22)
32 (4)	
	192 (22)
37 (4)	
	194 (22)
33 (4)	
	603 (73)

SHEET TOTAL

— Unstacked Sodding
(0) Stacked Sodding

50 40 30 20 10 0 10 20 30 40 50

℄ CONSTRUCTION

EX. R/W

955

950

Exist. 4" Gas

952.02
14+80
952.02

Exist. 16" Water

EX. R/W

Exist. 9" PVC

Sta. 14+45, 28' Rt.
No. 2-2B Catch Basin
T/G 951.50

955

950

3:1

12:1

951.50

Exist. 4" Gas (to be relocated by others)

To Catch Basin
Sta. 14+27

952.67
14+50
952.56

Exist. 16" Water

12:1

3:1

3:1

Exist. 9" PVC - to remain in service

951.60

F.L. Ex. 9" 949.81

Sta. 13+95, 36' Lt.
No. 2-2B Catch Basin
T/G 952.20

955

950

2:1

12:1

952.50

Exist. 4" Gas

F.L. 950.28

953.90
14+00
953.56

Exist. 16" Water

3:1

952.00

Exist. 9" PVC - to be removed

EX. R/W

To Proposed C.B.
Sta. 13+95

955

950

2:1

3:1

12:1

952.90

Exist. 4" Gas

955.31
13+50
954.69

Exist. 16" Water

12:1

3:1

2:1

953.00

Sta. 13+00

Sta. 13+00

℄ CONSTRUCTION

50 40 30 20 10 0 10 20 30 40 50

EARTHWORK			
END AREA		VOLUME	
EXC.	EMB.	EXC.	EMB.
32	0		
		52	0
62	0		
		127	0
75	0		
		138	19
74	20		
		131	21
68	3		
		448	40

SHEET TOTAL

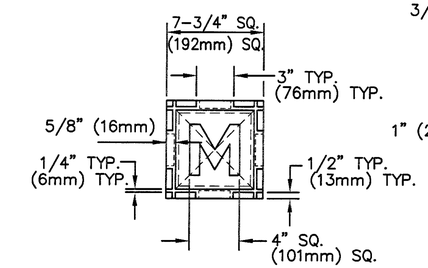
CALCULATED PLN
CHECKED EPS

CROSS SECTIONS - HIGHLAND ROAD STA. 13+50 TO STA. 14+80

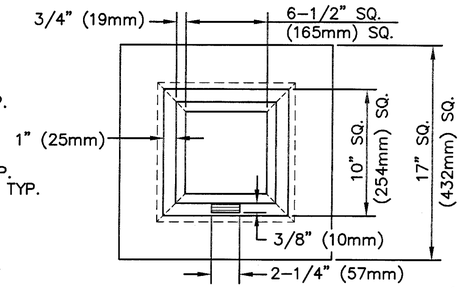
CUY-271-15.43

21
57

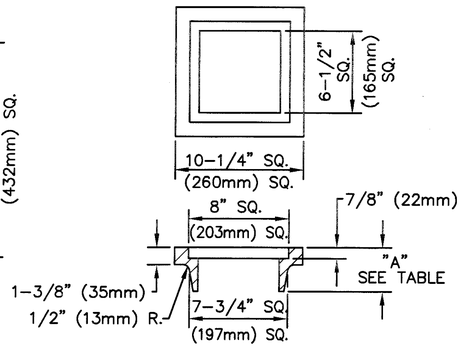
[326XSH4.DWG] PLOT 1:5 PLK 12/15/00



PLAN OF COVER



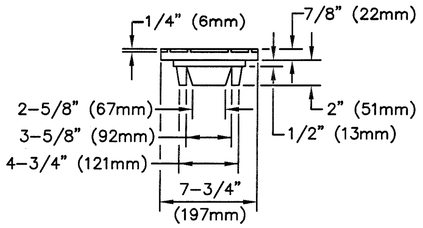
PLAN OF FRAME



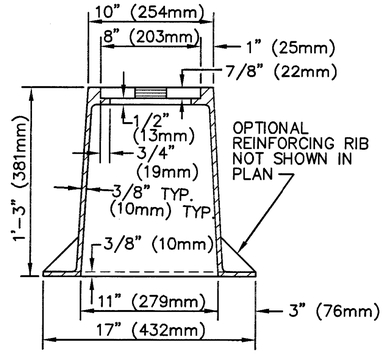
ADJUSTING RING

NOTE: ADJUSTING RING IS TO BE TACK WELDED TO THE FRAME BY AT LEAST TWO (2) POINTS, OF AN APPROVED METHOD.

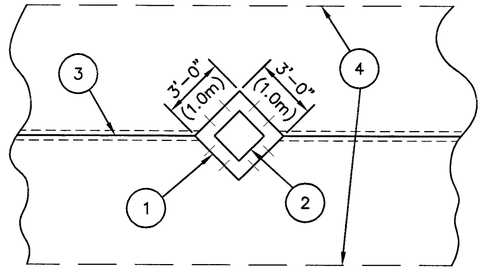
ADJUSTMENT HEIGHT	DIMENSION "A"	MINIMUM WEIGHTS
1-1/8" (29mm)	2" (51mm)	14-LBS. (6.4kg)
1-1/2" (88mm)	2-3/8" (60mm)	20-LBS. (9.1kg)
2-1/2" (64mm)	3-3/8" (86mm)	27-LBS. (12.2kg)
3" (76mm)	3-7/8" (98mm)	30-LBS. (13.6kg)
3-1/2" (89mm)	4-3/8" (111mm)	32-LBS. (14.5kg)



SIDE VIEW OF COVER



SECTION OF FRAME



1. MONUMENT ASSEMBLY BLOCK OUT. CONSTRUCTION JOINT PER BP-2.2 W/12" (305mm) LONG 1-1/4" (52mm) DIA. DOWELS.
2. MONUMENT BOX
3. TYPICAL LONGITUDINAL JOINT
4. 451 CONC. PAVEMENTS, AS PER PLAN

DETAIL "A"

TYPICAL BLOCK OUT IN RIGID PAVEMENT. (OMIT FOR FULL DEPTH FLEXIBLE PAVEMENT)

NOTES

CASTINGS SHALL MINIMALLY MEET THE REQUIREMENTS OF 604.02-711.12, A.S.T.M. A 48, CLASS 35 GRAY IRON OR 711.13 DUCTILE IRON.
THE ASSEMBLY SHALL BE ESSENTIALLY THE SAME AND EQUALLY AS STRONG AS THOSE HEREON.

MINIMUM WEIGHTS:
FRAME_____94 LBS. (42.6 kg)
COVER_____16 LBS. (7.3 kg)
PROVIDED THEY COMPLY WITH THE SPECIFICATIONS, DETAILS, DIMENSIONS AND MINIMUM WEIGHTS,
NEENAH_____NO.NF- 0000T04,
EAST JORDAN___NO.8365
OR APPROVED EQUAL CASTINGS ARE ACCEPTABLE.

BEARING AREAS SHALL BE FINISHED AS TO PROVIDE A FIRM AND EVEN SEAT. NO PROJECTION SHALL EXIST ON THE BEARING AREAS AND THE COVER SHALL SEAT IN ITS FRAME WITHOUT ROCKING.

PRIOR TO CONSTRUCTION OF PAVEMENT, THE FRAME SHALL BE SET TO GRADE IN SUCH A MANNER THAT WILL PREVENT ANY PAVEMENT MATERIAL FROM ENTERING THE CASTING.

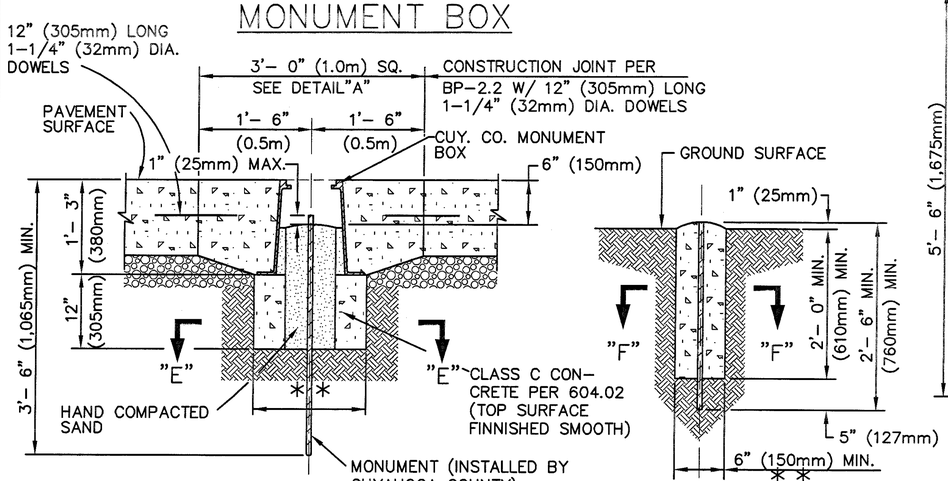
CONTACT CUYAHOGA COUNTY ENGINEER'S SURVEY OFFICE AT (216) 348-3846 AT LEAST TWO (2) WEEKS PRIOR TO THE DISTURBANCE OF ANY EXISTING MONUMENTS.

ALL MONUMENTS ARE TO BE SET UNDER THE DIRECTION OF A REGISTERED SURVEYOR. (REF. O.A.C. 4733-37-03)

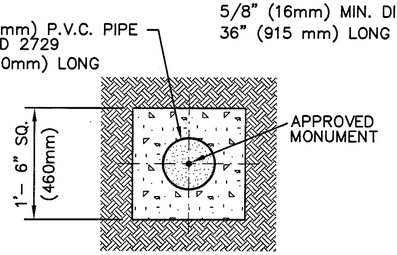
PAY ITEMS: (SEE PLAN NOTES)

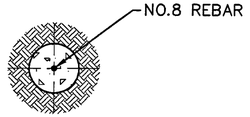
ITEM 604- CUYAHOGA COUNTY MONUMENT BOX
ITEM 604- CUYAHOGA COUNTY ROADWAY MONUMENT ASSEMBLY
ITEM 604- CUYAHOGA COUNTY RIGHT OF WAY MONUMENT
ITEM 604- CLEVELAND REGIONAL GEODETIC SURVEY MONUMENT ASSEMBLY.
ITEM 604- CUYAHOGA COUNTY MONUMENT BOX ADJUSTED TO GRADE. (ONLY WHEN EXISTING MONUMENT BOX CONFORMS TO MB-1C AND IS SUITABLE FOR REUSE)
ITEM 202- MONUMENT ASSEMBLY ABANDONED, C.R.G.S. MONUMENT

MONUMENT BOX

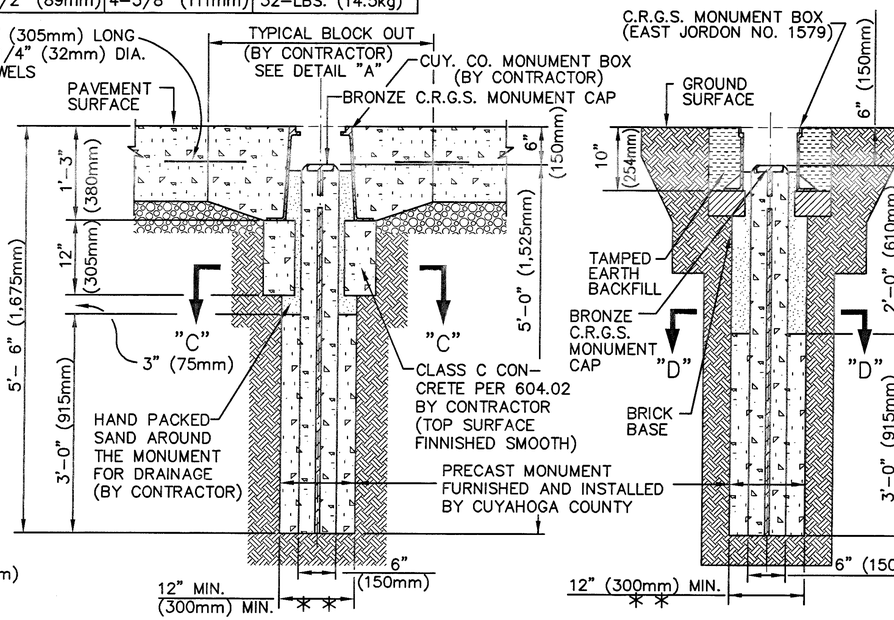


SECTION "E- E"
ROADWAY MONUMENT ASSEMBLY

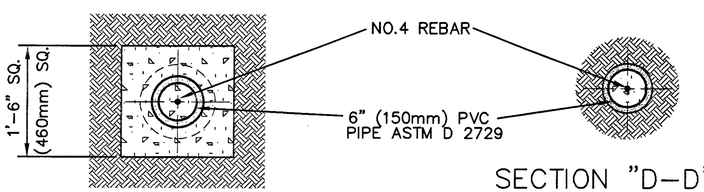




SECTION "F- F"
RIGHT OF WAY
MONUMENT



SECTION "C-C"
TYPE I
IN PAVEMENT



SECTION "D-D"
TYPE II
IN SOIL
(ENTIRELY FURNISHED AND
INSTALLED BY CUYAHOGA COUNTY)

CLEVELAND REGIONAL GEODETIC
SURVEY MONUMENT ASSEMBLY

LEGEND

- ITEM 499- CONCRETE, CLASS "C"
- SAND, ITEM 703.02- COMPACTED AS REQUIRED
- SUBBASE/AGGREGATE BASE PER THE PLANS.
- UNDISTURBED EARTH OR SUITABLE BACKFILL MATERIAL PER 604.04.

** UNDISTURBED BEARING AND/OR SUITABLY FIRM FOUNDATION PROVIDED IN ACCORDANCE WITH 604.04 AND TO THE SATISFACTION OF THE ENGINEER.

CUYAHOGA COUNTY ENGINEER

MONUMENT BOX & ASSEMBLIES

DATE
6-1-81
2-8-88
3-27-89
3-9-92
(*)

CONSTRUCTION DRAWING MB-1C

CALCULATED EPS
CHECKED RAB

MISCELLANEOUS DETAILS

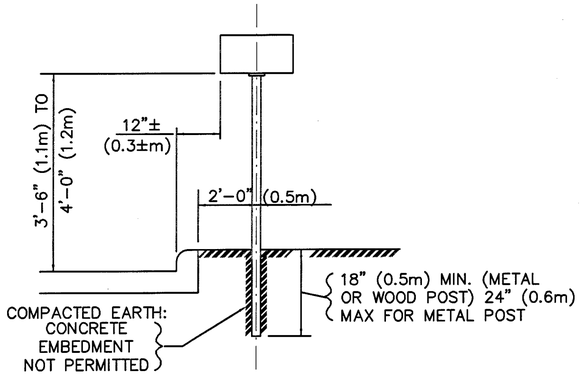
CUY-271-15.43

22
57

(328M005.DWG) PJK 12/14/00 1=1 IMP.

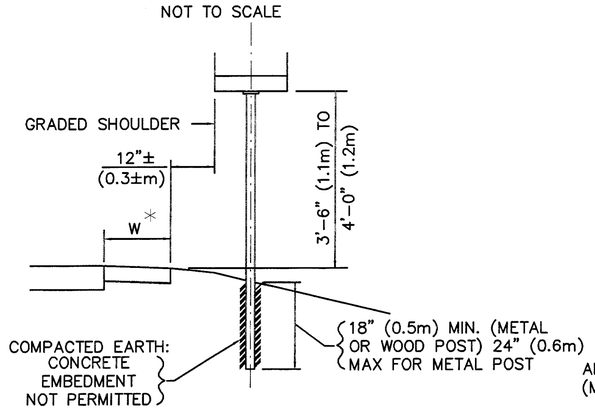
MAILBOX INSTALLATION DETAILS (CURBED PAVEMENT)

NOT TO SCALE



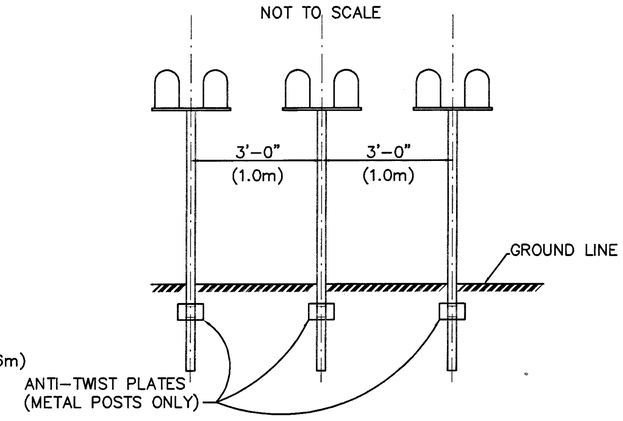
MAILBOX INSTALLATION DETAILS (PAVED SHOULDERS/MAILBOX TURNOUTS)

NOT TO SCALE



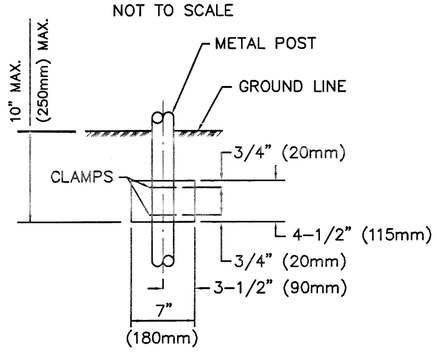
GROUP MAILBOX INSTALLATION

NOT TO SCALE



ANTI-TWIST PLATE

NOT TO SCALE

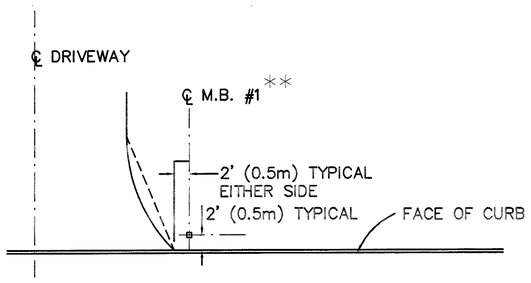


NOTES:

(1) END MAILBOX TURNOUT AT EDGE OF TREATED SHOULDER OR 1' (0.3m) WHICHEVER IS GREATER.

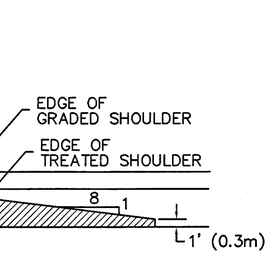
* WHERE POSTS ARE BEHIND GUARDRAIL, TURNOUT SHALL EXTEND TO FACE OF GUARDRAIL. WHERE NO GUARDRAIL IS REQUIRED, TURNOUT WIDTH SHALL BE 6' (1.8m) MINIMUM.

** ADD 3' (1.0m) FOR EACH ADDITIONAL SUPPORT.



MAILBOX LOCATION AT DRIVEWAYS

(CURBED PAVEMENT)

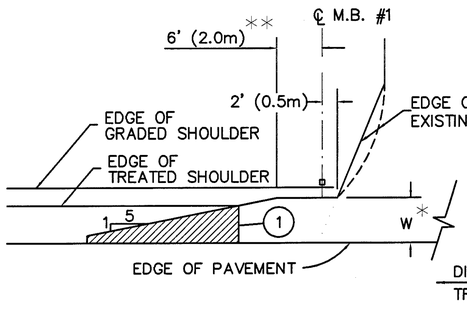


MAILBOX TURNOUT (NO DRIVEWAY)

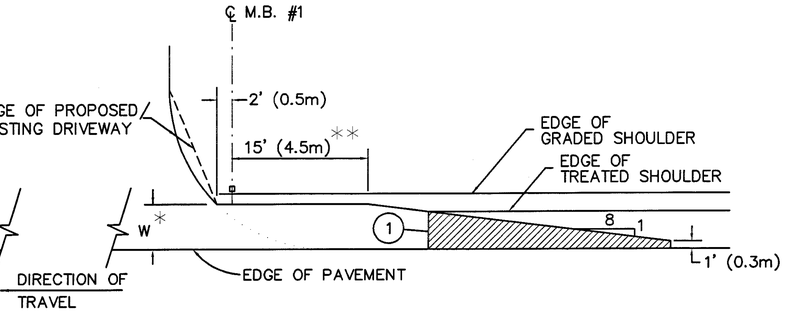
NOT TO SCALE

UNLESS OTHERWISE SHOWN ON THE PLAN OR DIRECTED BY THE ENGINEER, COMPOSITION OF THESE MAILBOX TURNOUTS SHALL TYPICALLY BE THE SAME AS THE EXISTING OR PROPOSED TREATED/PAVED SHOULDER AND SHALL MINIMALLY CONSIST OF 3" (75mm) ITEM 301 OR 6" (150mm) ITEM 304 ON A SUBGRADE COMPACTED IN ACCORDANCE WITH 203.13 (a).

MAILBOX ON FAR SIDE OF DRIVE



MAILBOX ON NEAR SIDE OF DRIVE



MAILBOX TURNOUTS AT DRIVEWAYS

NOT TO SCALE

(MAILBOX TURNOUTS SHALL BE CONSTRUCTED OF THE SAME MATERIAL USED IN THE DRIVE APRON AND COMBINED WITH THE DRIVE APPROACH CONSTRUCTION WHERE POSSIBLE.)

CUYAHOGA COUNTY ENGINEER

MAIL BOX FACILITIES

DATE 5-22-95

CONSTRUCTION DRAWING MD-7C

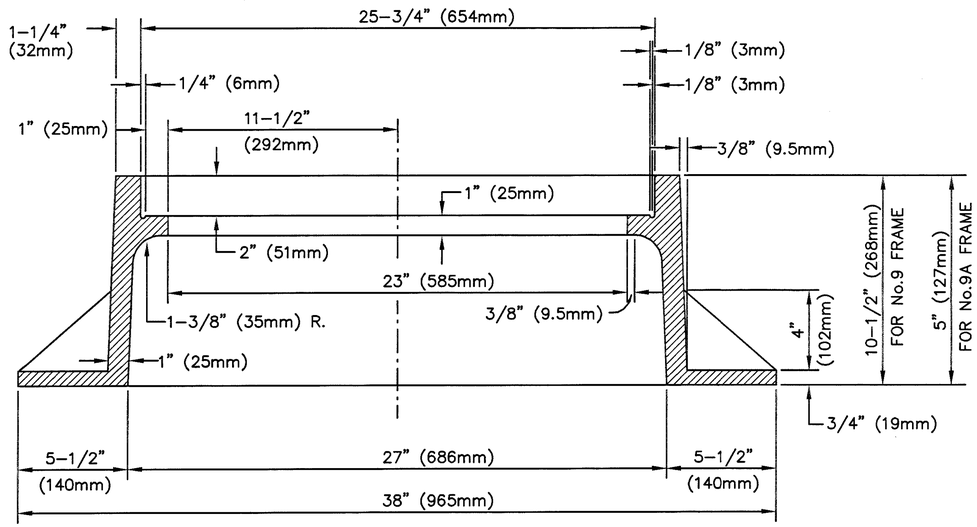
CALCULATED EPS CHECKED RAB

MISCELLANEOUS DETAILS

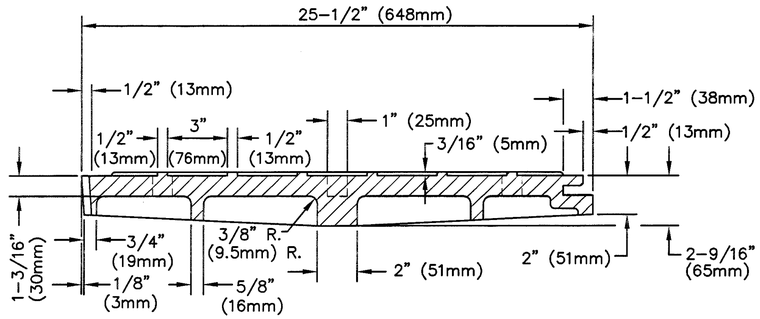
CUY-271-15.43

23/57

(326M008.DWG) PJK 12/15/00 1=1 IMP.



SECTION "A–A"



SECTION "B–B"

NOTES:

CASTINGS SHALL MINIMALLY MEET THE REQUIREMENTS OF ITEM 604–711.12, ASTM A 48, CLASS 35 GRAY IRON OR 711.13 DUCTILE IRON. THE DESIGN SHALL BE ESSEN–TIALLY THE SAME AND EQUALLY AS STRONG AS THOSE SHOWN HEREON.

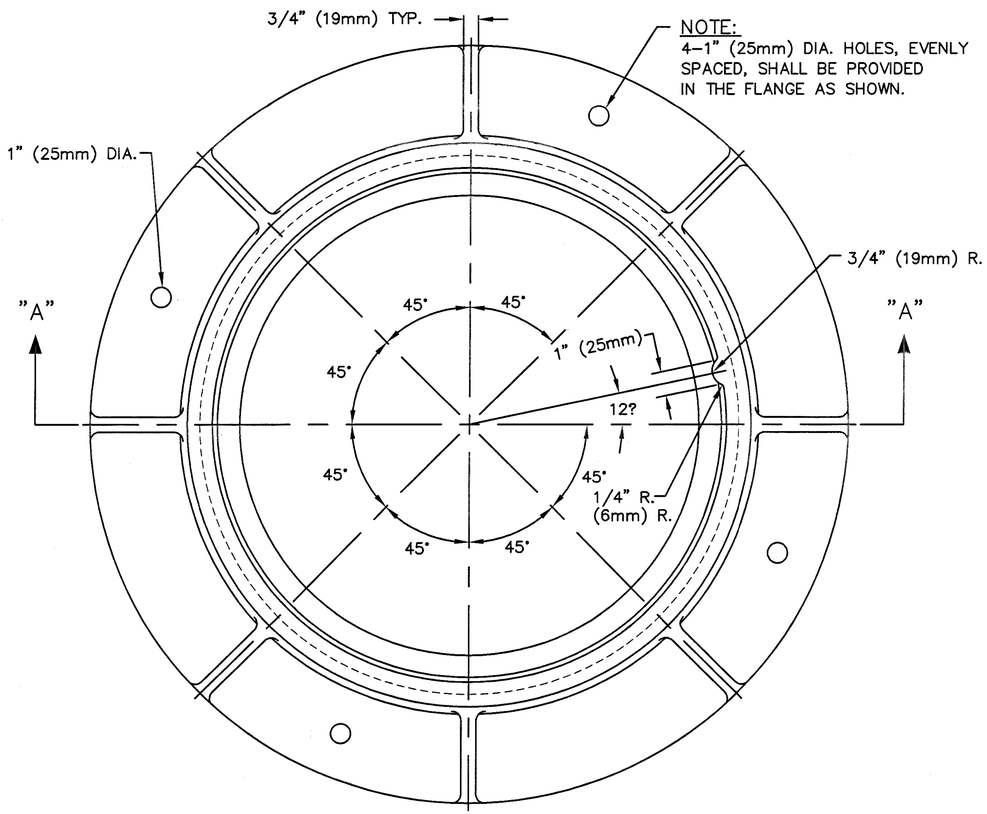
MINIMUM WEIGHTS:

NO. 9 FRAME	=	360 LBS. (164 kg)
NO. 9A FRAME	=	275 LBS. (125 kg)
COVER	=	200 LBS. (90 kg)

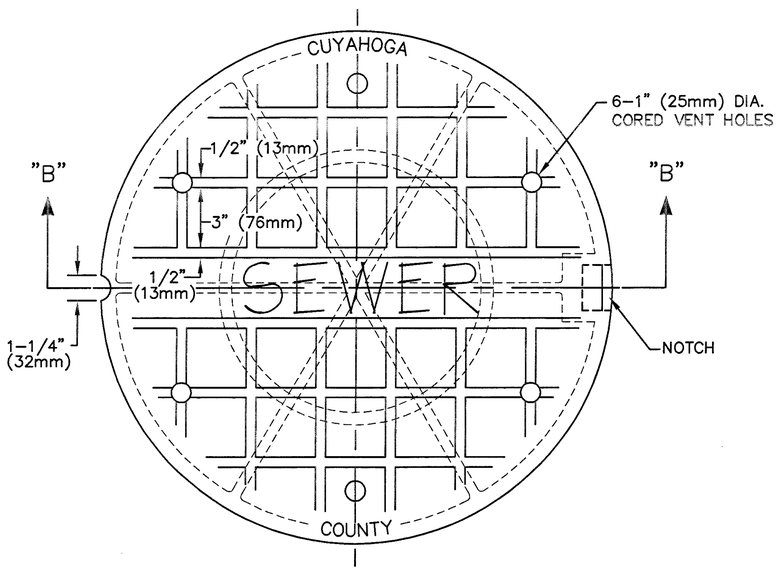
BEARING AREAS OF FRAME AND COVER SHALL BE SO FITTED AND FINISHED AS TO PROVIDE A FIRM AND EVEN SEAT FOR ALL PORTIONS OF THE COVER IN THE FRAME. NO PROJECTIONS SHALL EXIST ON BEARING AREAS OF EITHER CASTING AND THE COVER SHALL SEAT IN ITS FRAME WITHOUT ROCKING. EACH FRAME AND COVER SHALL BE FITTED, MATCHED AND MARKED BEFORE DELIVERY TO THE PROJECT.

LUG: THE LUG ON THE FRAME IS TO BE BETWEEN THE TOP OF THE FRAME AND THE TOP OF THE COVER SEAT ONLY AND SHALL BE CAST WITHOUT BATTER. THE LUG MAY BE UNDERCUT TO PERMIT PROPER MACHINING OF THE COVER SEAT.
PROVIDED THEY COMPLY WITH THE SPECIFICATIONS, DETAILS, DIMENSIONS AND MINIMUM WEIGHTS, ACCEPTABLE CASTING ASSEMBLIES ARE NEENAH No. R–1729, EAST JORDAN No. 1700 OR EQUAL WHEN USING No. 9 FRAME AND NEENAH No. R–1729–1, EAST JORDAN No. 1703 OR EQUAL WHEN USING No. 9A FRAME. No. 9A FRAMES MAY BE USED OUTSIDE PAVED AREAS WHEN COVER REQUIREMENTS SO WARRANT THEIR USE.

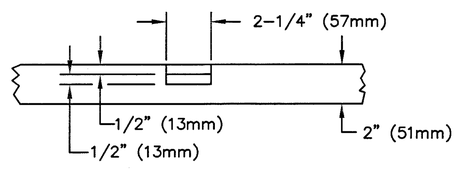
SANITARY COVERS: WHERE (IF) THIS CASTING ASSEMBLY IS SPECIFIED OR OTHERWISE USED FOR SANITARY SEWER MANHOLES, THE COVER SHALL BE CAST WITHOUT THE VENT HOLES AND THE PICK "NOTCH" SHOWN HEREON AND SHALL INCLUDE A SEALING GASKET AFFIXED TO THE BEARING SURFACE. BOLT–DOWN COVERS SHALL NOT BE REQUIRED OR USED UNLESS SPECIFIED IN THE PLANS.



PLAN DETAIL FOR No.9 & No.9A FRAMES



PLAN No. 28 COVER



NOTCH DETAIL

CUYAHOGA COUNTY ENGINEER

CUYAHOGA COUNTY MANHOLE CASTINGS

DATE
6–19–81
5–5–87
2–8–88
3–9–92
1–12–93
5–22–95

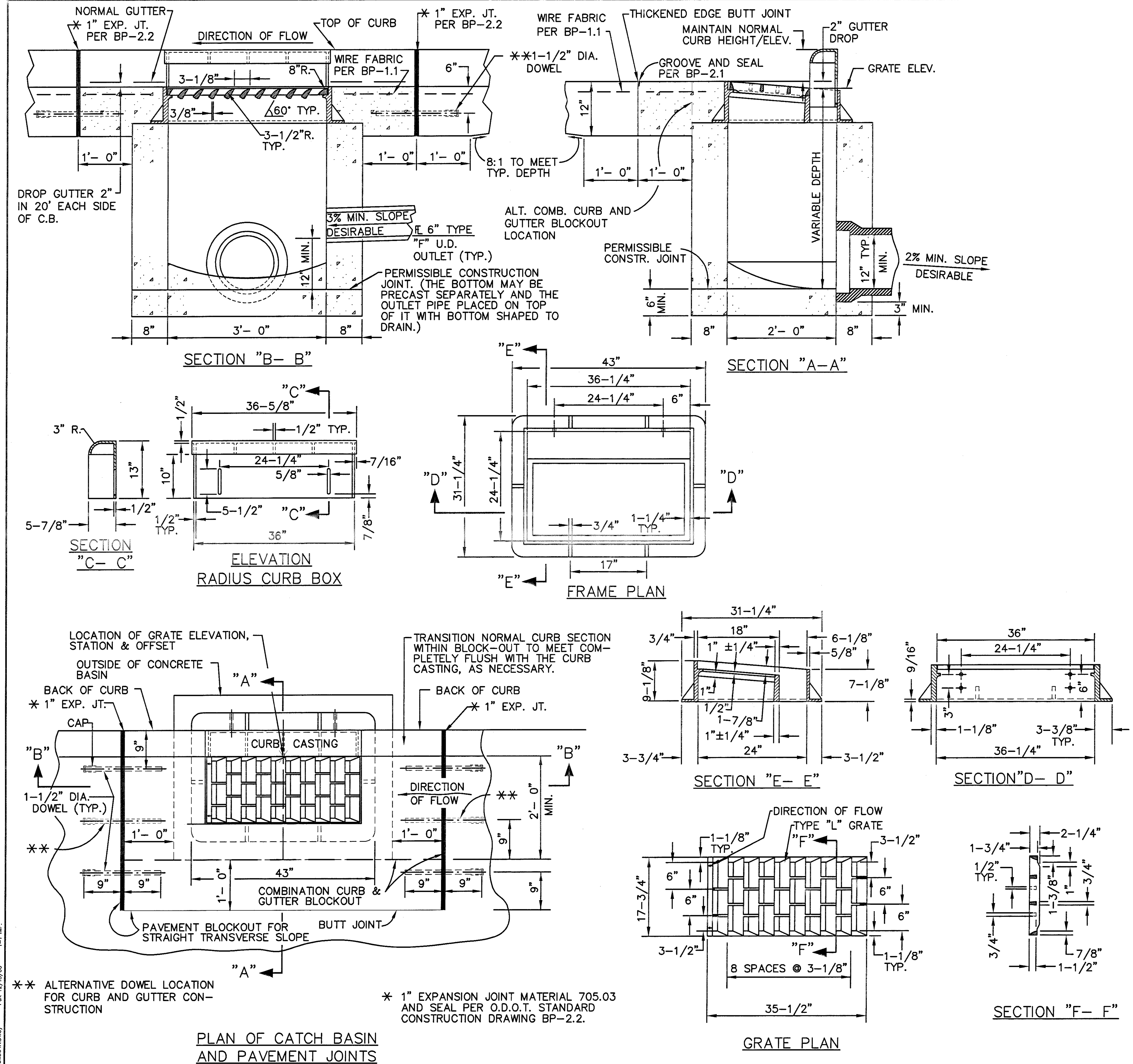
CONSTRUCTION DRAWING MH–10C

CALCULATED EPS | CHECKED RAB

MISCELLANEOUS DETAILS

CUY-271-15.43

(326M009H.DWG) PVK 12/15/00 1=1 IMP.



NOTES

CASTINGS SHALL MINIMALLY MEET THE REQUIREMENTS OF 604-711.12, A.S.T.M. A 48, CLASS 35 GRAY IRON OR 711.13 DUCTILE IRON. AFTER ACCEPTANCE, EXPOSED PARTS OF CURB CASTING TO BE THOROUGHLY CLEANED AND GIVEN ONE COAT OF ASPHALT VARNISH OR COAL TAR PITCH PAINT, AT THE SITE.

MINIMUM FRAME WEIGHT	= 330 LBS.
MINIMUM GRATE WEIGHT	= 130 LBS.
MINIMUM CURB CASTING WEIGHT	= 104 LBS.
TOTAL MINIMUM ASSEMBLY WEIGHT	= 564 LBS.

SUBJECT TO THE ABOVE, THE FOLLOWING OR APPROVED EQUAL CASTINGS ARE ACCEPTED:
NEENAH No. R-3246- CL AND EAST JORDAN No. 7035 WITH M6 GRATE.

BEARING AREAS OF FRAME AND GRATE SHALL BE SO FITTED AND FINISHED AS TO PROVIDE A FIRM AND EVEN SEAT FOR ALL PORTIONS OF THE GRATE IN THE FRAME. NO PROJECTIONS SHALL EXIST ON BEARING AREAS OF EITHER CASTING AND THE GRATE SHALL SEAT IN ITS FRAME WITHOUT ROCKING. EACH FRAME AND GRATE SHALL BE FITTED, MATCHED AND MARKED BEFORE DELIVERY TO THE PROJECT.

DOWELS: FOUR (4) 1-1/2"x18" DOWELS ARE REQUIRED FOR CONCRETE PAVEMENT OR GUTTER BLOCKOUT. SEE BP-2.2 FOR DOWEL DETAILS.

BRICK OR CONCRETE BLOCK SIDE WALLS, WHEN USED IN LIEU OF PRECAST CONCRETE, SHALL BE EIGHT (8) INCHES NOMINAL THICKNESS.

PRECAST CONSTRUCTION IS PERMITTED, (EXCEPT FOR THE BLOCK-OUT PAVEMENT) AND CONCRETE SHALL MEET THE REQUIREMENTS OF 706.13 WITH SIX PLUS OR MINUS TWO PERCENT (6±2%) AIR VOID CONTENT IN THE HARDENED CONCRETE. PRECAST WALLS SHALL HAVE A MINIMUM THICKNESS OF SIX (6) INCHES AND REINFORCING SHALL BE SUFFICIENT TO PERMIT SHIPPING AND PLACEMENT WITHOUT DAMAGE.

BLOCKOUT: WHERE EITHER SIDE OF THE CATCH BASIN BLOCKOUT IS ALIGNED WITH A CONTRACTION JOINT (AS IS TYPICALLY DESIRABLE), THE CONTRACTION JOINT SHALL BE THICKENED AND CONTINUED IN KIND WITHIN THE LIMITS OF THE BLOCKOUT. EXCEPT AS SPECIFIED ABOVE, BLOCKOUTS SHALL BE LOCATED NO CLOSER THAN FIVE (5) FEET FROM THE NEAREST PAVEMENT JOINT.

WHERE THE SPECIFIED CATCH BASIN WORK REQUIRES THE CONSTRUCTION/RECONSTRUCTION OF BLOCKOUTS IN EXISTING PAVEMENT, THE BLOCKOUTS SHALL CONFORM, AS CLOSELY AS POSSIBLE, TO THE DETAILS SHOWN HEREON EXCEPT THAT THE DOWELS SHALL BE PLACED/REPLACED IN ACCORDANCE WITH THE "SECTION-TYPE X" JOINT, PER CUYAHOGA COUNTY CONSTRUCTION DRAWING BP-2.5C ("SECTION-TYPE Y" JOINT WHERE BLOCKOUT JOINT IS AT AN EXISTING CONTRACTION OR HINGE JOINT LOCATION). PAYMENT SHALL BE INCLUDED IN THE ITEM 604-CATCH BASIN, CUYAHOGA COUNTY 3-C WORK SPECIFIED; AND/OR AS DIRECTED BY THE ENGINEER.

A CLASS "C" CONCRETE APRON, THE SIZE OF THE TWO (2) FOOT GUTTER BLOCKOUT, SHALL BE CAST IN PLACE IN FLEXIBLE PAVEMENT AND NO DOWELS ARE REQUIRED.

ANY/ALL EXTRA MATERIAL, LABOR AND EQUIPMENT REQUIRED TO CONSTRUCT THE PAVEMENT, CURB, SUBBASE, SUBGRADE AND BACKFILL WITHIN THE BLOCKOUT AREAS, IN ACCORDANCE WITH THE APPLICABLE PROVISIONS OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS, SHALL BE INCLUDED IN THE UNIT PRICE BID, PER EACH, FOR THE ITEM 604-CATCH BASIN, CUYAHOGA COUNTY NO. 3C WORK SPECIFIED.

THIS CATCH BASIN IS NOT INTENDED FOR USE WITH MOUNTABLE TYPE CURBS NOR SHOULD IT BE LOCATED WITHIN A DRIVE APRON. (SEE O.D.O.T. STANDARD CONSTRUCTION DRAWING No. CB- 6).

CUYAHOGA COUNTY ENGINEER

CATCH BASIN

DATE
7-15-80
5-5-87
2-8-88
3-9-92
5-22-95

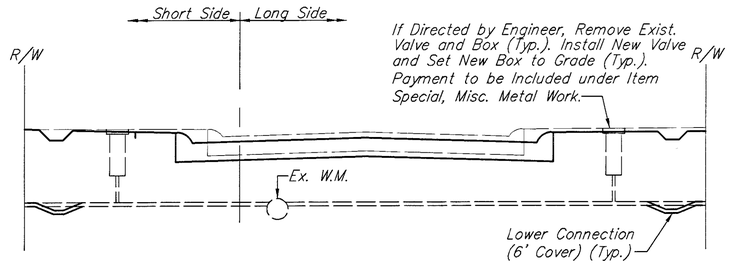
CONSTRUCTION DRAWING CB-3C

CALCULATED EPS CHECKED RAB

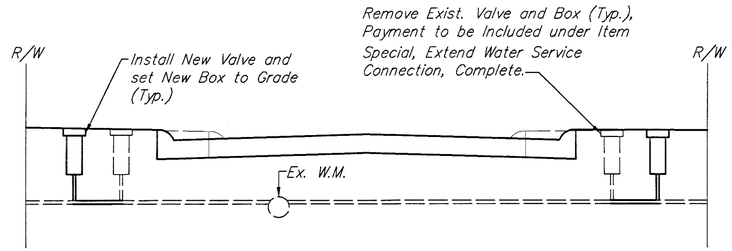
MISCELLANEOUS DETAILS

CUY-271-15.43

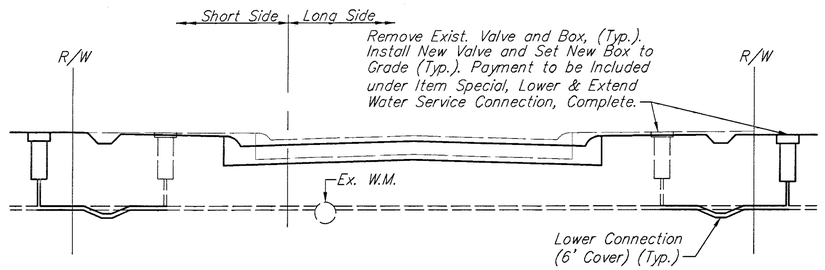
(326MD04H.DWG) PJK 12/15/00 1=1 IMP.



ITEM SPECIAL – LOWER WATER SERVICE CONNECTION, SHORT (LONG) SIDE COMPLETE



ITEM SPECIAL – EXTEND WATER SERVICE CONNECTION, COMPLETE



ITEM SPECIAL – LOWER & EXTEND WATER SERVICE CONNECTION SHORT (LONG) SIDE COMPLETE

CALCULATED EPS
CHECKED RAB

MISCELLANEOUS DETAILS

CUY-271-15.43

26
57

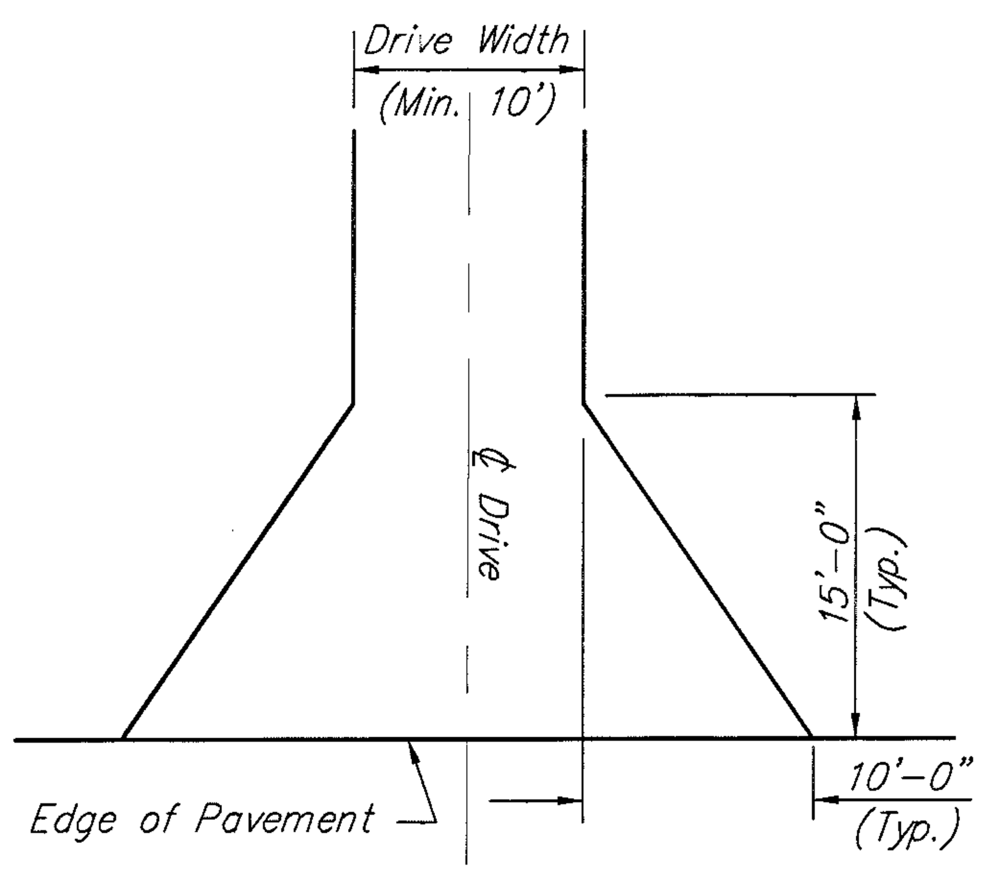
[32MISC01.DWG] P.W. 12/15/00 PLOT 1:1 IMP.

ESTIMATED QUANTITIES

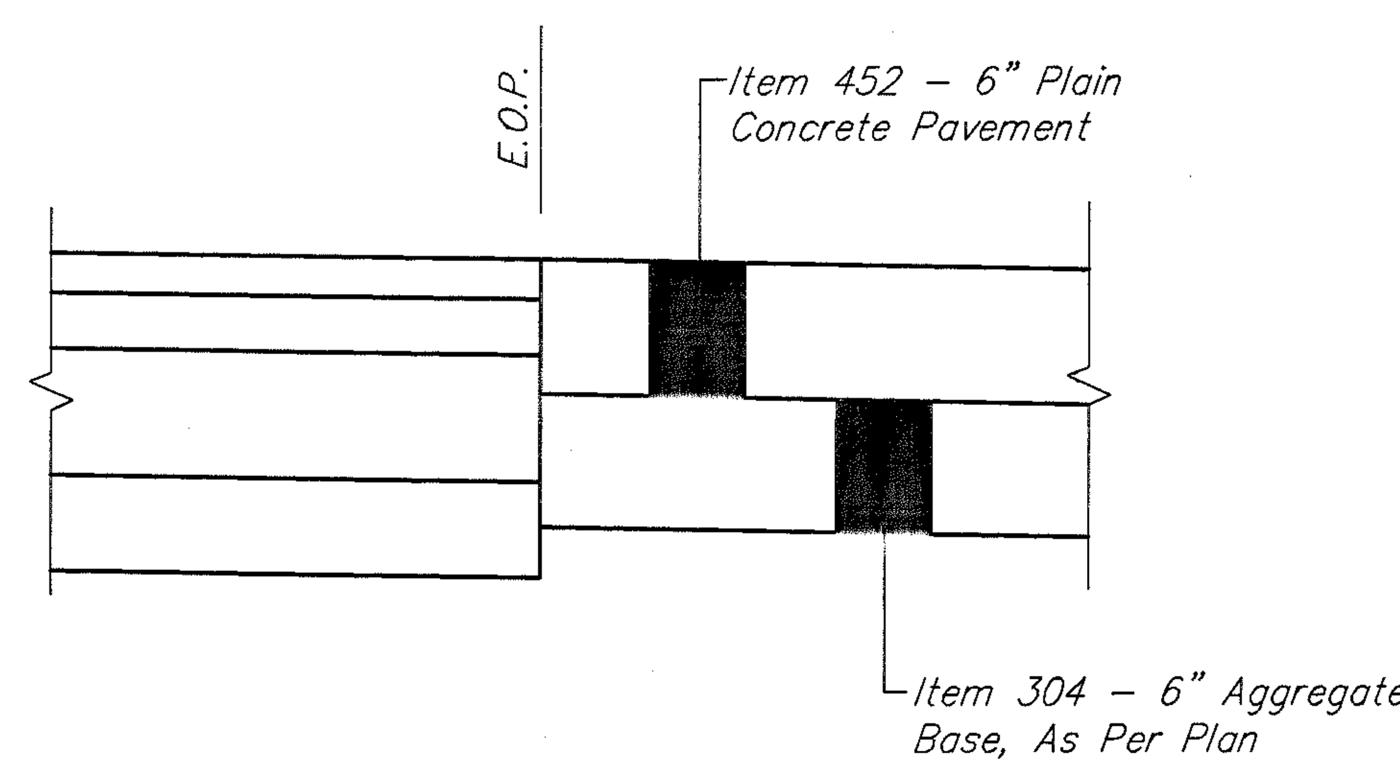
REFERENCE	STATION	SIDE	TYPE	EXISTING APRON	EXISTING DRIVE	PROPOSED APRON	PROPOSED DRIVE	EXISTING DRIVE WIDTH	LENGTH TO MATCHING POINT	PROPOSED DRIVE WIDTH	202 PAVEMENT REMOVED	203 EXCAVATION, NOT INCLUDING EMBANKMENT CONSTRUCTION	203 EMBANKMENT	304 AGGREGATE BASE, AS PER PLAN	408 BITUMINOUS PRIME COAT (0.4 GAL./SQ.YD.)	448 ASPHALT CONCRETE, SURFACE COURSE, TYPE 1, PG-64(DRIVEWAYS)	452 6" PLAIN CONCRETE PAVEMENT	REMARKS
								Lin. Ft.	Lin. Ft.	Lin. Ft.	Sq. Yd.	Cu. Yd.	Cu. Yd.	Cu. Yd.	Gal.	Cu. Yd.	Sq. Yd.	
HIGHLAND ROAD																		
DR-1	4+80	Rt.	Residential	Asphalt	Asphalt	Asphalt	Asphalt	16.0	20.0	16.0	--	11	--	8	20	3	--	
DR-2	5+32	Lt.	Residential	Concrete	Concrete	Concrete	Concrete	16.0	30.58	16.0	55	16	--	12	--	--	70	
DR-3	5+38	Rt.	Residential	Concrete	Concrete	Concrete	Concrete	15.8	49.0	15.8	102	44	--	17	--	--	101	
DR-4	5+97	Lt.	Residential	Asphalt	Gravel	Asphalt	Asphalt	13.0	22.0	13.0	--	2	--	8	20	3	--	
DR-5	6+29	Lt.	Residential	Asphalt	Concrete	Asphalt	Concrete	12.0	27.0	12.0	14	1	--	8	13	2	16	
DR-6	6+45	Rt.	Residential	Asphalt	Concrete	Asphalt	Concrete	12.0	22.0	12.0	11	1	--	10	19	3	11	
DR-7	7+00	Rt.	Residential	Asphalt	Asphalt	Asphalt	Asphalt	12.0	32.0	12.0	--	3	--	12	29	4	--	
DR-8	7+43	Lt.	Residential	Asphalt	Gravel	Asphalt	Asphalt	12.0	39.0	12.0	--	3	8	13	30	5	--	
DR-9	12+13	Rt.	Residential	Gravel	Gravel	Asphalt	Asphalt	10.0	50.0	10.0	--	11	--	12	29	4	--	
DR-10	12+32	Lt.	Residential	Concrete	Concrete	Concrete	Concrete	13.7	31.0	13.7	89	5*	--	11	--	--	32	
DR-11	13+00	Rt.	Residential	Concrete	Concrete	Concrete	Concrete	10.8	61.0	10.8	106	11	--	15	--	--	91	
DR-12	14+18	Lt.	Residential	Gravel	Concrete	Asphalt	Concrete	11.0	43.0	11.0	29	13	--	12	14	2	33	
DR-13	14+63	Rt.	Residential	Gravel	Gravel	Asphalt	Asphalt	12.0	21.0	12.0	--	10	--	7	18	3	--	
Total											406	131	8	145	192	29	354	

*Remove existing asphalt overlay (2"±) from existing drive to permit proposed drive subbase to set on top of existing drive subbase.

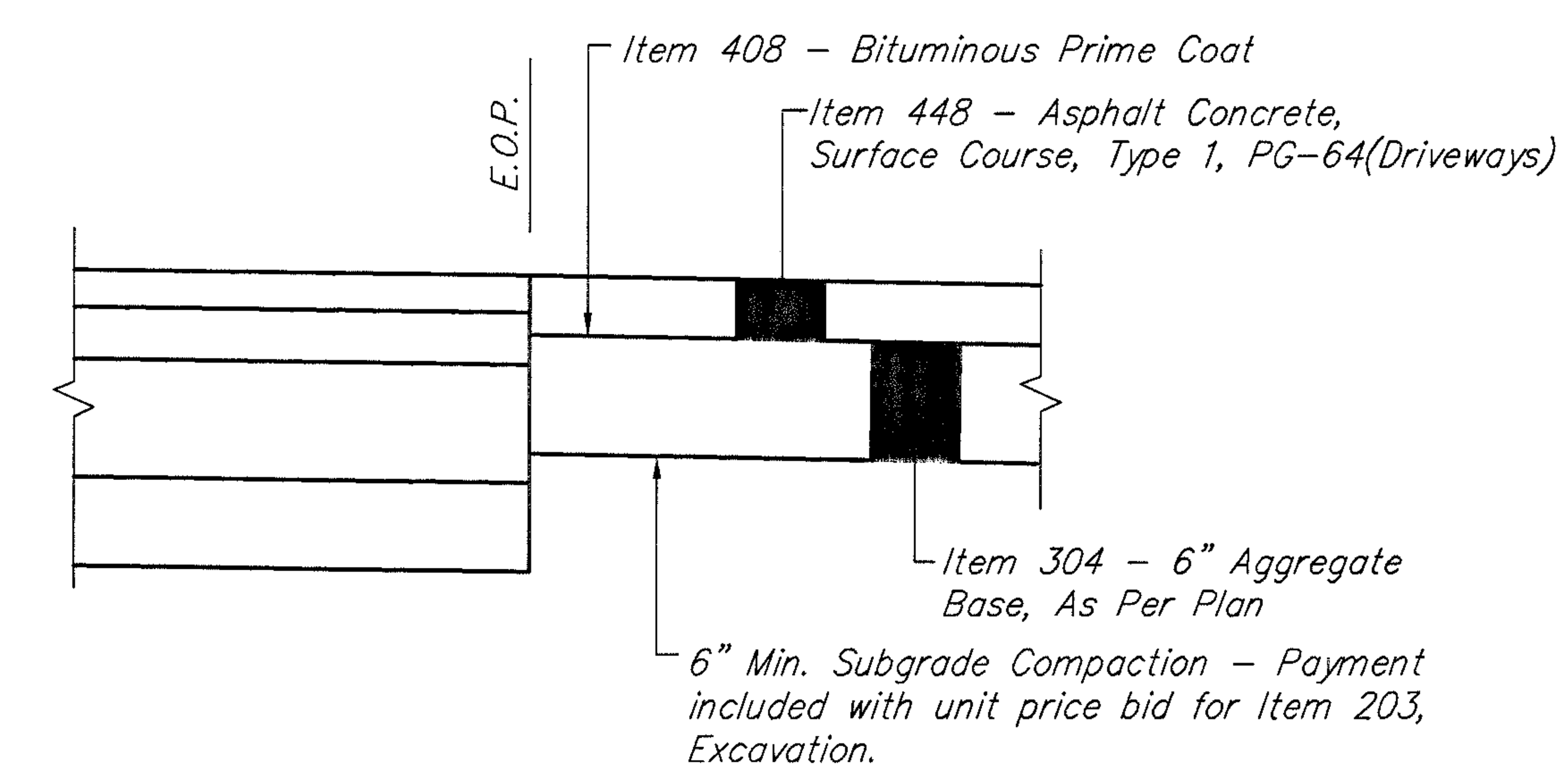
Notes:
For additional details and notes see Standard Construction Drawing BP – 4.1



HIGHLAND ROAD
RESIDENTIAL DRIVE WITH UNCURBED ROADWAY



HIGHLAND ROAD DRIVE DETAILS
CONCRETE APRONS OR DRIVES



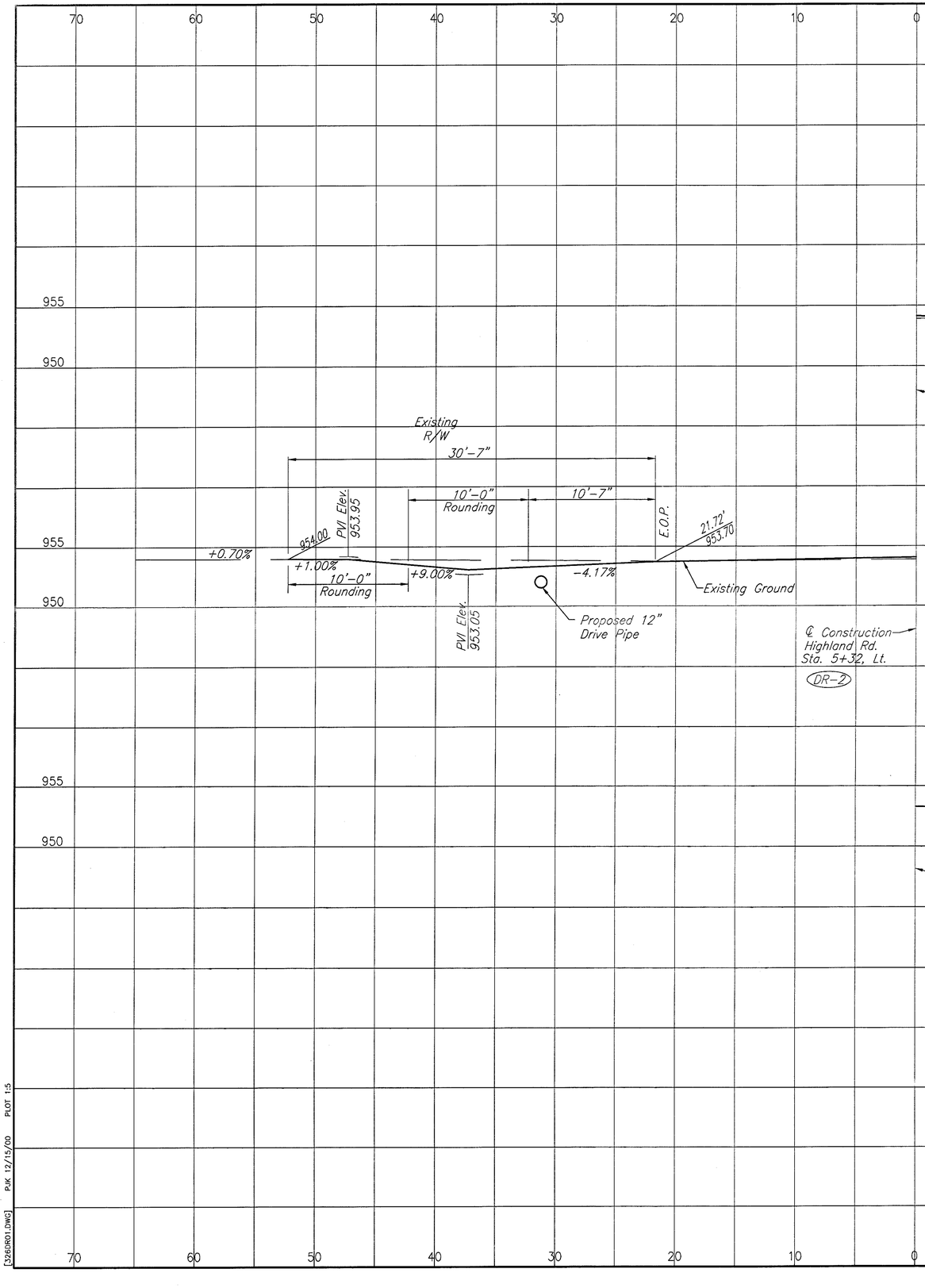
HIGHLAND ROAD DRIVE DETAILS
FLEXIBLE APRONS OR DRIVES

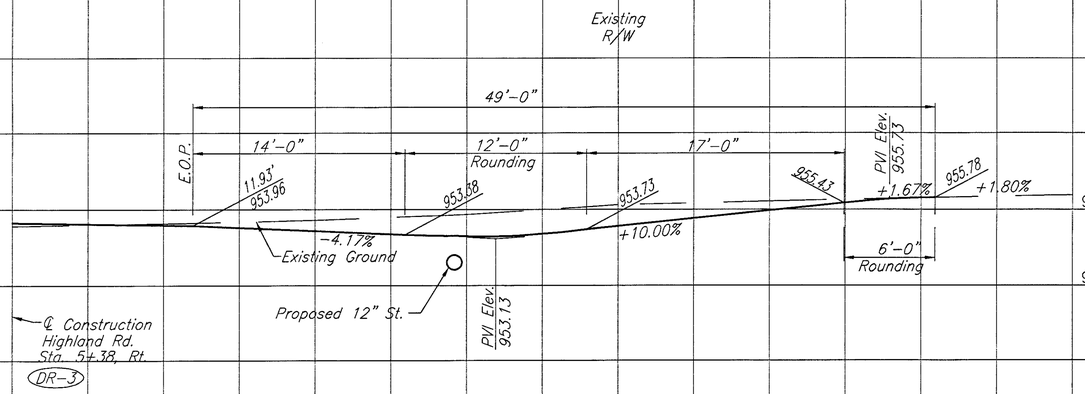
CALCULATED PLN
CHECKED EPS

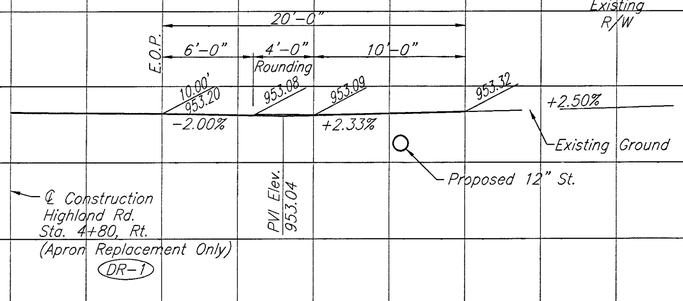
DRIVE QUANTITIES AND DETAILS

CUY-271-15.43

[3590D002.DWG] RDJ 11/19/99 PLOT 1:1 IMP.







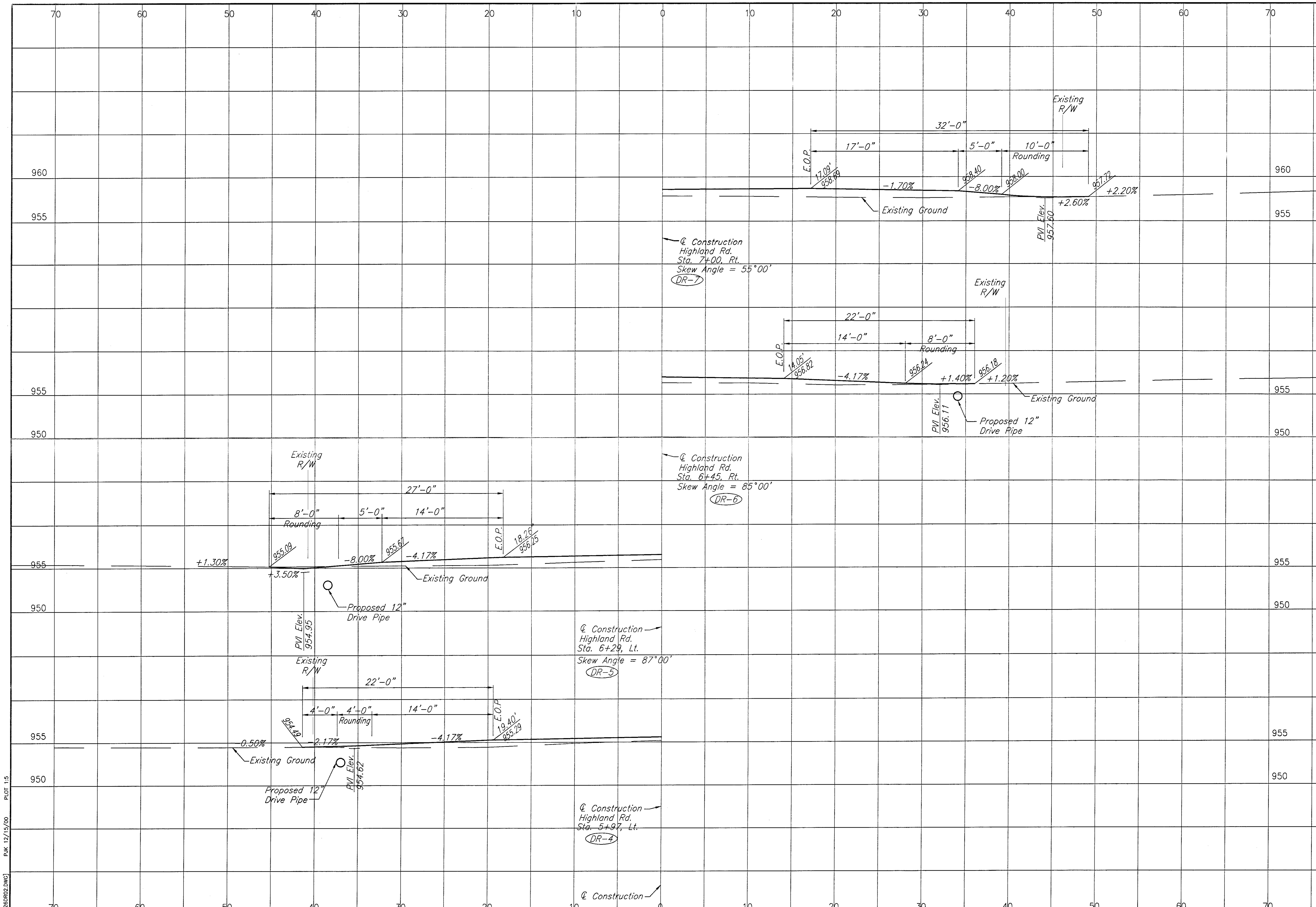
CALCULATED EPS
CHECKED RAB

DRIVEWAY PROFILES

CUY-271-15.43

28
57

PLOT 1:5
PJK 12/15/00
[326DR01.DWG]



CALCULATED EPS CHECKED RAB

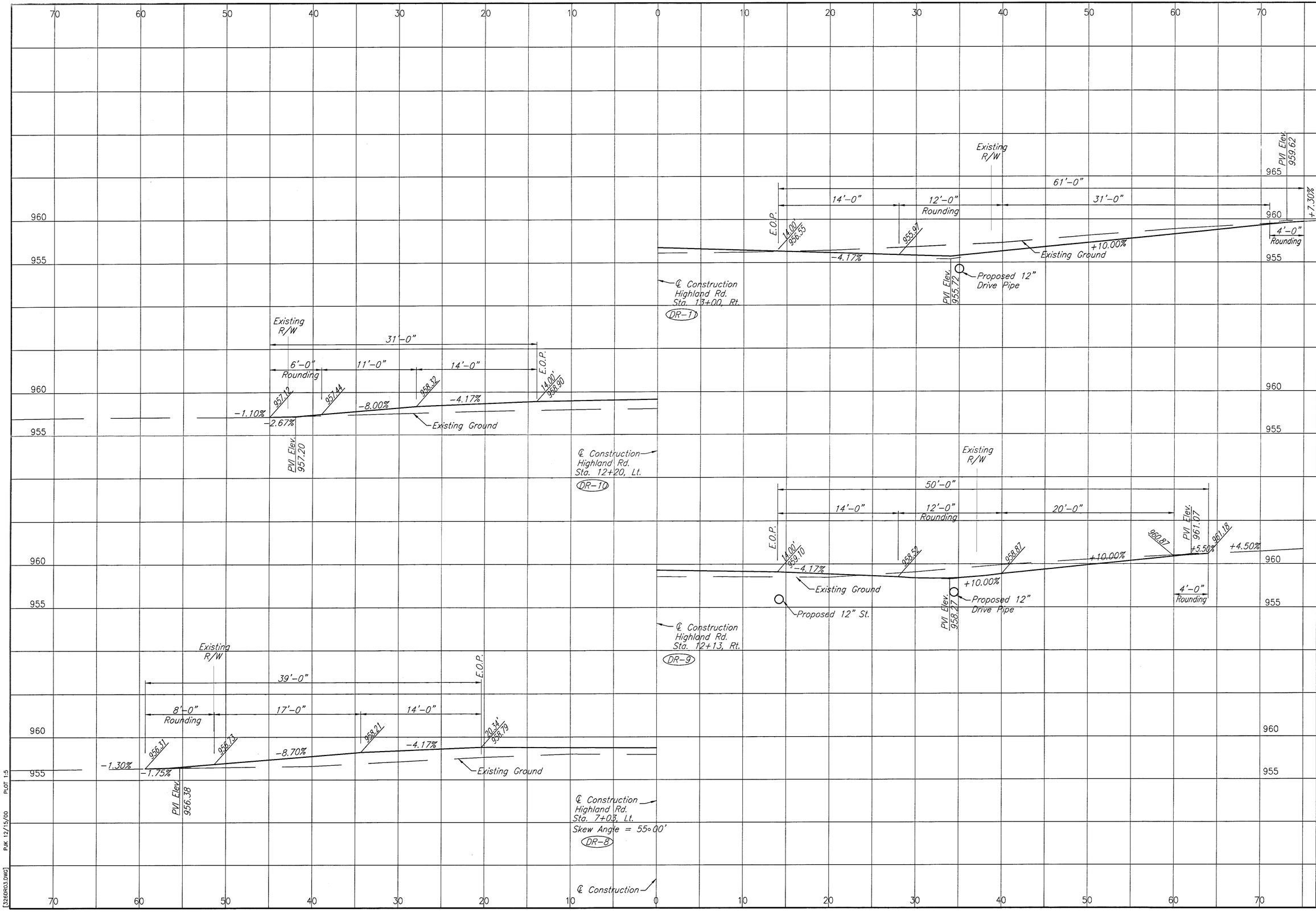
DRIVEWAY PROFILES

CUY-271-15.43

[326DR02.DWG] PJK 12/15/00 PLOT 1:5

CALCULATED EPS
CHECKED RAB

DRIVEWAY PROFILES



CUY-271-15.43

30
57

PLOT 1:5
PJK 12/15/00
[326ROG3.DWG]

CALCULATED EPS
CHECKED RAB

DRIVEWAY PROFILES

CUY-271-15.43

PLOT 1:5
PJK 12/15/00
[326DR04.DWG]

955
950

Existing R/W
21'-0"
3'-0"
10'-0" Rounding
8'-0"
952.22
E.O.P.
952.09
952.26
952.86
+7.10%
-4.17%
+7.46%
Existing Ground
PVI Elev. 951.89
℄ Construction Highland Rd. Sta. 14+63, Rt. (Apron Replacement Only)
DR-13

Existing R/W
43'-0"
11'-0"
12'-0" Rounding
14'-0"
PVI Elev. 954.64
954.34
953.24
952.85
E.O.P.
953.53
+3.10%
-5.00%
954.79
6'-0" Rounding
+10.00%
-3.44%
Existing Ground
PVI Elev. 952.64
Proposed 12" Drive Pipe
℄ Construction Highland Rd. Sta. 14+18, Lt. Skew Angle = 76°00'
DR-12
℄ Construction

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

GENERAL NOTES

TRAFFIC CONTROL

TRAFFIC CONTROL STANDARD CONSTRUCTION DRAWINGS

References to Supplemental Specification 857, 858, 861, 957, 958 and 961 on the traffic control standard construction drawings in these plans shall be considered to read as respective references to Items 630, 633, 730, 731, and 733.

LAYOUT OF PAVEMENT MARKINGS

The Contractor shall be responsible for all the layout and locations of the various pavement markings.

REMOVAL OF EXISTING ITEMS

All 630 removal items not specifically including storage or re-erection shall become the property of the Contractor. Removal and disposal shall be the responsibility of the Contractor.

EXIT NUMBER PANELS (GEP SERIES) ON SIGNS

Exit number panels (GEP Series) on overhead or ground mounted signs shall be placed to the top right or left of the major sign as shown on the elevation views. Location of the exit number panel is based on the location of the exit ramp in relation to the thru traffic movement (right side for right-hand exits, left side for left-hand exits, orientated with the direction of traffic). All signs which have exit number panels shall be offset as stated above.

ITEM 630 - SIGN LOCATIONS

Sign locations of existing and proposed signs on the plans are approximate. The Contractor prior to erection of all sign supports (posts, beams and overheads) shall stake the proposed location, including offset. Overhead support locations shall also include foundation elevations. The Engineer shall approve all support locations and may adjust the location to correct slope and subsurface difficulties, sign sight distance obstructions, improve safety and eliminate overhead obstacles.

Payment for staking shall be incidental to the various sign support items.

ITEM 631 - REMOVAL OF SIGN WIRING AND DISPOSAL

This item of work shall consist of the removal and disposal of the existing sign wiring and hardware, back to the disconnect switch box. The electrical power shall be safety terminated within the switch enclosure. Hardware includes the rigid or flex conduit, junction boxes, ballasts, clamps, elbows, and miscellaneous hardware. All threaded pipe couplings or nipples shall be covered with threaded end caps.

Payment for this item shall be paid per each of Item 631 - Removal of Sign Wiring and Disposal which payment shall include all necessary labor, material, and equipment required to perform the work noted herein.

ITEM 630 - REMOVAL OF GROUND MOUNTED SIGN AND STORAGE, AS PER PLAN

The Contractor shall remove the decorative "Highland Heights" sign and its 3" x 5" wood post support at Sta. 5+01, Lt., Highland Road. He shall store the sign and post on the project site to be picked up by City of Highland Heights Forces.

Payment for the above work shall be made at the contract unit price bid per each of Item 630-Removal of Ground Mounted Sign and Storage, As Per Plan which price shall include the removal and storage of the sign and post support, labor, equipment and incidentals to complete the work.

ITEM 631 - SIGN SERVICE, AS PER PLAN

This item of work shall include the installation of a #4 AWG 5000 V distribution cable near the Highland Road bridge from the existing pull box at Sta. 70+60, 145' Rt. ℄ I-271 to the new disconnect switch. The Contractor shall use the existing conduit riser installed in CUY-271-14.85, LAK-271/90-0.00/2.76 Project. Work shall include the splicing of the #4 AWG 5000 V distribution cable located in the existing pull box at Sta. 70+65, 54' Rt. ℄ I-271 into the existing lighting circuit HIG1.

Payment for this item shall be paid at the contract unit price bid per each of Item 631-Sign Service, As Per Plan, which payment shall include all necessary labor, material, and equipment required to complete the work.

TRAFFIC CONTROL

ITEM 631 - BALLAST ENCLOSURE, REMOTE BALLAST

Ballast enclosures shall be furnished and installed as detailed in the Plans. The enclosure shall be mounted on brackets which are separately furnished for overpass structures.

Enclosures shall be weatherproof NEMA Type 4 in accordance with the plan details, fabricated of 0.06 inch steel galvanized in accordance with 711.02. The front cover shall be removable and bear a warning sign conforming to 713.19, paragraph 16D. Conduit fittings and attachment hardware shall be furnished with the enclosure. Enclosures shall contain a steel panel complying with 713.19, paragraph 16E for installing terminal blocks and busbars, rated at 600 volts and provided with marker strips and capable of terminating the wire gage used. Ballasts shall be arranged in the enclosure in the same relative position as their associated luminaire on the sign support structure.

ITEM 631 - REMOVAL OF DISCONNECT SWITCH ENCLOSURE AND DISPOSAL

Incidental to the removal of disconnect switch enclosure, the disconnect switch shall be removed and disposed of by the Contractor.

ITEM 631 - REMOVAL OF LUMINAIRE AND DISPOSAL

Incidental to the removal of the luminaire, the wiring, ballast, and the mounting bracket assembly shall be removed and disposed of by the Contractor.

ITEM 631 - ENCLOSURE PADLOCKS

Disconnect switch enclosures furnished in accordance with Specification 631.08 shall include a padlock equal to Master No. 48KA or Wilson Bohannon 660, with lock body of bronze or brass, and keying in accordance with the foregoing specification.

ITEM 631 - REMOVAL OF SIGN SERVICE AND DISPOSAL, AS PER PLAN

This item of work shall consist of the removal and disposal of the existing sign service to existing sign No. 75 located on the Highland Road bridge at Sta. 70+70 NB I-271. Included in this item of work is the removal of the sign wiring and the existing conduit (not the 3" conduit installed in the CUY-271-14.85, LAK-271/90-0.00/2.76 Project) from the disconnect switch mounted on the Highland Road bridge to the existing pull box located at Sta. 70+60±, 145' Rt. ℄ I-271. The Contractor shall also abandon the power cable from the pull box at Sta. 70+60± 145' Rt. to the power pole located at Sta. 71+50±, 200" Rt. ℄ I-271 and remove the existing power pole. The power service from the existing pole at Sta. 71+20±, 220' Rt. ℄ I-271 to the existing pole at Sta. 71+50±,200' Rt. ℄ I-271 shall be removed by others.

Payment for this item shall be paid at the contract unit price bid per each of Item 631-Removal of Sign Service and Disposal, As Per Plan, which payment shall include all necessary labor, material, and equipment required to complete the work.

OVERPASS STRUCTURE MOUNTED SIGN SUPPORT

All hardware, including expansion bolts shall be stainless steel. The Contractor shall use new 6 1/2" x 1/2" stainless steel threaded anchor rods with a minimum embedment of 4 1/4". The grout and holes shall be as per Supplemental Specification 852 and CMS 705.20. Grout material shall be limited to epoxy resin only.

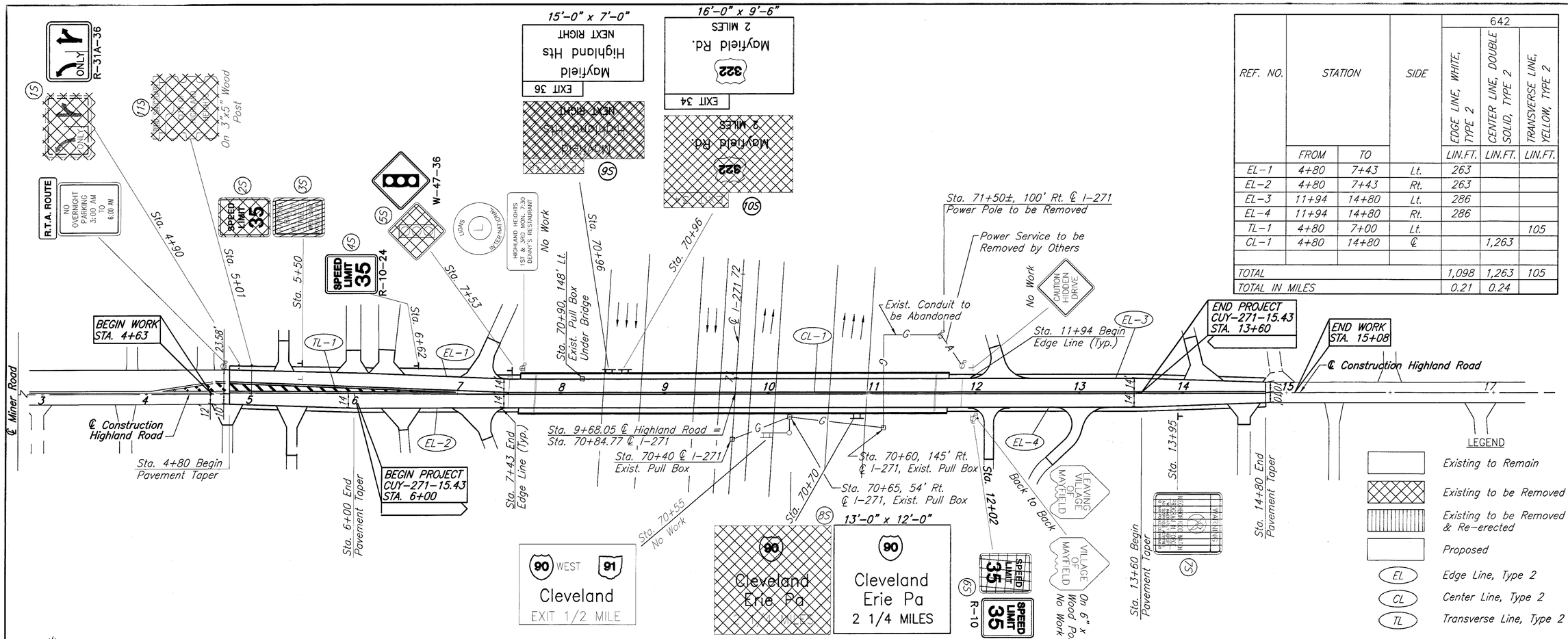
Payment for the above material and work shall be included in the unit price bid per each for the pertinent overpass supports.

SHEET NUMBER	COST PARTICIPATION	ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	AS PER PLAN REF. SHEET
34	NORMAL PARTICIPATION						
						TRAFFIC CONTROL	
67	67	630	03100	67	LIN.FT.	GROUND MOUNTED SUPPORT, NO. 3 POST	
14	14	630	04100	14	LIN.FT.	GROUND MOUNTED SUPPORT, NO. 4 POST	
3	3	630	77000	3	EACH	OVERPASS STRUCTURE MOUNTED SIGN SUPPORT, TYPE TC-18.24	
27	27	630	80102	27	SQ.FT.	SIGN, FLAT SHEET, TYPE G	
463	463	630	80204	463	SQ.FT.	SIGN, EXTRUSHEET, TYPE G	
4	4	630	85000	4	EACH	REMOVAL OF GROUND MOUNTED SIGN AND STORAGE	
1	1	630	85001	1	EACH	REMOVAL OF GROUND MOUNTED SIGN AND STORAGE, AS PER PLAN	32
2	2	630	85100	2	EACH	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION	
4	4	630	86002	4	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	
5	5	630	86310	5	EACH	REMOVAL OF STRUCTURE MOUNTED SIGN AND DISPOSAL	
3	3	630	89806	3	EACH	REMOVAL OF OVERHEAD SIGN SUPPORT AND DISPOSAL, TYPE TC-18.24	
6	6	202	98100	6	EACH	REMOVAL MISC.:LUMINAIRE SUPPORT ASSEMBLY AND DISPOSAL	
2	2	631	70100	2	EACH	BALLAST WIRING ENCLOSURE, TYPE B	
1	1	631	84001	1	EACH	SIGN SERVICE, AS PER PLAN	32
3	3	631	84400	3	EACH	SIGN WIRED, OVERPASS STRUCTURE MOUNTED	
3	3	631	85100	3	EACH	DISCONNECT SWITCH WITH ENCLOSURE, TYPE X	
4	4	631	87200	4	EACH	BALLAST, TYPE CMRI-175-480, REMOTE	
2	2	631	87300	2	EACH	BALLAST, TYPE CMRI-250-480, REMOTE	
4	4	631	89200	4	EACH	MERCURY VAPOR LUMINAIRE, TYPE TC-31.21 WITH 175 WATT LAMP	
2	2	631	89300	2	EACH	MERCURY VAPOR LUMINAIRE, TYPE TC-31.21 WITH 250 WATT LAMP	
6	6	631	94200	6	EACH	REMOVAL OF LUMINAIRE AND DISPOSAL	
3	3	631	94304	3	EACH	REMOVAL OF DISCONNECT SWITCH AND DISPOSAL	
5	5	631	94404	5	EACH	REMOVAL OF BALLAST AND DISPOSAL	
3	3	631	94408	3	EACH	REMOVAL OF SIGN WIRING AND DISPOSAL	
3	3	631	94413	3	EACH	REMOVAL OF SIGN SERVICE AND DISPOSAL, AS PER PLAN	32
0.21	0.21	642	00102	0.21	MILE	EDGE LINE, TYPE 2	
0.24	0.24	642	00302	0.24	MILE	CENTER LINE, TYPE 2	
105	105	642	00702	105	LIN.FT.	TRANSVERSE LINE, TYPE 2	

CALCULATED JEN
CHECKED EPS

TRAFFIC CONTROL GENERAL SUMMARY

CUY-271-15.43



REF. NO.	STATION FROM	STATION TO	SIDE	642 EDGE LINE, WHITE, TYPE 2	642 CENTER LINE, DOUBLE SOLID, TYPE 2	642 TRANSVERSE LINE, YELLOW, TYPE 2
				LIN.FT.	LIN.FT.	LIN.FT.
EL-1	4+80	7+43	Lt.	263		
EL-2	4+80	7+43	Rt.	263		
EL-3	11+94	14+80	Lt.	286		
EL-4	11+94	14+80	Rt.	286		
TL-1	4+80	7+00	Lt.			105
CL-1	4+80	14+80	℄		1,263	
TOTAL				1,098	1,263	105
TOTAL IN MILES				0.21	0.24	

* Sign and Support to be picked up by City of Highland Heights

REF. NO.	STATION	SIDE	CODE	SIZE (INCHES)	630 EXISTING SIGN SIZE (EFFECTIVE) L X H	630 EXISTING SIGN SIZE (OVERALL) L X H	630 PROPOSED SIGN SIZE (EFFECTIVE) L X H	630 PROPOSED SIGN SIZE (OVERALL) L X H	630 PROPOSED SIGN SIZE (ACTUAL) L X H	630 SIGN, FLAT SHEET, TYPE G SQ.FT.	630 GROUND MOUNTED SUPPORT, NO. 3 POST LIN.FT.	630 GROUND MOUNTED SUPPORT, NO. 4 POST LIN.FT.	630 REMOVAL OF GROUND MOUNTED SIGN & RE-ERECTION EACH	630 REMOVAL OF GROUND MOUNTED SIGN & STORAGE EACH	630 REMOVAL OF GROUND MOUNTED POST SUPPORT & DISPOSAL EACH	630 STRUCTURE MOUNTED SIGN SUPPORT, TYPE TC-18.24 EACH	630 SIGN EXTRUSHEET, TYPE G SQ.FT.	630 REMOVAL OF OVERHEAD SIGN SUPPORT AND DISPOSAL, TYPE TC-18.24 EACH	630 REMOVAL OF STRUCTURE MOUNTED SIGN AND DISPOSAL EACH	630 REMOVAL OF LUMINAIRE SUPPORT ASSEMBLY AND DISPOSAL EACH	630 REMOVAL OF GROUND MOUNTED SIGN & STORAGE, AS PER PLAN EACH	631 SIGN SERVICE, AS PER PLAN EACH	631 SIGN WIRED, OVERPASS STRUCTURE MOUNTED EACH	631 DISCONNECT SWITCH WITH ENCLOSURE, TYPE X EACH	631 BALLAST WIRING ENCLOSURE, TYPE B EACH	631 BALLAST, TYPE CMRI-175-480, REMOTE EACH	631 BALLAST, TYPE CMRI-250-480, REMOTE EACH	631 MERCURY VAPOR LUMINAIRE TYPE TC-31.21 WITH 175 WATT LAMP EACH	631 MERCURY VAPOR LUMINAIRE TYPE TC-31.21 WITH 250 WATT LAMP EACH	631 REMOVAL OF LUMINAIRE AND DISPOSAL EACH	631 REMOVAL OF DISCONNECT SWITCH AND DISPOSAL EACH	631 REMOVAL OF BALLAST AND DISPOSAL EACH	631 REMOVAL OF SIGN WIRING AND DISPOSAL EACH	631 REMOVAL OF SIGN SERVICE AND DISPOSAL, AS PER PLAN EACH
1S	4+90 HIGHLAND	Lt.	R-31A-36	36" x 30"						7.50	13.5			1	1																					
2S	5+50 HIGHLAND	Lt.		24" x 30"										1	1																					
3S	5+50 HIGHLAND	Lt.		24" x 30"							13.5		1																						
4S	6+62 HIGHLAND	Lt.	R-10-24	24" x 30"						5.00	13.5																								
5S	7+53 HIGHLAND	Lt.	W-47-36	36" x 36"						9.00		14.0		1	1																				
6S	12+02 HIGHLAND	Rt.	R-10-24	24" x 30"						5.00	13.5			1																					
7S	13+95 HIGHLAND	Rt.		18" x 24"							13.0		1		1																				
8S	70+70 NB I-271	Rt.			13' x 12'	13' x 13'	13' x 12'	13' x 13'	13' x 12'-6"							1	162.5	1	1	2		1	1	1	1		2		1	1	1	1	1	1	1
9S	70+96 SB I-271	Lt.			15' x 7'	15' x 8'	15' x 7'	15' x 8'	15' x 7'-6"							1	112.5	1	1	2			1	1		2			2		2	1	2	1	1
						7' x 2'			7' x 2'								14.0			1														
10S	70+96 SB I-271	Lt.			16' x 9'-6"	16' x 10'-6"	16' x 9'-6"	16' x 10'-6"	16' x 10'							1	160.0	1	1	2			1	1	1	2		2		2	1	1	1	1	1
						7' x 2'			7' x 2'								14.0			1														
* 11S	5+01 HIGHLAND	Lt.																			1														
TOTALS										26.50	67.0	14.0	2	4	4	3	463.0	3	5	6	1	1	3	3	2	4	2	4	2	6	3	5	3	3
TOTALS CARRIED TO GENERAL SUMMARY										27	67	14	2	4	4	3	463	3	5	6	1	1	3	3	2	4	2	4	2	6	3	5	3	3

EUTHENICS INC. CONSULTING ENGINEERS

N

0 50 100 HORIZONTAL SCALE IN FEET

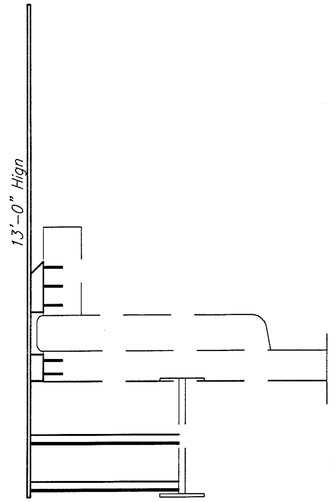
CALCULATED PLN CHECKED JEN

SIGNING AND PAVEMENT MARKING PLAN - HIGHLAND ROAD STA. 3+00 TO STA. 17+00

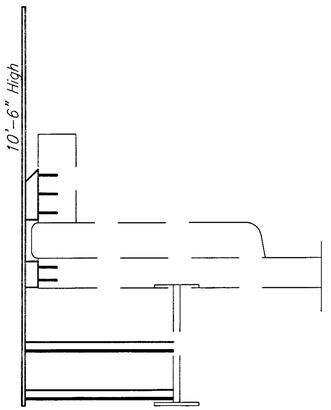
CUY-271-15.43

34/57

\\JOBS\326\ROADWAY\HIGHLAND\326SMH1.DWG PJK 12/15/00 PLOT @ 1:50 MP.



OVERHEAD SIGN No. 8S
No Scale



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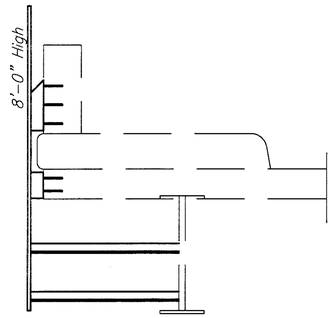
No Scale



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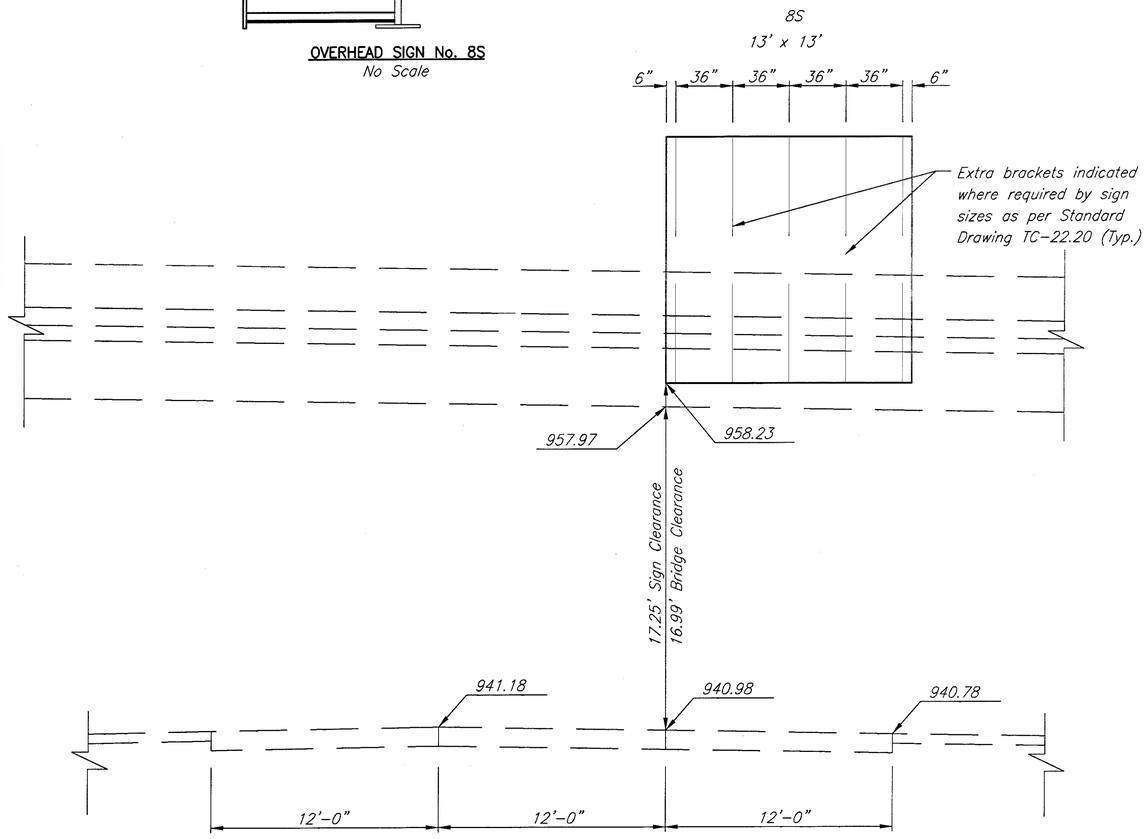
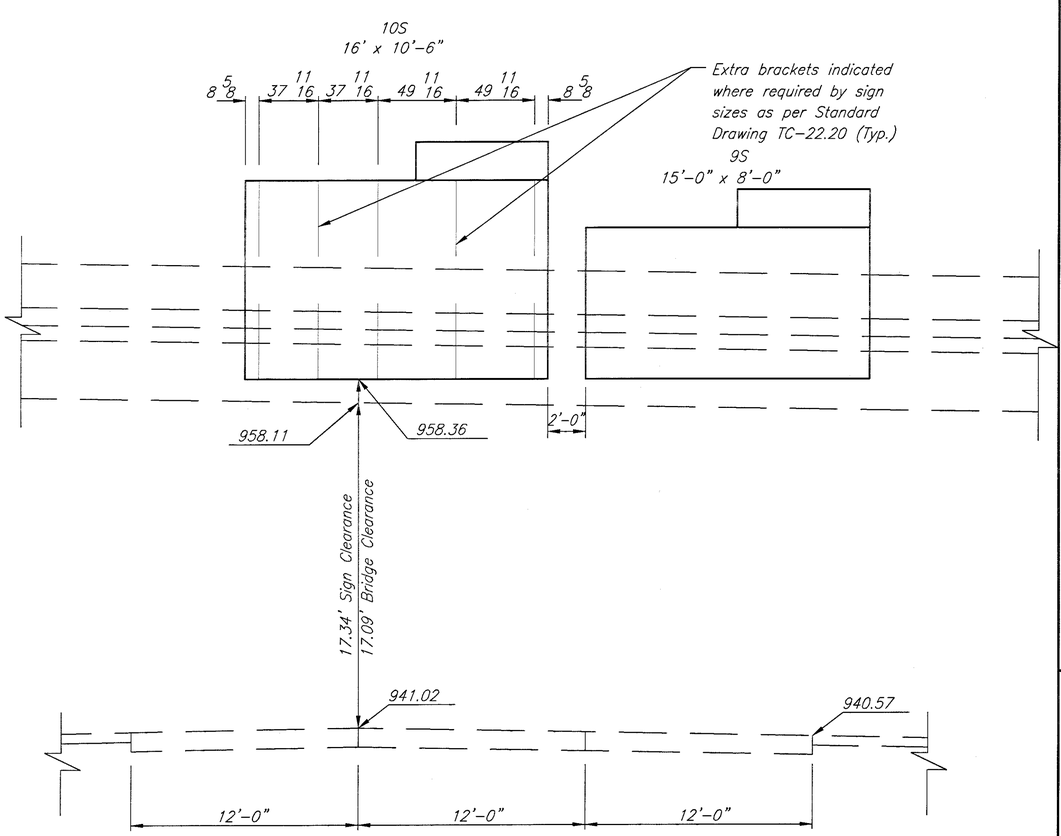


OVERHEAD SIGN NO. 8S

STA. 70+70 N.B. I-271
STRUCTURE MOUNTED SIGN SUPPORT, TYPE TC-18.24



OVERHEAD SIGN NO. 9S AND 10S

STA. 70+96 S.B. I-271
STRUCTURE MOUNTED SIGN SUPPORT, TYPE TC-18.24 (2)

Note:
Sign size shown is overall and includes 6 inches for glare shield and 6 inches for lighting.

EUTHENICS INC.
CONSULTING ENGINEERS

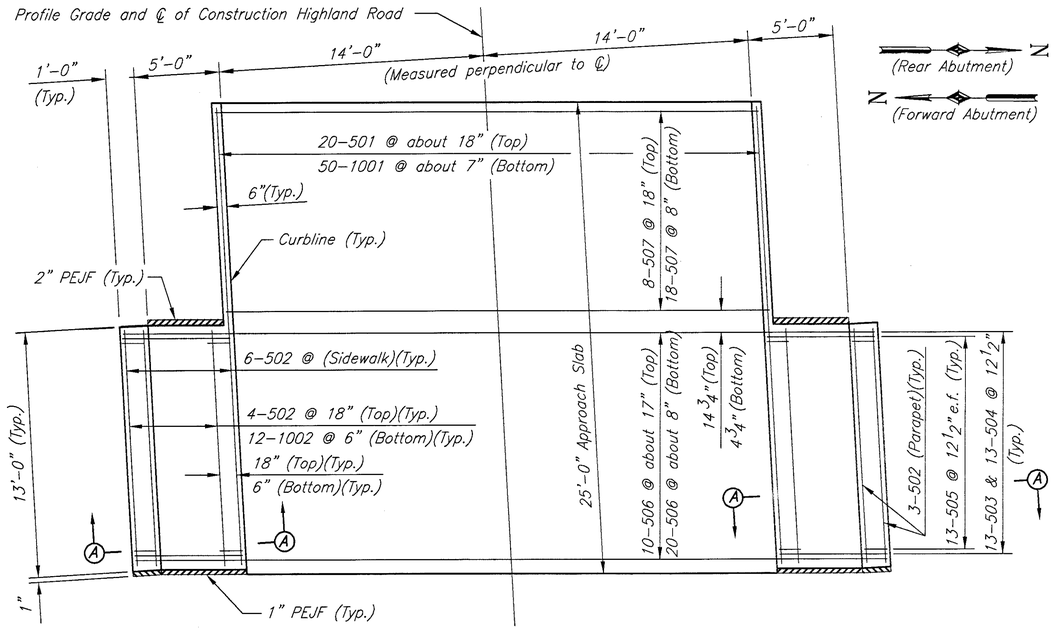
[JOBS\326\ROADWAY\HIGHLAND\326SSD2.DWG] PJK 12/15/00 PLOT 1:4 IMP.

CALCULATED PLN CHECKED JEN

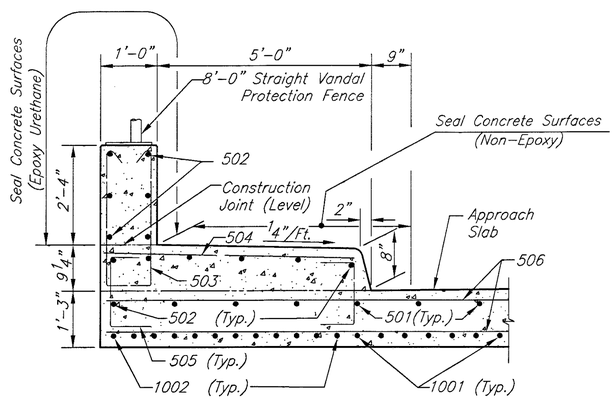
SIGN SUPPORT DETAILS - HIGHLAND ROAD

CUY-271-15.43

35
57

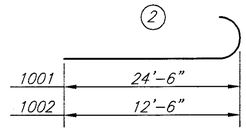


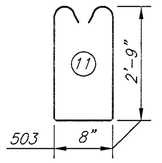
PLAN

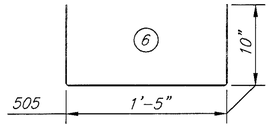


SECTION A–A

BENDING DIAGRAMS







NOTES:

All reinforcing steel shall be epoxy coated.
All Dimensions are shown out to out.

MARK	NO.	LENGTH	SHAPE	SER. INCR.
APPROACH SLAB				
AS501	40	24'-6"	Str.	
AS502	64	12'-6"	Str.	
AS503	52	6'-10"	11	
AS504	52	5'-6"	Str.	
AS505	104	2'-10"	6	
AS506	60	39'-6"	Str.	
AS507	52	28'-6"	Str.	
AS1001	100	25'-11"	2	
AS1002	48	13'-11"	2	

NOTES:

Sidewalk and Parapet concrete, reinforcing steel and sealing of concrete surfaces to be included for payment with Item 611, Reinforced Concrete Approach Slab.

All reinforcing steel bar marks shall be prefixed AS (Approach Slab).

For fence post spacing see Bridge Plans.

For guardrail connection detail to parapet see Ohio Standard Drawing GR-3.1.

For additional notes and details see Ohio Standard Drawing AS-1-81, sheets 1 and 2 of 3.

The following abbreviations are used:

Typ. = Typical
PEJF = Preformed Expansion Joint Filler

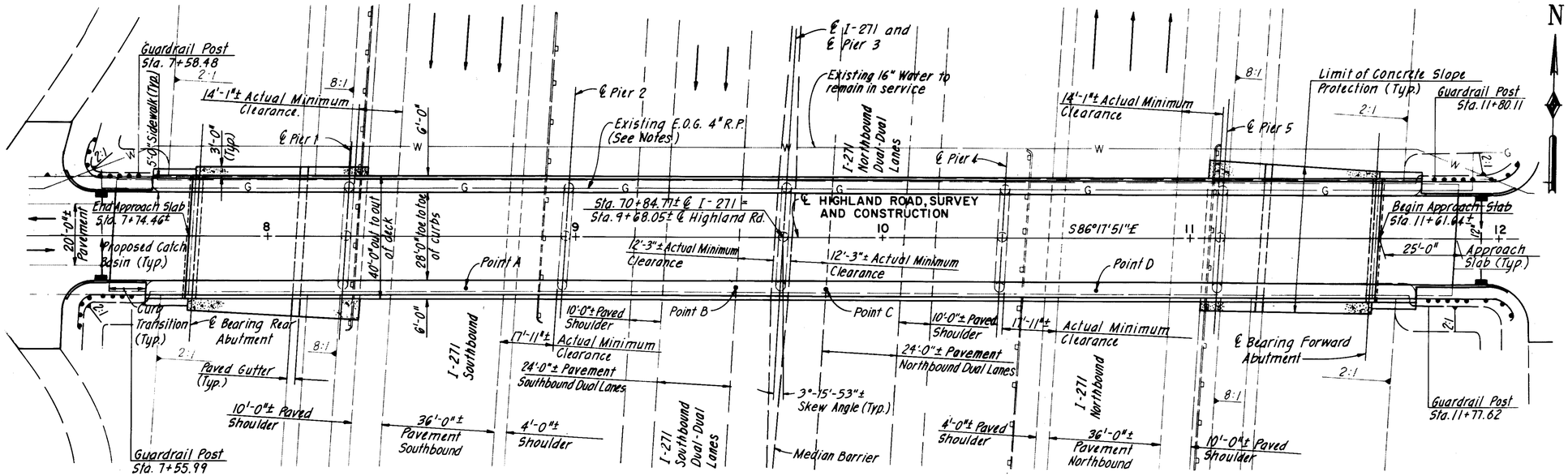
CALCULATED BMG
CHECKED GFH

APPROACH SLAB DETAILS

BRIDGE NO. CUY-271-1543

CUY-271-15.43

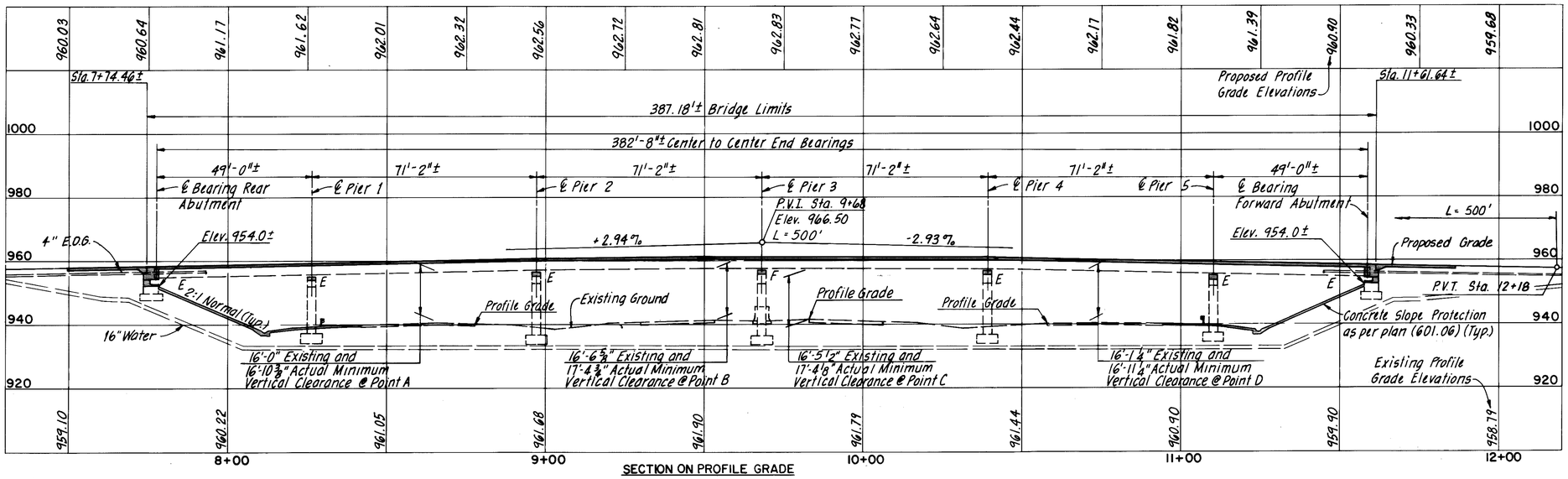
[326SLB01R.DWG] PJK 12/15/00 1=4 IMP.



PLAN

TEMPORARY BENCH MARK
Top of Nut
Sta. 7+64, 18.6' Lt.
℄ Highland Road
Elev. 961.55

EARTHWORK
Earthwork limits shown are approximate. Actual slope shall conform to plan cross sections.



SECTION ON PROFILE GRADE

TRAFFIC DATA – (HIGHLAND ROAD)
2000 A.D.T. = 7,551
A.D.T.T. = 227
2020 A.D.T. = 9,777
A.D.T.T. = 293

Notes:

Existing East Ohio Gas to remain on bridge and be relocated on the approaches to match the proposed profile grade elevations.

Actual vertical clearances are greater than the required to allow for the future widening of Highland Road.

16'-6" required minimum vertical clearance. Actual minimum vertical clearances at Point A and D occur at the intersection of the roadway crowns and at the south edge of the south exterior beam. Actual minimum vertical clearance at Point B occurs at the intersection of the east edge of pavement and the south edge of the south exterior beam. Actual minimum vertical clearance at Point C occurs at the intersection of the west edge of pavement and the south edge of the south exterior beam.

EXISTING STRUCTURE	
Type:	Continuous Steel Beam with Reinforced Concrete Deck and Substructure
Spans:	49'–0"±, 4 Spans @ 71'–2"±, 49'–0"± Center to Center Bearings
Roadway:	28'0"± Toe to Toe of Curbs with two 4'–2"± Sidewalks
Loading:	C.F.=130 (57)
Skew:	3°–15'–53"± Left Forward
Wearing Surface:	Monolithic Concrete
Approach Slabs:	25' Long
Alignment:	Tangent
Crown:	Normal, 0.156± Ft./Ft.
Date Built:	1960
Structural File No.:	1811851

PROPOSED STRUCTURE	
Proposed Work:	Raise Superstructure, Replace Concrete Deck, Modify, Repair and Seal Existing Substructure Units
Type:	Continuous Composite Steel Beam with Reinforced Concrete Deck and Substructure
Spans:	49'–0"±, 4 Spans @ 71'–2"±, 49'–0"± Center to Center Bearings
Roadway:	28'–0" Toe to Toe of Curbs with two 5'–0" Sidewalks
Loading:	HS20–44 Case II and Alternate Military Loading
Skew:	3°–15'–53"± Left Forward
Wearing Surface:	Monolithic Concrete
Approach Slabs:	AS–1–81 (25'–0" Long)
Alignment:	Tangent
Crown:	Normal, 0.0156 Ft./Ft.

DESIGN AGENCY
EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND, OHIO

DESIGNED BMG | DRAWN GLD | REVIEWED KRD | DATE 5-97
CHECKED RSY | REVISED | STRUCTURE FILE NUMBER 1811851

CUYAHOGA COUNTY
STA. 7+74.46± TO
STA. 11+61.64±

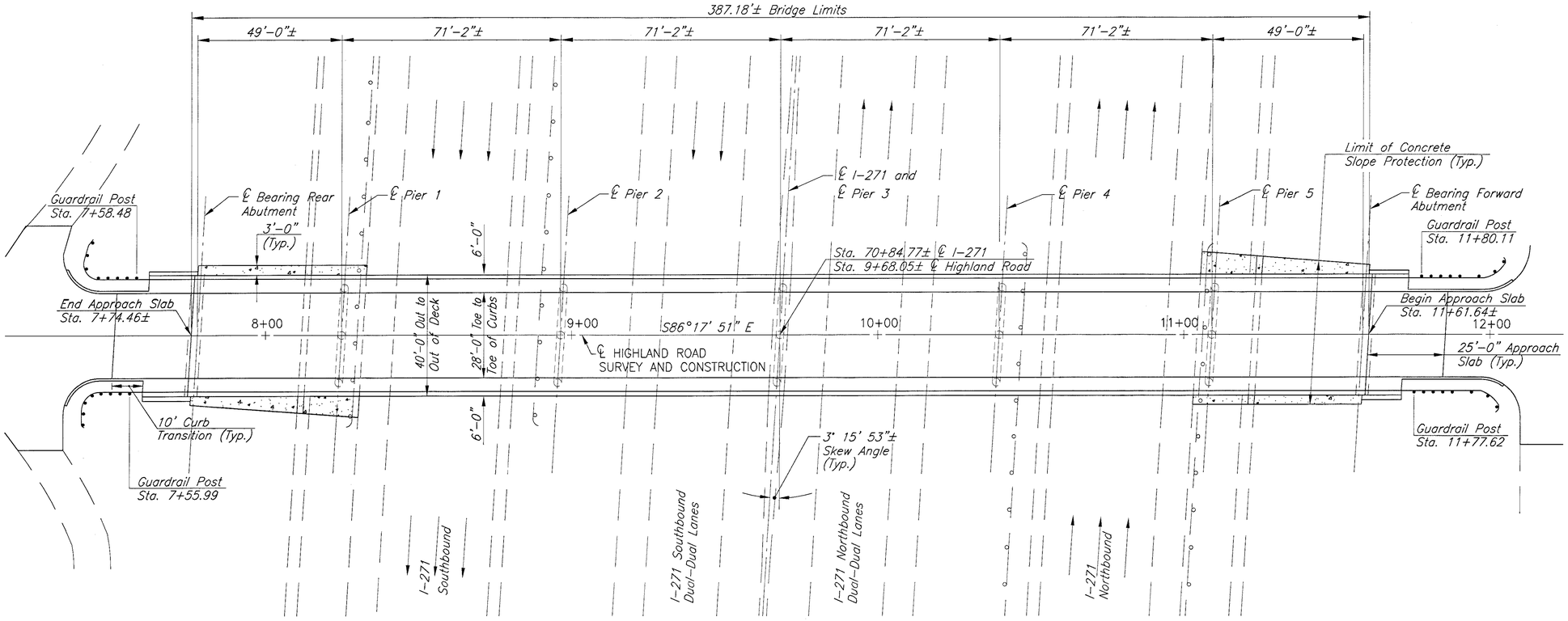
SITE PLAN
BRIDGE NO. CUY-271-1543
UNDER HIGHLAND ROAD

CUY-271-15.43

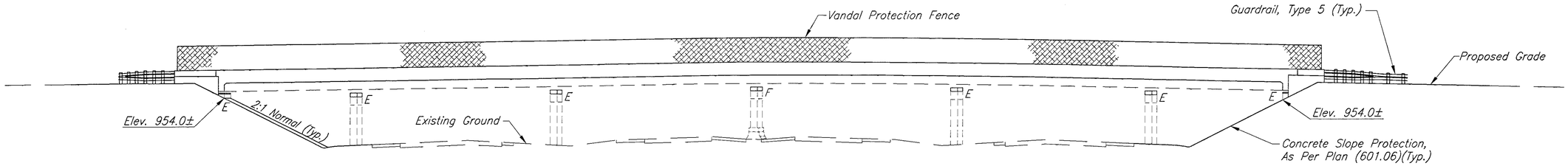
1 / 16

37 / 57

[3265SP20.DWG] BMG 9/27/99 1=1



GENERAL PLAN



ELEVATION

DESIGN AGENCY
EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND, OHIO

DESIGNED BMG
DRAWN PJK
CHECKED RSY
REVIEWED KRD
DATE 5-97
REVISED
STRUCTURE FILE NUMBER 1811851

GENERAL PLAN AND ELEVATION
BRIDGE NO. CUY-271-15.43
I-271 UNDER HIGHLAND ROAD

CUY-271-15.43

2 / 16

38 / 57

[326GP20.DWG] PJK 9/27/99 PLOT @ 1:20 IMP.

GENERAL NOTES - STRUCTURES

STANDARD DRAWINGS AND SUPPLEMENTAL SPECIFICATIONS

REFERENCE SHALL BE MADE TO STANDARD DRAWINGS

AS-1-81 DATED 9-15-94

VPF-1-90 DATED 3-20-95

AND TO SUPPLEMENTAL SPECIFICATIONS

843 DATED 5-5-98
844 DATED 1-6-99
911 DATED 7-10-97

DESIGN SPECIFICATIONS

THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 1996, INCLUDING THE 1997 AND 1998 INTERIM SPECIFICATIONS AND THE O.D.O.T. BRIDGE DESIGN MANUAL.

THE DESIGN DATA IS AS FOLLOWS:

DESIGN LOADING	– HS20-44 CASE II AND THE ALTERNATE MILITARY LOADING.
CONCRETE CLASS S	– COMPRESSIVE STRENGTH 4,500 PSI (SUPERSTRUCTURE)
CONCRETE CLASS C	– UNIT STRESS 1,333 PSI (SUBSTRUCTURE)
EXISTING STRUCTURAL STEEL	– A36 – YIELD STRENGTH 36,000 P.S.I.
REINFORCING STEEL	– ASTM A615, A616 OR A617 – GRADE 60, MINIMUM YIELD STRENGTH 60,000 PSI. SPIRAL REINFORCEMENT MAY BE PLAIN BARS, ASTM A82 OR A615.
DECK PROTECTION METHOD	– EPOXY COATED REINFORCING STEEL AND 2 1/2" CONCRETE COVER AND SEALING OF CONCRETE SURFACES.
MONOLITHIC WEARING SURFACE	– MONOLITHIC WEARING SURFACE IS ASSUMED FOR DESIGN PURPOSES TO BE 1" THICK.

PROPOSED WORK

THE WORK TO BE DONE UNDER THIS CONTRACT IS AS SHOWN ON THE CONSTRUCTION PLANS AND, IN GENERAL, INCLUDES THE FOLLOWING:

1. REMOVAL OF EXISTING CONCRETE DECK, APPROACH SLABS AND PORTIONS OF THE ABUTMENTS
2. MODIFY, REPAIR AND EXTEND EXISTING SUBSTRUCTURE UNITS
3. REUSE EXISTING BEARINGS
4. PLACE NEW CONCRETE DECKS, SIDEWALKS AND PARAPETS
5. SEAL CONCRETE SURFACES
6. PLACE NEW CONCRETE SLOPE PROTECTIONS

PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN

DESCRIPTION:

THIS WORK SHALL INCLUDE THE ELEMENTS INDICATED IN THE PLANS AND GENERAL NOTES AND ARE NOT SEPARATELY LISTED FOR PAYMENT. ITEMS TO BE REMOVED INCLUDE ALL EXISTING MATERIALS BEING REPLACED BY THE NEW CONSTRUCTION AND MISCELLANEOUS ITEMS THAT ARE NOT SHOWN TO BE INCORPORATED INTO THE FINAL CONSTRUCTION AND ARE DIRECTED BY THE ENGINEER, TO BE REMOVED. ALSO THIS WORK SHALL CONSIST OF THE REMOVAL OF CONCRETE DECKS INCLUDING PARAPETS, RAILINGS, DECK JOINTS AND OTHER APPURTENANCES FROM STEEL SUPPORTING SYSTEMS (BEAMS, CROSS FRAMES, ETC.) CARE SHALL BE TAKEN DURING DECK REMOVALS TO PROTECT PORTIONS OF SUCH SYSTEMS THAT ARE TO BE SALVAGED AND INCORPORATED INTO THE PROPOSED STRUCTURE. IN THIS RESPECT, THE USE OF EXPLOSIVES, HEADACHE BALLS AND/OR HOE-RAM TYPE OF EQUIPMENT IS PROHIBITED.

PROTECTION OF TRAFFIC:

PRIOR TO DEMOLITION OF ANY PORTIONS OF THE EXISTING SUPERSTRUCTURE, THE CONTRACTOR SHALL SUBMIT HIS PLANS FOR THE PROTECTION OF TRAFFIC (VEHICULAR, PEDESTRIAN, ETC.) ADJACENT TO AND/OR UNDER THE STRUCTURE TO THE DIRECTOR FOR APPROVAL. THESE PLANS SHALL INCLUDE PROVISIONS FOR ANY DEVICES AND STRUCTURES THAT MAY BE NECESSARY TO INSURE SUCH PROTECTION. TEMPORARY VERTICAL CLEARANCES SPECIFIED ON THE PLANS OR IN THE PROPOSAL SHALL BE MAINTAINED AT ALL TIMES EXCEPT AS OTHERWISE APPROVED BY THE DIRECTOR.

PROTECTION OF STEEL SUPPORT SYSTEMS:

BEFORE DECK SLAB CUTTING IS PERMITTED, THE OUTLINE OF PRIMARY STEEL MEMBERS IN CONTACT WITH THE BOTTOM OF THE DECK SHALL BE DRAWN ON THE SURFACE OF THE DECK. SMALL DIAMETER PILOT HOLES SHALL BE DRILLED 2 INCHES OUTSIDE THESE LINES TO CONFIRM THE LOCATION OF FLANGE EDGES. DECK CUTS OVER OR WITHIN 2 INCHES OF FLANGE EDGES SHALL NOT EXTEND LOWER THAN THE BOTTOM LAYER OF DECK SLAB REINFORCING STEEL. CUTS MADE OUTSIDE 2 INCHES OF FLANGE EDGES MAY EXTEND THE FULL DEPTH OF THE DECK. DURING CUTTING OF THE DECK SLAB, CARE SHALL BE TAKEN NOT TO DAMAGE STEEL MEMBERS THAT ARE TO BE INCORPORATED INTO THE PROPOSED STRUCTURE.

REMOVAL METHODS:

CONCRETE MAY BE REMOVED BY CUTTING AND BY MEANS OF HAND OPERATED PNEUMATIC HAMMERS EMPLOYING POINTED OR BLUNTED CHISEL TYPE TOOLS. FOR REMOVALS ABOVE STEEL MEMBERS, A HAMMER HEAVIER THAN 35 POUNDS BUT NOT TO EXCEED 90 POUNDS MAY BE USED AT THE APPROVAL OF THE ENGINEER, TO ENSURE ADEQUATE DEPTH CONTROL AND TO PREVENT NICKING OR GOUGING THE PRIMARY STEEL MEMBERS.

DECK REMOVALS:

DUE TO THE POSSIBLE PRESENCE OF WELDED ATTACHMENTS TO EXISTING STRUCTURAL STEEL (FINISHING MACHINE, SCUPPER AND FORM SUPPORTS, ETC.), CARE SHALL BE TAKEN DURING DECK REMOVAL TO AVOID DAMAGING STRINGERS WHICH ARE TO REMAIN. STRINGERS DAMAGED BY THE CONTRACTOR'S REMOVAL OPERATIONS SHALL, AT NO COST TO THE PROJECT, BE REPLACED OR REPAIRED. PROPOSED REPAIRS, DEVELOPED BY A REGISTERED PROFESSIONAL ENGINEER, SHALL BE SUBMITTED IN WRITING FOR REVIEW AND APPROVAL BY THE DIRECTOR.

EXTRANEOUS MEMBERS:

EXISTING EXTRANEOUS MEMBERS (I.E., FINISHING MACHINE AND FORM SUPPORTS, ETC., AND THE SUPPORT FOR SCUPPERS WHICH ARE TO BE REMOVED) ATTACHED BY WELDED CONNECTIONS TO PORTIONS OF THE TOP FLANGES DESIGNATED "TENSION" SHALL BE REMOVED AND THE FLANGE SURFACE GROUND SMOOTH. GRINDING SHALL BE CAREFULLY DONE AND PARALLEL TO THE FLANGES.

LOADING LIMITATIONS:

NO PART OF THE STRUCTURE SHALL BE SUBJECTED TO UNIT STRESSES THAT EXCEED 136.5% OF THE ALLOWABLE UNIT STRESSES GIVEN IN THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES DUE EITHER TO DEMOLITION, ERECTION OR CONSTRUCTION METHODS, OR TO THE USE OR MOVEMENT OF DEMOLITION OR ERECTION EQUIPMENT ON OR ACROSS THE STRUCTURE. STRUCTURAL ANALYSIS COMPUTATIONS, BY A REGISTERED PROFESSIONAL ENGINEER, SHOWING THE ALLOWABLE STRESSES AND THE MAXIMUM STRESSES PRODUCED BY THE CONTRACTOR'S METHODS OR EQUIPMENT SHALL BE SUBMITTED TO THE DIRECTOR FOR REVIEW AND APPROVAL AT LEAST TWO WEEKS PRIOR TO THE START OF THE WORK.

PAYMENT:

THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE BID, WHICH PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK IN CONFORMANCE WITH THESE REQUIREMENTS, WITH PERTINENT PROVISIONS OF 202, AND TO THE SATISFACTION OF THE ENGINEER.

CUT LINE CONSTRUCTION JOINT PREPARATION

SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS 1 INCH DEEP. REMOVE CONCRETE TO A ROUGH SURFACE. WHERE PRACTICABLE, THE EXISTING REINFORCING STEEL WHERE REQUIRED IN THE PLANS SHALL BE LEFT IN PLACE. INSTALL DOWEL BARS IF SPECIFIED. PRIOR TO CONCRETE PLACEMENT ABRASIVELY CLEAN JOINT SURFACE AND EXPOSED REINFORCEMENT TO REMOVE LOOSE AND DISINTEGRATED CONCRETE AND LOOSE RUST. THE JOINT SURFACE AND EXPOSED REINFORCEMENT SHALL BE THOROUGHLY CLEANED OF ALL DIRT, DUST, OR OTHER FOREIGN MATERIAL BY USE OF WATER, AIR UNDER PRESSURE, OR OTHER METHODS THAT PRODUCE SATISFACTORY RESULTS. CONCRETE BONDING SURFACE SHALL BE WET WITHOUT FREE WATER AS CONCRETE IS PLACED.

SUBSTRUCTURE CONCRETE REMOVAL:

SUBSTRUCTURE CONCRETE REMOVAL SHALL BE BY MEANS OF APPROVED PNEUMATIC HAMMERS EMPLOYING POINTED AND BLUNT CHISEL TOOLS. HYDRAULIC HOE-RAM TYPE HAMMERS WILL NOT BE PERMITTED. THE WEIGHT OF THE HAMMER SHALL NOT BE MORE THAN 35 POUNDS FOR REMOVAL WITHIN 18 INCHES OF PORTIONS TO BE PRESERVED. OUTSIDE THE 18 INCH LIMIT, A HAMMER HEAVIER THAN 35 POUNDS, BUT NOT TO EXCEED 90 POUNDS, MAY BE USED AT THE APPROVAL OF THE ENGINEER. PNEUMATIC HAMMERS SHALL NOT BE PLACED IN DIRECT CONTACT WITH REINFORCING STEEL THAT IS TO BE RETAINED IN THE REBUILT STRUCTURE.

ITEM 503 – UNCLASSIFIED EXCAVATION, AS PER PLAN

UNCLASSIFIED EXCAVATION SHALL BE IN ACCORDANCE WITH 503 EXCEPT THAT THE BACKFILL MATERIAL BEHIND THE ABUTMENTS SHALL BE 203 GRANULAR MATERIAL PLACED IN 6 INCH LIFTS AND COMPACTED IN ACCORDANCE WITH 304.04.

FOUNDATION BEARING PRESSURE

THE ABUTMENT FOOTINGS, AS DESIGNED, PRODUCE A MAXIMUM BEARING PRESSURE OF 2 1/2 TONS PER SQUARE FEET. THE ALLOWABLE BEARING PRESSURE IS 2 1/2 TONS PER SQUARE FOOT.

MAINTENANCE OF TRAFFIC

ROAD TO BE CLOSED AND TRAFFIC DETOURED.

UTILITY LINES

ALL EXPENSE INVOLVED IN RELOCATING THE AFFECTED UTILITY LINES SHALL BE BORN BY THE UTILITIES. THE CONTRACTOR AND UTILITIES ARE TO COOPERATE BY ARRANGING THEIR WORK IN SUCH A MANNER THAT INCONVENIENCE TO EITHER WILL BE HELD TO A MINIMUM.

EXISTING STRUCTURE VERIFICATION

DETAILS AND DIMENSIONS SHOWN IN THESE PLANS PERTAINING TO THE EXISTING STRUCTURES HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURES AND FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURES AND THE PROPOSED WORK BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO CMS SECTIONS 102.05, 105.02 AND 513.02.

CONTRACT BID PRICES SHALL BE BASED UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PRE BID EXAMINATION OF THE EXISTING STRUCTURE BY THE CONTRACTOR. HOWEVER, ALL PROJECT WORK SHALL BE BASED UPON ACTUAL DETAILS AND DIMENSIONS WHICH HAVE BEEN VERIFIED BY THE CONTRACTOR IN THE FIELD.

ITEM 511 – CONCRETE MISC.: REPLACEMENT OF EXISTING REINFORCING STEEL

ANY EXISTING REINFORCING BARS DEEMED BY THE ENGINEER TO BE UNUSABLE BECAUSE OF CORROSION SHALL BE REPLACED WITH NEW STEEL. ANY EXISTING REINFORCING BARS WHICH ARE TO BE INCORPORATED INTO THE NEW WORK AND WHICH ARE MADE UNUSABLE BY THE CONTRACTOR'S CONCRETE REMOVAL OPERATIONS SHALL BE REPLACED WITH NEW REINFORCING STEEL OF THE SAME SIZE AT THE CONTRACTOR'S COST.

ALL WORK SHALL BE TO THE SATISFACTION OF THE ENGINEER. ALL PROVISIONS OF ITEM 509 – REINFORCING STEEL AND ITEM 510 – DOWEL HOLES, SHALL REMAIN IN EFFECT.

THIS ITEM WILL BE PAID FOR AT THE CONTRACT UNIT PRICE UNDER:

ITEM	EXT.	UNIT	DESCRIPTION
511	81400	POUND	CONCRETE MISC.: REPLACEMENT OF EXISTING REINFORCING STEEL

INSPECTION OF STRUCTURAL STEEL

THE ENGINEER SHALL VISUALLY INSPECT ALL EXISTING BUTT-WELDED SPLICES AND/OR TOP FLANGE COVER PLATE FILLET WELDS TO ENSURE THAT THEY ARE FREE OF DEFECTS. THE DECK SLAB HAUNCH FORMS IMMEDIATELY ADJACENT TO SUCH WELDS SHALL NOT BE ERECTED UNTIL AFTER THE ENGINEER HAS COMPLETED THIS INSPECTION. THIS INSPECTION SHALL NOT TAKE PLACE UNTIL AFTER THE TOP FLANGES ARE CLEANED AS SPECIFIED IN 511.08, BUT IT SHALL BE DONE BEFORE THE DECK SLAB REINFORCEMENT IS INSTALLED. THE COST ASSOCIATED WITH THIS INSPECTION SHALL BE INCLUDED WITH ITEM 844 – HIGH PERFORMANCE CONCRETE SUPERSTRUCTURE (DECK), AS PER PLAN.

ITEM 844 – HIGH PERFORMANCE CONCRETE SUBSTRUCTURE, AS PER PLAN

INSTALL A 3 FOOT WIDE STRIP, 3/32 INCH THICK, GENERAL PURPOSE, HEAVY DUTY NEOPRENE SHEET WITH NYLON FABRIC REINFORCEMENT AT LOCATIONS SHOWN IN THE PLANS. SECURE THE 3 FOOT WIDE NEOPRENE SHEETING TO THE CONCRETE WITH 1 1/4" X 3/32" X 1/4" (LENGTH X SHAFT DIAMETER X HEAD DIAMETER) #10 GALVANIZED SCREWS THROUGH A 1 INCH OUTSIDE DIAMETER, #10 GAGE GALVANIZED WASHER. MAXIMUM FASTENER SPACING IS 9 INCHES. OTHER SIMILAR GALVANIZED DEVICES WHICH WILL NOT DAMAGE EITHER THE NEOPRENE OR THE CONCRETE MAY BE USED SUBJECT TO THE APPROVAL OF THE ENGINEER.

CENTER THE NEOPRENE STRIPS ON ALL JOINTS. FOR HORIZONTAL JOINTS, SECURE THE HORIZONTAL NEOPRENE STRIP BY USING A SINGLE LINE OF FASTENERS, STARTING AT 6 INCHES (+/-) FROM THE TOP OF THE NEOPRENE STRIP.

LAPS IN THE LENGTH OF THE HORIZONTAL STRIPS DUE TO MATERIAL MANUFACTURING SHALL BE AT LEAST ONE FOOT IN LENGTH, IF NOT VULCANIZED OR ADHESIVE BONDED, OR 6 INCHES IN LENGTH IF THE LAP IS VULCANIZED OR ADHESIVE BONDED.

DESIGN AGENCY
EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND, OHIO

DESIGNED BMG | DRAWN RM | REVIEWED KRD | DATE 4-99
CHECKED RSY | REVISED | STRUCTURE FILE NUMBER 1811551

GENERAL NOTES - STRUCTURES
BRIDGE NO. CUY-271-1543

CUY-271-15.43

3 / 16

39 / 57

[326/HIGHLAND/326GNS01.DWG] PJK 9/27/99 PLOT @ 1=1 IMP.

GENERAL NOTES - STRUCTURES

THE NEOPRENE SHEETING SHALL BE 3/32 INCH THICK GENERAL PURPOSE, HEAVY DUTY NEOPRENE SHEET WITH NYLON FABRIC REINFORCEMENT. THE SHEETING SHALL BE "FAIRPRENE NUMBER NN-0003", BY E.I. DuPONT DeNEMOURS AND COMPANY, INC., WINGPRENE" BY THE GOODYEAR TIRE AND RUBBER COMPANY, OR AN APPROVED ALTERNATE. THE NEOPRENE SHEETING SHALL CONFORM TO THE FOLLOWING:

DESCRIPTION OF TEST	ASTM METHOD	REQUIREMENT
THICKNESS, INCHES	D 751	0.94 +/- .01
BREAKING STRENGTH, GRAB WXF, LBS, MINIMUM	D 751	700 X 700
ADHESIVE 1" STRIP, 2" MINIMUM, LBS, MINIMUM	D 751	9
BURST STRENGTH (MULLEN) PSI, MINIMUM	D 751	1400
HEAT AGING 70 HOURS T 212° F, 180 BEND WITHOUT CRACKING	D 2136	NO CRACKING OF COATING
LOW TEMPERATURE BRITTLENESS 1 HOUR AT -40°F, BEND AROUND 1/4 INCH MANDREL	D 2136	NO CRACKING OF COATING

PAYMENT FOR LABOR, MATERIALS AND INSTALLATION OF THESE ITEMS SHALL BE INCLUDED IN ITEM 844 – HIGH PERFORMANCE CONCRETE SUBSTRUCTURE, AS PER PLAN.

ITEM 516 – JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN

THIS ITEM SHALL CONSIST OF FURNISHING ALL NECESSARY LABOR, MATERIALS AND EQUIPMENT TO RAISE OR REPOSITION ANY EXISTING STRUCTURES TO THE DIMENSIONS AND REQUIREMENTS DEFINED IN THE PROJECT PLANS.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN, INSTALLATION AND OPERATION OF AN ADEQUATE JACKING SYSTEM, INCLUDING ANY TEMPORARY OR PERMANENT SUPPORTS NECESSARY TO PERFORM THE WORK DESCRIBED IN THE PROJECT PLANS. THREE (3) SETS OF JACKING PLANS, WHICH INCLUDE THE INFORMATION DESCRIBED IN THIS NOTE, SHALL BE SUBMITTED TO THE DIRECTOR FOR APPROVAL AT LEAST THIRTY (30) DAYS BEFORE ACTUAL WORK IS TO BEGIN. THE PLANS SHALL BE PREPARED AND STAMPED BY A REGISTERED PROFESSIONAL ENGINEER.

JACKING SUBMITTALS SHALL INCLUDE AT LEAST THE FOLLOWING:

1. THE SIGNATURE AND NUMBER, OR PROFESSIONAL SEAL, OF THE REGISTERED PROFESSIONAL ENGINEER WHO PREPARED THE SUBMITTAL.
2. CALCULATIONS AND ANALYSIS OF THE STRUCTURE TO DETERMINE AND DEFINE THE ACTUAL LOADING APPLIED AT THE CONTRACTOR'S SELECTION JACKING POINTS.
3. A DRAWING SHOWING THE PHYSICAL AND DIMENSIONAL POSITION OF THE JACKS WITH RESPECT TO THE STRUCTURE INCLUDING CLEARANCES AND CENTER OF LIFT.
4. A SCHEMATIC LAYOUT OF JACKS, CHECK VALVES, PUMPS WITH 3 WAY RETRACTOR VALVE, PRESSURE GAGES, FLOW CONTROL VALVES, ETC. IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. ALL JACKS FOR EACH ABUTMENT OR PIER SHALL BE CONNECTED TOGETHER. ALL JACKS AT EACH ABUTMENT OR PIER SHALL BE THE SAME SIZE.
5. ANALYSIS AND CALCULATIONS OF THE STRESSES INDUCED OR CREATED IN THE STRUCTURE AND ANY TEMPORARY OR PERMANENT SUPPORTS. DESIGN CALCULATIONS FOR ANY TEMPORARY OR PERMANENT SUPPORTS.
6. PHYSICAL DIMENSIONS, MATERIALS AND FABRICATION DETAILS OF ANY TEMPORARY OR PERMANENT SUPPORTS. HORIZONTAL AND VERTICAL MOVEMENT RESTRAINT SHALL BE PROVIDED.
7. A STEP BY STEP PROCEDURE DETAILING ALL STEPS IN THE JACKING OPERATION.
8. METHOD OF ATTACHMENT TO STRUCTURAL MEMBERS. WELDING TO TENSION AREAS WILL NOT BE PERMITTED.

THE ENTIRE SYSTEM, INCLUDING JACKS, SHALL HAVE 20% MORE CAPACITY THAN REQUIRED BASED ON CALCULATED LOADS.

FOR LIFTS GREATER THAN 1", JACKS SHALL HAVE LOCKING NUTS TO POSITIVELY LOCK AND SUPPORT THE STRUCTURE DURING THE LIFT.

JACKS SHALL HAVE A SWIVEL LOAD CAP, A DOMED PISTON HEAD OR SOME OTHER DEVICE TO PROTECT AGAINST THE EFFECTS OF SIDE LOAD ON THE JACK.

JACKS ALONE SHALL NOT BE USED TO SUPPORT LOADS EXCEPT DURING THE ACTUAL JACKING OPERATION. TEMPORARY SUPPORTS, BLOCKING OR OTHER METHODS APPROVED BY THE DIRECTOR SHALL BE USED.

SINGLE ACTING RAMS WITH NO OVER-TRAVEL PROTECTION SYSTEM SHALL NOT BE USED.

SPARE EQUIPMENT SHALL BE AVAILABLE ON SITE FOR THE REQUIRED STRUCTURE RAISING TO PROCEED IN THE EVENT OF BREAKDOWN. A LIST OF SPARE EQUIPMENT SHALL BE PROVIDED TO THE ENGINEER.

AT A MINIMUM, A JACKING OPERATION SHALL LIFT ALL BEAMS AT ANY ONE ABUTMENT OR PIER SIMULTANEOUSLY.

MAXIMUM DIFFERENTIAL JACKING HEIGHT BETWEEN ANY ADJACENT ABUTMENTS OR PIERS SHALL BE 1" OR LESS.

IF DURING THE JACKING OPERATIONS, DAMAGE TO THE STRUCTURE IS VISUALLY OBSERVED, THE JACKING OPERATION SHALL IMMEDIATELY CEASE AND APPROVED SUPPORTS SHALL BE INSTALLED. THE CONTRACTOR SHALL THEN ANALYZE THE DAMAGE AND SUBMIT A METHOD OF CORRECTION TO THE ENGINEER FOR APPROVAL.

THE CONTRACTOR SHALL DEMONSTRATE TO THE ENGINEER THAT THE BRIDGE BEARINGS ARE FULLY SEATED BETWEEN ALL CONTACT AREAS. IF FULL SEATING IS NOT ATTAINED, SUITABLE MEANS OF REPAIR, SUBJECT TO THE APPROVAL OF THE ENGINEER, WILL BE REQUIRED AT THE CONTRACTOR'S EXPENSE.

THE JACKING OPERATION SHALL BE DIRECTED BY A PROFESSIONAL ENGINEER EMPLOYED BY THE CONTRACTOR. FAILURE TO HAVE A PROFESSIONAL ENGINEER PRESENT SHALL BE CAUSE FOR CEASING JACKING OPERATIONS.

PAYMENT SHALL BE MADE AT THE LUMP SUM PRICE BID FOR ITEM 516, JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN AND SHALL INCLUDE ALL NECESSARY TOOLS, LABOR, EQUIPMENT AND MATERIALS NECESSARY TO COMPLETE THIS ITEM OF WORK.

ITEM 601 – CONCRETE SLOPE PROTECTION, AS PER PLAN

THIS WORK SHALL INCLUDE THE FOLLOWING:

1) EXCAVATION OF EXISTING CRUSHED AGGREGATE SLOPE PROTECTION TO A DEPTH NECESSARY TO ESTABLISH A PROPER SUBGRADE DEPTH WHICH WILL ACCEPT THE PROPOSED SIX INCH THICK CONCRETE SLOPE PROTECTION. THE EXISTING CRUSHED AGGREGATE NEED NOT BE REMOVED IN ITS ENTIRETY; HOWEVER, THE CONTRACTOR SHALL GRADE THE REMAINING CRUSHED AGGREGATE TO PROVIDE A UNIFORM PLANE FOR THE SUBGRADE. ADDITIONAL MATERIAL MEETING THE REQUIREMENTS OF ITEM 203 MAY BE REQUIRED, AS DIRECTED BY THE ENGINEER, TO FILL VOIDS BETWEEN THE CRUSHED AGGREGATE.

   AT THE CONTRACTOR'S OPTION, THE ENTIRE TWELVE INCH LAYER OF CRUSHED AGGREGATE SLOPE PROTECTION MAY BE EXCAVATED AND REPLACED WITH EMBANKMENT THAT MEETS THE REQUIREMENTS OF 203 AND WILL BRING THE PROPOSED SUBGRADE TO SIX INCHES BELOW THE FINAL GRADE OF THE PROPOSED CONCRETE SLOPE PROTECTION. THIS ADDITIONAL EXCAVATION AND EMBANKMENT WORK MAY BE DONE AT NO ADDITIONAL COST TO THE STATE.

2) PROPOSED SLOPE PROTECTION: THE INSTALLATION OF THE NEW WELDED STEEL WIRE FABRIC REINFORCED SLOPE PROTECTION AS SHOWN ON SHEET NUMBERS , , , AND INCLUDING REINFORCING STEEL, WELDED STEEL FABRIC, 709.10, DOWEL HOLES AND GROUT, GEOTEXTILE FILTER, PREFORMED EXPANSION JOINT FILLER AND CONCRETE. THE FABRIC SHALL MEET THE REQUIREMENTS OF 712.09, TYPE B (NONWOVEN). FIELD SPLICES SHALL CONSIST OF 12 INCHES OVERLAP SECURED IN ANY MANNER SUITABLE TO THE ENGINEER THAT WILL ASSURE THAT THE OVERLAP IS MAINTAINED. OVERLAP CLOSURE AT THE TOP OF THE TRENCH SHALL BE 18 INCHES, SECURED AS ABOVE.

   ALL COSTS OF CONSTRUCTING THE NEW SLOPE PROTECTION, INCLUDING ALL NECESSARY EMBANKMENT, EXCAVATION, 3-#5 REBAR @ 12", WELDED STEEL WIRE FABRIC, FILTER FABRIC FABRIC, PREFORMED EXPANSION JOINT FILLER, JOINT SEALER, AND CONCRETE SHALL BE INCLUDED UNDER ITEM 601 – CONCRETE SLOPE PROTECTION, AS PER PLAN.

ITEM SPECIAL, – JOINT SEAL (BITUMEN IMPREGNATED FOAM)

DESCRIPTION:

THIS WORK SHALL CONSIST OF SEALING JOINTS USING BITUMEN IMPREGNATED FOAM IN ACCORDANCE WITH THESE SPECIFICATIONS, IN REASONABLY CLOSE CONFORMITY WITH THE PLANS AND MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS AND AS DIRECTED BY THE ENGINEER.

MATERIAL:

THE MATERIAL SHALL BE PRECOMPRESSED BITUMEN IMPREGNATED FOAM JOINT SEALANT SUCH AS EMSEAL PCSA, PERMABAND 8100 OR AN APPROVED EQUAL. EMSEAL U.S.A., IS LOCATED AT 108 MILK STREET IN WEST BOROUGH, MA 01581 AND HAS A TELEPHONE NUMBER OF (800) 526-8365. PERMABAND IS AVAILABLE FROM PERMAQUIK (CANADA) LTD WHICH IS LOCATED AT 15921 TRINITY DRIVE IN MISSISSAUGA, ONTARIO L5T1KA; TELEPHONE (905) 564-6100.

ALL MATERIALS SHALL BE STORED AND INCORPORATED IN THE WORK AS RECOMMENDED BY THE MANUFACTURER.

SURFACE PREPARATION:

THE FACES TO WHICH THE SEAL MUST ADHERE SHALL BE SANDBLASTED CLEAN AND BE FREE OF FOREIGN MATERIAL SUCH AS DIRT, DUST GREASE, FORM OIL, RELEASE AGENTS AND ANY OTHER MATERIAL DETRIMENTAL TO ADHESION OF THE SEALANT.

APPLICATION:

JOINT SEALS SHALL BE INSTALLED ONLY WHEN THE SURFACES ARE DRY AND THE SURFACE TEMPERATURE IS ABOVE 50° F. BOTH CONCRETE SURFACES ADJACENT TO THE JOINT SEAL SHALL BE PRIMED AS RECOMMENDED BY THE MANUFACTURER. THE FOAM SEAL SHALL BE REMOVED FROM THE PACKAGING AND ITS NARROW EDGE INSERTED INTO THE JOINT OPENING. THE DEPTH FACE WITH THE SELF-ADHESIVE BACKING SHALL BE PRESSED AGAINST ONE SIDE OF THE JOINT SO THAT FOAM IS HELD IN PLACE WHILE IT RECOVERS.

AT TEMPERATURES ABOVE 70° F THE MATERIAL WILL RECOVER IN A FEW HOURS. AT TEMPERATURES BELOW 70° F THE RECOVERY SHALL BE ACCELERATED BY HEATING THE MATERIAL WITH AN OPEN FLAME, GAS BURNER, INFRA-RED LAMP OR HOT AIR BLOWER.

A CONTINUOUS LENGTH OF JOINT SEAL SHALL BE ACHIEVED BY JOINING INDIVIDUAL STRIPS ONLY BY MEANS OF SCARIFIED JOINTS CUT AT 45 DEGREES OR LESS RELATIVE TO THE SIDES OF THE JOINT. THE SCARIFIED ENDS MUST BE PUSHED WELL PAST ONE ANOTHER. THE SEAS SHALL NOT BE PULLED OR STRETCHED SO THAT GAPS BETWEEN SUCCESSIVE LENGTHS ARE PREVENTED.

METHOD OF MEASUREMENT:

FOOTAGE UNDER THIS ITEM SHALL BE THE LINEAR FEET OF BITUMEN IMPREGNATED FOAM SEAL INSTALLED IN THE OPEN JOINTS THAT ARE COMPLETE, IN PLACE AND ACCEPTED.

BASIS OF PAYMENT:

THE ACCEPTED QUANTITIES OF SEALED JOINTS SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE PER LINEAR FOOT, WHICH PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR PREPARING THE SURFACES, FURNISHING AND PLACING ALL MATERIALS AND ALL LABOR AND EQUIPMENT NECESSARY TO COMPLETE THE JOINT SEAL ACCORDING TO SPECIFICATIONS. PAYMENT WILL BE MADE UNDER THE FOLLOWING:

ITEM	UNIT	DESCRIPTION
SPECIAL	LINEAR FEET	4"X4" JOINT SEAL (BITUMEN IMPREGNATED FOAM)

ITEM 844 HIGH PERFORMANCE CONCRETE, SUPERSTRUCTURE, (DECK), AS PER PLAN

ITEM 844 HIGH PERFORMANCE CONCRETE, SUPERSTRUCTURE, (PARAPET), AS PER PLAN

THE PROVISIONS OF 844 SHALL APPLY EXCEPT AS NOTED BELOW.

SLIPFORMING

THE CONTRACTOR IS ALLOWED THE OPTION OF SLIPFORMING BRIDGE PARAPETS OVER NON TRAVELED WAYS. A MINIMUM OF 3 DAYS AFTER PLACING THE TEST SECTION THE CONTRACTOR SHALL CORE THE TEST SECTION (A MINIMUM OF 3 CORES) AT LOCATIONS AS DIRECTED BY THE ENGINEER. APPROVAL TO SLIPFORM SHALL NOT BE GRANTED UNTIL AFTER THE CORING AND AFTER A SUCCESSFUL SLIPFORMING RESULT IS OBTAINED. IN ADDITION TO THE REQUIREMENTS OF LAST PARAGRAPH OF 844.031 THE ENGINEER WILL INSPECT THE SLIPFORMED SURFACE FOR HORIZONTAL CRACKING 6 MONTHS AFTER COMPLETION OF THE SLIPFORMING OPERATION. ANY ADDITIONAL CRACKS FOUND SHALL BE REPAIRED AS PER THE SPECIFICATIONS AT NO ADDITIONAL COST TO THE STATE.

SLIPFORMING SHALL NOT BE PERFORMED DIRECTLY OVER AREAS WHERE THERE IS OR WILL BE VEHICULAR OR PEDESTRIAN TRAFFIC. AT THESE LOCATIONS, THE PARAPETS SHALL BE FORMED AND THE FOLLOWING REQUIREMENTS FOLLOWED.

[326/HIGHLAND/326GNS02.DWG] PJK 9/27/99 PLOT @ 1=1 IMP.

DESIGN AGENCY
EUTHENICS INC. CONSULTING ENGINEERS CLEVELAND, OHIO
DESIGNED BMG
DRAWN RM
CHECKED RSY
REVIEWED KRD
DATE 4-99
REVISED
STRUCTURE FILE NUMBER 1811851
GENERAL NOTES - STRUCTURES
BRIDGE NO. CUY-271-1543
CUY-271-15.43
4 / 16
40 / 57

GENERAL NOTES - STRUCTURES

THE MINIMUM CONCRETE SLUMP DURING PLACEMENT OF ALL CONCRETE PARAPETS SHALL BE 6 INCHES. THE MAXIMUM SLUMP ALLOWED DURING PLACEMENT IS 8 INCHES.

FORMS SHALL NOT BE REMOVED UNTIL AT LEAST 2 HOURS AFTER THE FINAL SET. DETERMINATION OF THE FINAL SET SHALL BE AS PER ASTM C266 (GILLMORE NEEDLE). TESTING SHALL BE PERFORMED BY THE CONTRACTOR AT NO COST TO THE STATE.

ANCHOR BOLTS FOR FENCE POSTS SHALL BE CAST IN PLACE.

THE CONTRACTOR SHALL CONSTRUCT 1 1/2" DEEP AND 1/4" WIDE CONTROL JOINTS SPACED AT A MINIMUM OF 6 FT. AND A MAXIMUM OF 8 FT. ON CENTER. THE CONTROL JOINTS SHALL BE MADE IN THE COMPLETE CIRCUMFERENCE OF THE PARAPET, STARTING AND ENDING AT THE ELEVATION OF THE TOP OF THE CONCRETE DECK. THE CONTRACTOR MAY EITHER FORM THE CONTROL JOINTS IN WITH FORM LINERS, OR WITHIN 24 HOURS OF PLACEMENT, SAW THE CONTROL JOINTS IN WITH THE USE OF AN EDGE GUIDE, FENCE OR JIG WHICH IS REQUIRED TO ENSURE THAT THE CUT JOINT IS STRAIGHT, TRUE, AND ALIGNED ON ALL FACES OF THE PARAPET. THE ENTIRE LENGTH OF EACH CONTROL JOINT SHALL BE SEALED TO A MINIMUM DEPTH OF 1 1/2" WITH A CAULKING MATERIAL CONFORMING TO FEDERAL SPECIFICATIONS, TT-S-00227E.

MIX OPTIONS

ALL OTHER CONCRETE SHALL BE THIS MIX OR MIX 2 CONCRETE. THE FOLLOWING PORPORTIONS WILL BE USED AS A STARTING MIX DESIGN.

CONCRETE TABLE
QUANTITIES PER CUBIC YARD
AGGREGATES (SSD)

MIX 4, AS PER PLAN (GGBF SLAG + MICROSILICA)

AGGREGATE TYPE	FINE AGGRE. (LB)	#8 COARSE AGGRE. (LB)	#57 COARSE AGGRE. (LB)	TOTAL (LB)	CEMENT CONTENT (LB)	GGBF SLAG (LB)	MICRO-SILICA (LB)	WATER TO CEMENTITOUS RATIO MAX	AIR CONTENT +/-2%
GRAVEL	1245	360	1315	2920	400	170	30	0.42	7
LIMESTONE	1245	360	1335	2940	400	170	30	0.42	7
SLAG	1245	315	1155	2715	400	170	30	0.42	7

THE WEIGHTS SPECIFIED IN THE CONCRETE TABLE WERE CALCULATED FOR MATERIALS OF THE FOLLOWING BULK SPECIFIC GRAVITIES (SSD): NATURAL SAND AND GRAVEL 2.62, LIMESTONE SAND 2.68, LIMESTONE 2.65, SLAG 2.30, FLY ASH 2.65, GGBF SLAG 2.90, MICROSILICA SOLIDS 2.20, AND PORTLAND CEMENT 3.15. FOR AGGREGATES OF SPECIFIC GRAVITIES DIFFERING MORE THAN PLUS OR MINUS 0.02 FROM THESE, WEIGHTS IN THE TABLE WILL BE CORRECTED.

BASE PAYMENT

PAYMENT FOR THE ABOVE COMPLETED AND ACCEPTED QUANTITIES WILL BE MADE AT THE CONTRACT BID PRICE FOR:

ITEM	UNITS	DESCRIPTION
844E48001	CUBIC YARDS	HIGH PERFORMANCE CONCRETE SUPERSTRUCTURE (DECK), AS PER PLAN
844E48021	CUBIC YARDS	HIGH PERFORMANCE CONCRETE SUPERSTRUCTURE (PARAPET), AS PER PLAN
844E48041	CUBIC YARDS	HIGH PERFORMANCE CONCRETE SUBSTRUCTURE, AS PER PLAN

ITEMS NOT INCLUDED IN BRIDGE PLANS

THE FOLLOWING ITEMS ARE NOT INCLUDED IN THE BRIDGE PLANS. SEE ROADWAY PLANS FOR DETAILS.

(A) GRADING AND HIGHWAY CONSTRUCTION

(B) RELOCATION AND/OR REMOVAL OF EXISTING UTILITIES

(C) PROPOSED DRAINAGE SYSTEM

(D) CONSTRUCTION PHASING AND SEQUENCE FOR ENTIRE PROJECT

(E) LIGHTING AND SIGNING PLANS

[326/HIGHLAND/326GNS03.DWG] PJK 9/27/99 PLOT @ 1=1 IMP.

DESIGN AGENCY
EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND, OHIO

DESIGNED BMG | DRAWN RM | REVIEWED KRD | DATE 4-99
CHECKED RSY | REVISED | STRUCTURE FILE NUMBER 1811851

GENERAL NOTES - STRUCTURES
BRIDGE NO. CUY-271-15.43

CUY-271-15.43

5 / 16

41 / 57

CALC. BY: BMG DATE: 2-12-97 | **ESTIMATED QUANTITIES** | CHK'D BY: RSY DATE: 4-15-97

ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	ABUTMENTS	PIERS	SUPER-STRUCTURE	GENERAL	AS PER PLAN SHEET REF.
202	11203	LUMP	LUMP	PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN				LUMP	3/16 & 12/16
503	21101	122	CU.YD.	UNCLASSIFIED EXCAVATION, AS PER PLAN	122				3/16
511	81400	25	LBS.	CONCRETE MISC. : REPLACEMENT OF EXISTING REINFORCING STEEL *	25				
SPECIAL	51267504	540	SQ. YD.	SEALING OF CONCRETE SURFACES (NON-EPOXY) (SEE PROPOSAL NOTE)			540		
SPECIAL	51267510	1,483	SQ. YD.	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE) (SEE PROPOSAL NOTE)	70	467	946		
516	13600	143	SQ. FT.	1" PREFORMED EXPANSION JOINT FILLER	143				
516	14500	134	SQ. FT.	STRUCTURAL JOINT OR JOINT SEALER, MISC.: 4" BITUMEN IMPREGNATED JOINT SEAL	134				
516	47001	LUMP	LUMP	JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN				LUMP	4/16
518	21200	58	CU. YD.	POROUS BACKFILL WITH FILTER FABRIC	58				
518	40000	93	LIN. FT.	6" PERFORATED CORRUGATED PLASTIC PIPE, 707.33, TYPE SP	93				
518	40010	177	LIN. FT.	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, 707.33, TYPE S	177				
601	21001	406	SQ. YD.	CONCRETE SLOPE PROTECTION, AS PER PLAN				406	4/16
SPECIAL	60739910	824	LIN. FT.	VANDAL PROTECTION FENCE, 8" STRAIGHT, COATED FABRIC			824		
843	50000	249	SQ. FT.	PATCHING CONCRETE STRUCTURES WITH TROWELABLE MORTAR *	4	245			
844	48001	621	CU. YD.	HIGH PERFORMANCE CONCRETE, SUPERSTRUCTURE (DECK), AS PER PLAN			621		5/16
844	48021	67	CU. YD.	HIGH PERFORMANCE CONCRETE, SUPERSTRUCTURE (PARAPET), AS PER PLAN			67		5/16
844	48041	68	CU. YD.	HIGH PERFORMANCE CONCRETE SUBSTRUCTURE, AS PER PLAN	47	21			5/16
863	20000	2,298	EACH	WELDED STUD SHEAR CONNECTOR			2,298		
863	50100	LUMP	LUMP	STRUCTURAL STEEL, MISC.: ANCHOR BOLT EXTENSIONS		LUMP			

* TO BE USED AS DIRECTED BY THE ENGINEER.

DESIGN AGENCY
EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND, OHIO

DESIGNED	DRAWN	REVIEWED	DATE
BMG	BMG	KRD	5-97
CHECKED	REVISED	STRUCTURE FILE NUMBER	
RSY		1811851	

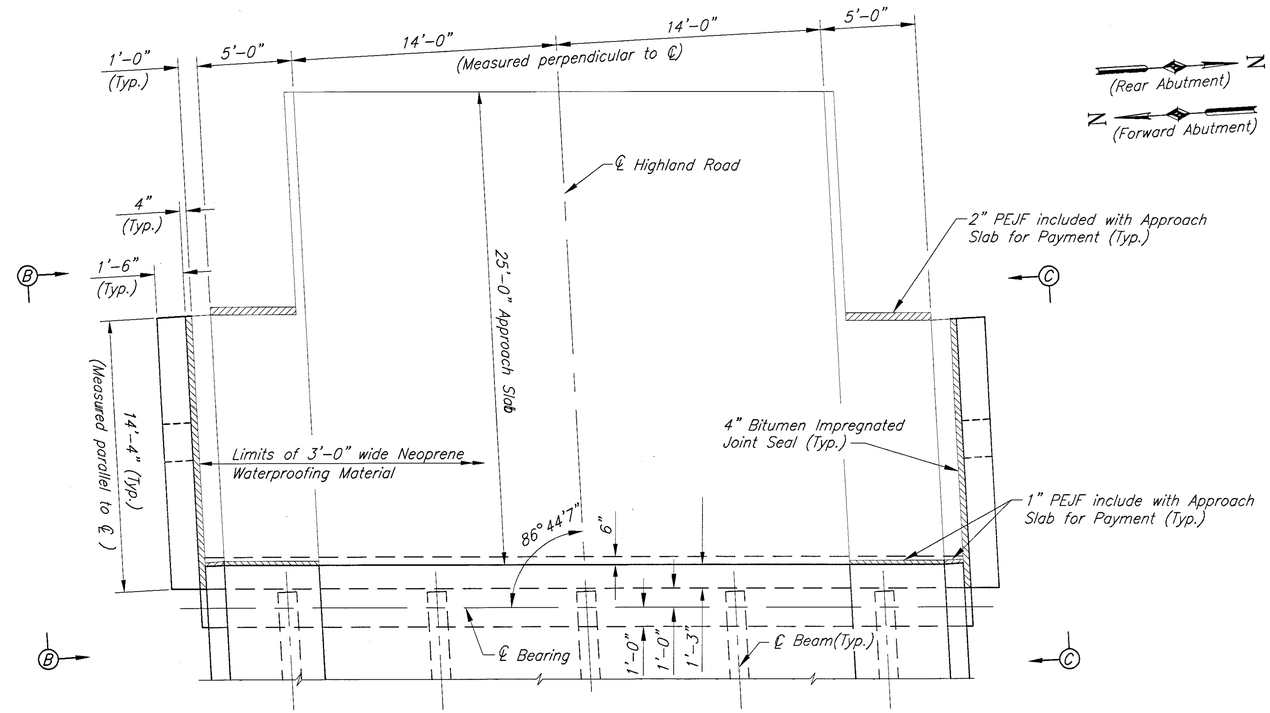
ESTIMATED QUANTITIES
BRIDGE NO. CUY-271-1543
UNDER HIGHLAND ROAD

CUY-271-15.43

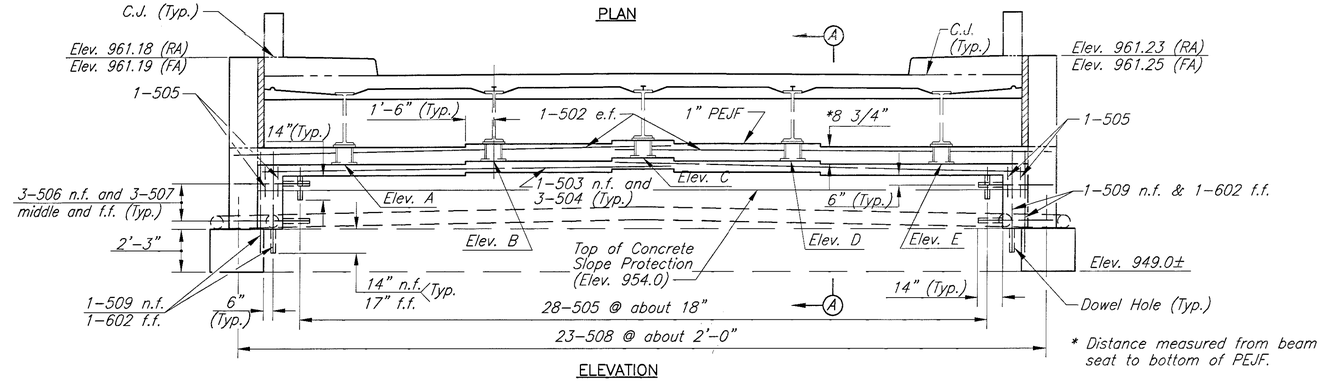
6/16

42/57

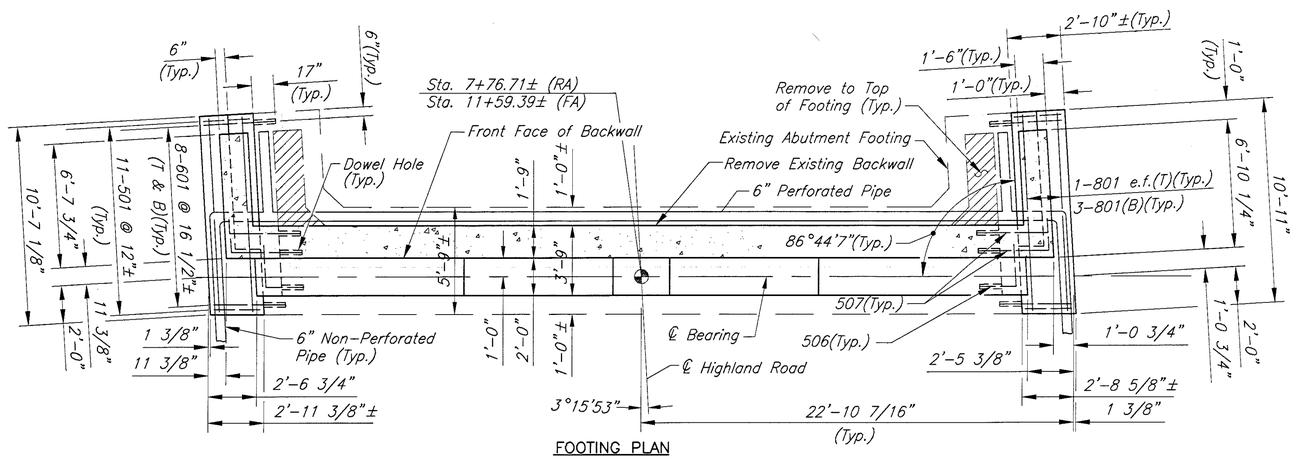
[3265020.DVG] GFH 9/27/99 1=1 IMP.



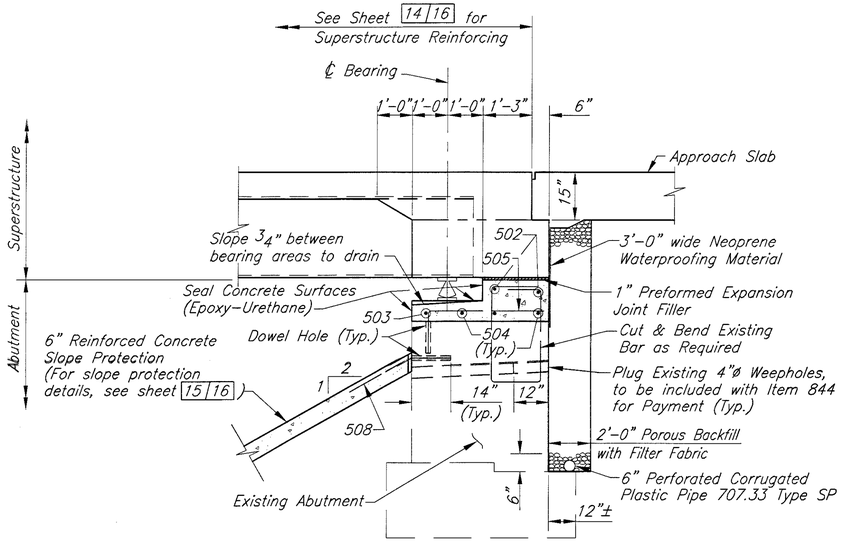
PLAN



ELEVATION

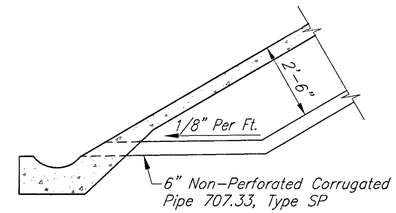


FOOTING PLAN



SECTION A-A

ELEVATIONS		
ELEV.	REAR ABUTMENT	FORWARD ABUTMENT
A	955.77	955.75
B	955.89	955.88
C	956.00	956.02
D	955.87	955.90
E	955.73	955.79



TERMINATION OF 6" PIPE AT FRONT SLOPE

(For slope protection details, see sheet 15/16)

Minimum Lap Lengths
No.5 Bars = 2'-9"

NOTES:

For top of pavement elevations along centerline bearing, see Deck Screed Elevations on sheet 13/16.

For Elevations B-B and C-C see sheet 8/16.

Porous backfill with filter fabric, 2 feet thick shall extend up to the plane of the subgrade, and to the ends of the wingwalls.

For Approach Slab notes and details see Roadway Plans.

All the reinforcing shall be prefixed A (Abutment), unless otherwise noted.

The following abbreviations are used:

Typ.	= Typical	Elev.	= Elevation
n.f	= near face	f.f.	= far face
e.f	= each face	T	= Top
PEJF	= Preformed Expansion Joint Filler	B	= Bottom
		C.J.	= Construction Joint
RA	= Rear Abutment	FA	= Forward Abutment

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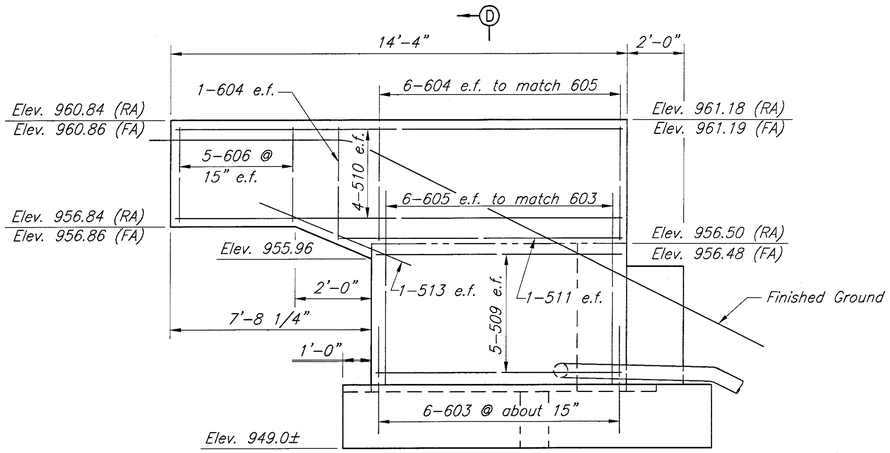
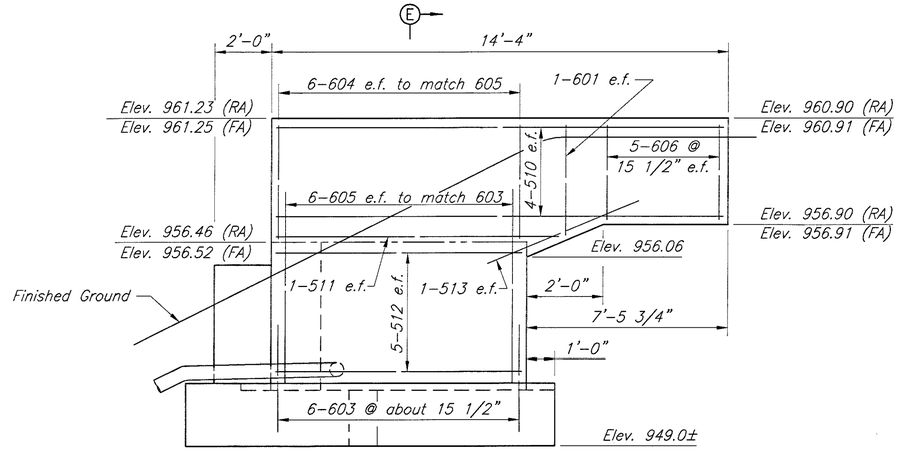
ABUTMENTS
BRIDGE NO. CUY-271-15.43
UNDER HIGHLAND ROAD

CUY-271-15.43

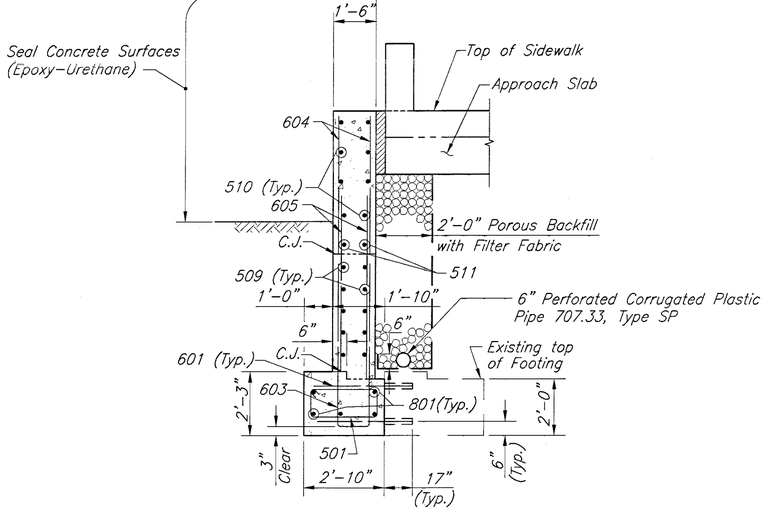
[326ABT20.DWG] PJK 9/24/99 1=4 INP.



ELEVATION B–B

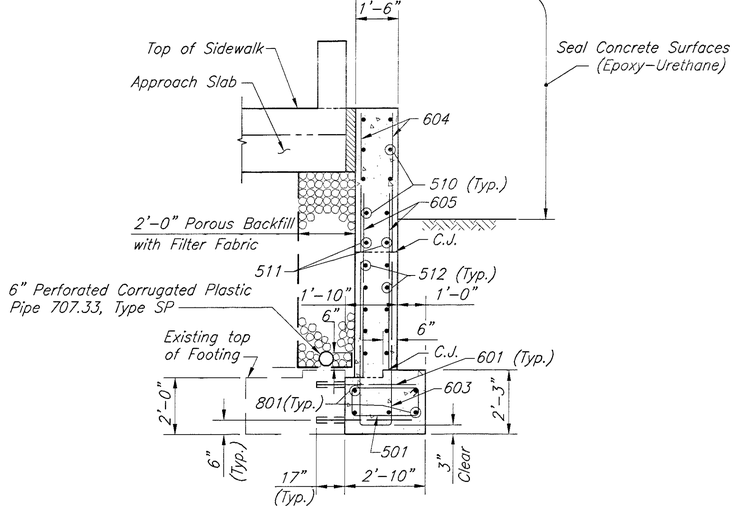


ELEVATION C–C



SECTION D–D

Minimum Lap Lengths	
No.5 Bar	2'-9"
No.6 Bar	3'-1"



SECTION E–E

Notes:

For additional notes see sheet 7/16 .

For location of elevations B–B and C–C see sheet 7/16 .

All reinforcing bar marks shall be prefixed A (Abutment).

The following abbreviations are used:

RA = Rear Abutment
FA = Forward Abutment
C.J. = Construction Jiont
e.f. = each face
(Typ.) = Typical

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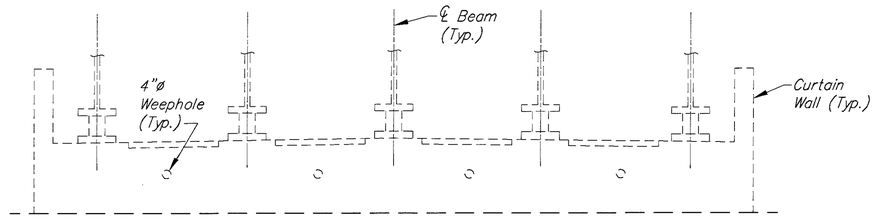
WINGWALL DETAILS
BRIDGE NO. CUY-271-1543
UNDER HIGHLAND ROAD

CUY-271-15.43

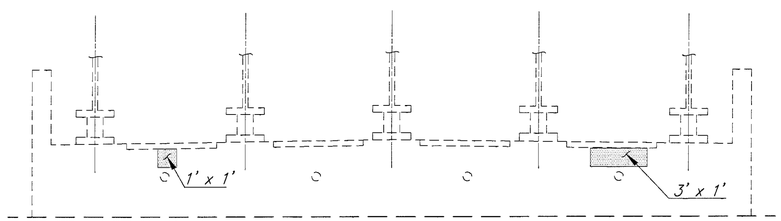
8 / 16

44
57

[326WW20.DWG] PJK 9/24/99 3=8 IMP.



REAR ABUTMENT



FORWARD ABUTMENT

LEGEND

Trowelable Mortar
(Item 843)

[328PCH02.DWG] CFH 9/24/99 PLOT 1:8

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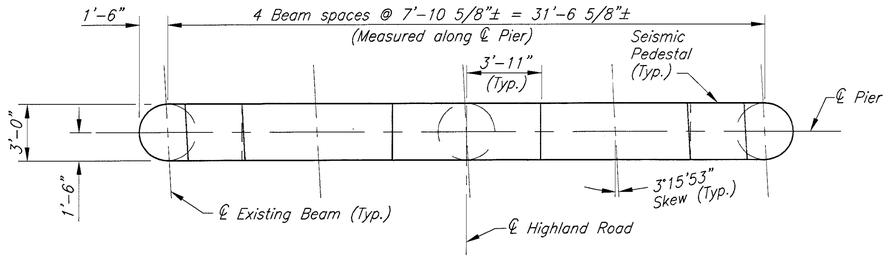
ABUTMENT PATCHING PLAN
BRIDGE NO. CUY-271-1543
UNDER HIGHLAND ROAD

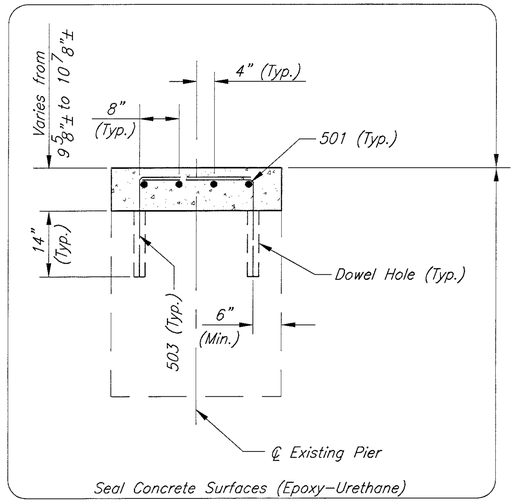
CUY-271-15.43

9 / 16

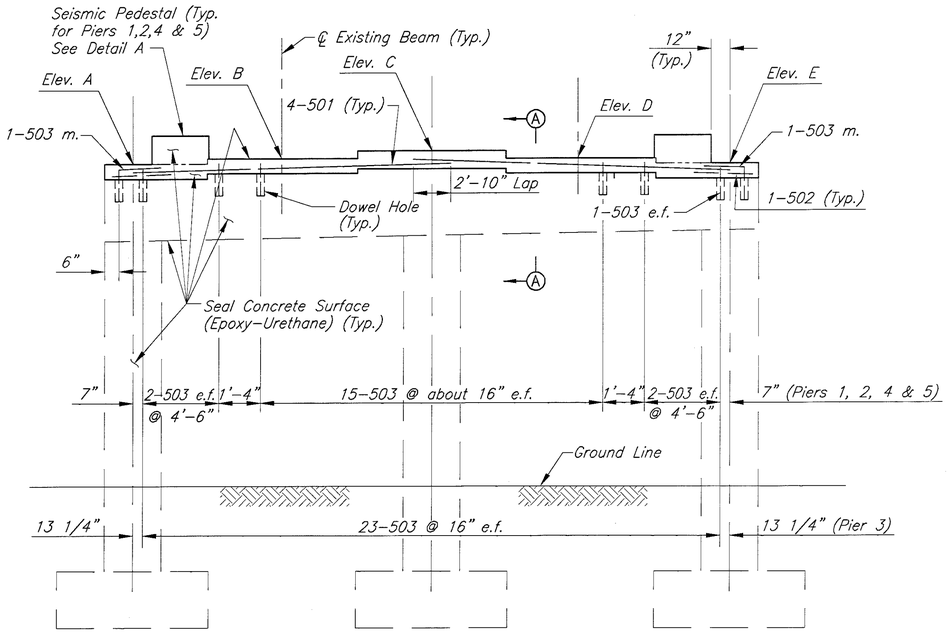
45 / 57



PLAN

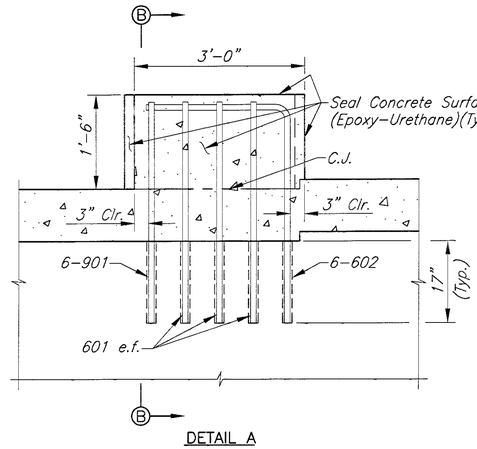


SECTION A–A



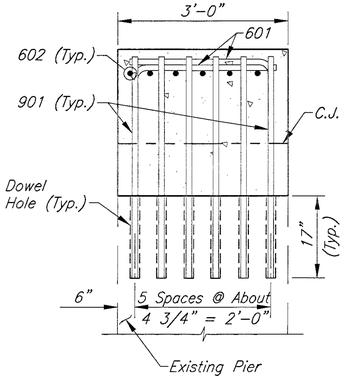
ELEVATION

ELEVATIONS					
Pier	A	B	C	D	E
1	956.38	956.49	956.61	956.48	956.35
2	957.26	957.38	957.50	957.38	957.25
3	957.56	957.68	957.80	957.68	957.56
4	957.26	957.38	957.51	957.39	957.27
5	956.36	956.49	956.62	956.51	956.39



DETAIL A

(Concrete cover will be 2" unless otherwise noted. Pier cap reinforcement not shown.)



SECTION B–B

(Pier cap reinforcement not shown)

Notes:

Dowel hole locations are based on existing plans and may be adjusted to avoid drilling bar holes through existing reinforcing steel.

For Pier 3 anchor bolt extension detail see sheet 15/16 .

All reinforcing bar marks shall be prefixed P (Pier).

For reinforcment schedule see sheet 16/16 .

For location of patching areas see sheet 11/16 .

The following abbreviations are used:

e.f. = each face (Typ.) = Typical
m. = middle Elev. = Elevation
Spa. = Spaced Clr. = Clearance

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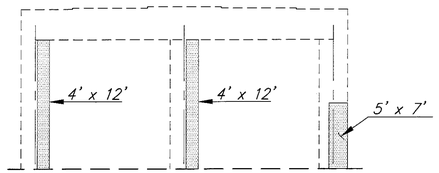
PIERS
BRIDGE NO. CUY-271-15.43
UNDER HIGHLAND ROAD
CUY-271-1543
ROAD

CUY-271-15.43

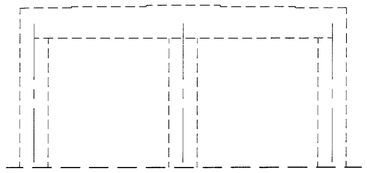
10/16

46
57

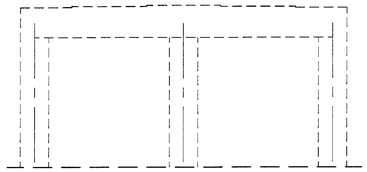
[326PR20.DWG] PJK 9/24/99 1=4 IMP.



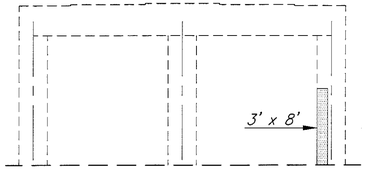
PIER 1
(East Elevation)



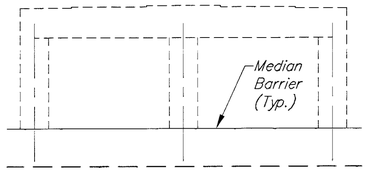
PIER 1
(West Elevation)



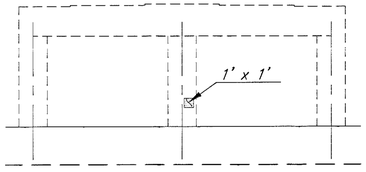
PIER 2
(East Elevation)



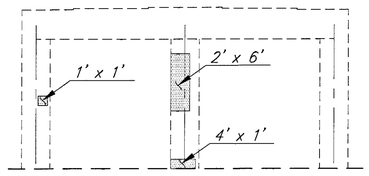
PIER 2
(West Elevation)



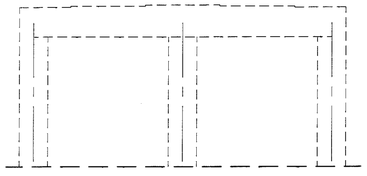
PIER 3
(East Elevation)



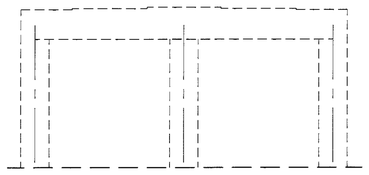
PIER 3
(West Elevation)



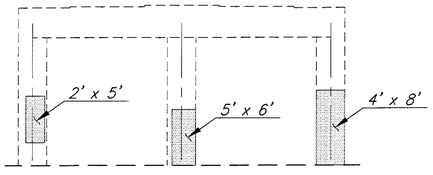
PIER 4
(East Elevation)



PIER 4
(West Elevation)



PIER 5
(East Elevation)



PIER 5
(West Elevation)

LEGEND

Trowelable Mortar
(Item 844)

[326FCH01.DWG] GFH 9/24/99 PLOT 1:8

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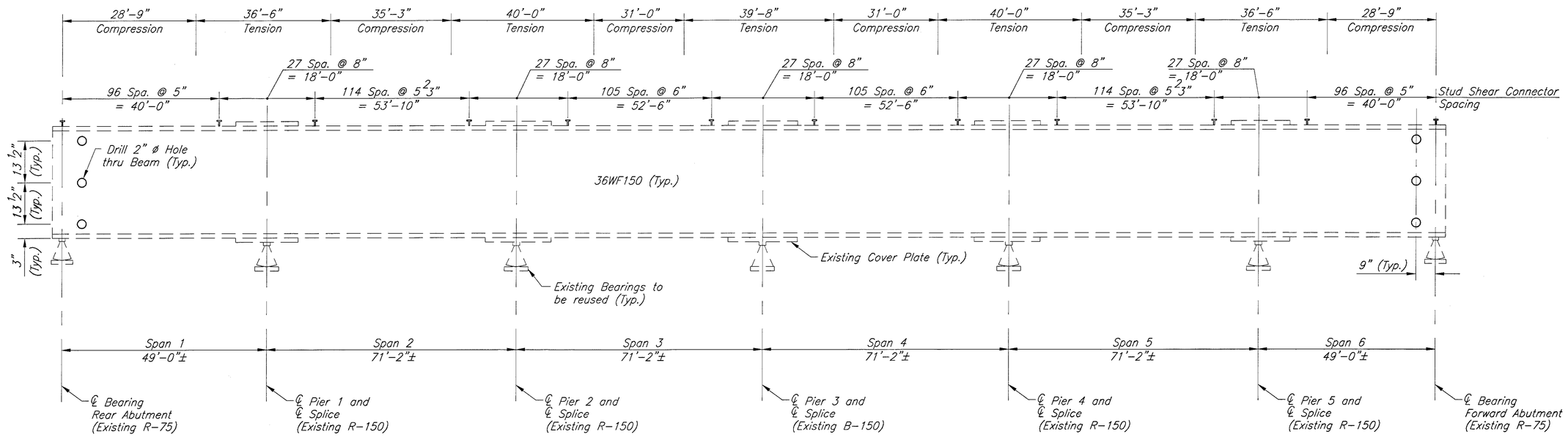
PIER PATCHING PLAN

BRIDGE NO. CUY-271-1543
UNDER HIGHLAND ROAD

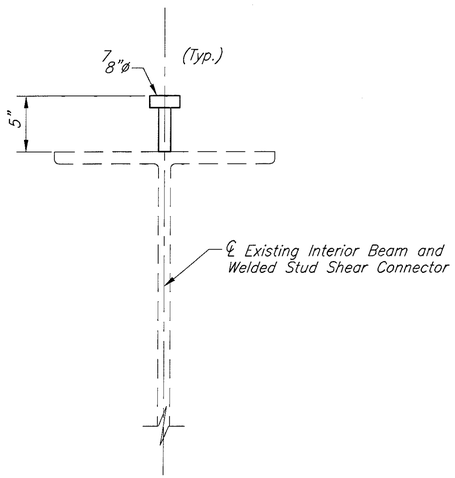
CUY-271-15.43

11 / 16

47 / 57



TYPICAL EXISTING BEAM ELEVATION



WELDED STUD SHEAR CONNECTOR DETAIL
INTERIOR BEAMS ONLY

NOTES:

Drilling of 2" ø holes in existing beam webs shall be included with Item 202, portions of structure removed, over 20 foot span, as per plan, for payment.

Replace existing 1/8" lead sheet under expansion and fixed bearings. Reset expansion bearings by shifting the base plate so that it is at the center of the sole plate at 60° F. Payment included with Item 516, Jacking and Temporary Support of Superstructure, As Per Plan.

No welded stud shear connectors shall be placed on the fascia beams.

Welded attachment of supports for concrete deck finishing machine may be made to areas of the fascia stringer flanges designated "Compression". Attachments shall not be made to areas designated "Tension". Fillet welds to compression flanges shall not be closer than 1" from edge of flange, be not more than 2" long, and not be smaller than the minimum size required by AASHTO.

The following abbreviations are used:

Typ. = Typical
Spa. = Spacing

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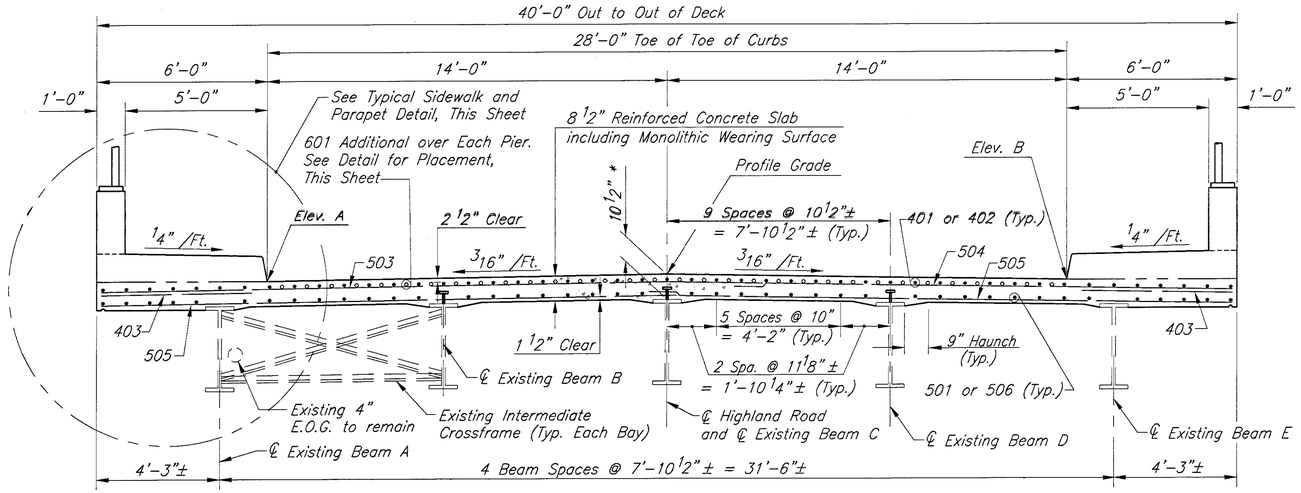
BEAM ELEVATION
BRIDGE NO. CUY-271-1543
UNDER HIGHLAND ROAD

CUY-271-15.43

12 / 16

48 / 57

[3263BE20.DWG] PJK 9/24/99 1:1 IMP.



TRANSVERSE SECTION

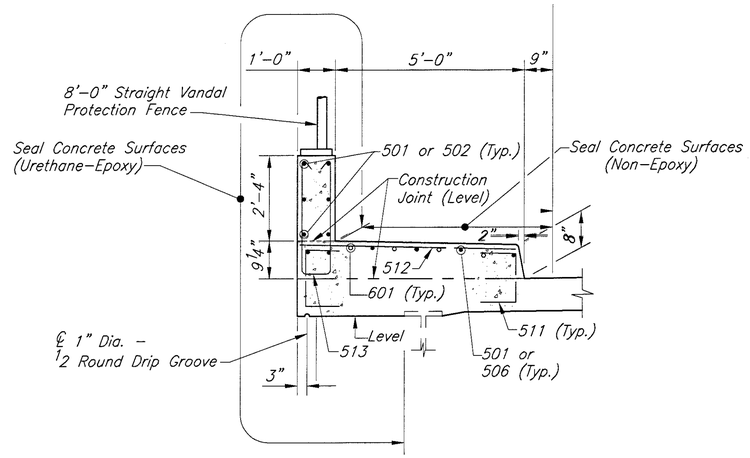
Note:

*The distance shown from top of deck slab to top of steel beam is the theoretical design dimension including the design haunch thickness of 2 inches. The quantity of deck concrete to be paid for shall be based on this dimension, minus the design haunch thickness, even though deviation from it may be necessary because the top flange of the beam may not have the exact camber or conformation required to place it parallel to the finished grade. At beams A and E this dimension is measured from the extended top of deck slab.

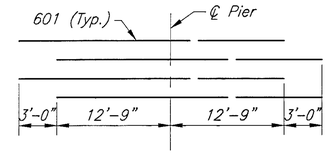
Deck Screed Elevations												
Elev.	℄ Rear Abutment	1/4	1/2	3/4	℄ Pier 1	1/4	1/2	3/4	℄ Pier 2	1/4	1/2	3/4
A	960.47	960.75	961.00	961.22	961.43	961.74	961.99	962.18	962.32	962.47	962.58	962.62
B	960.44	960.72	960.97	961.19	961.40	961.71	961.97	962.16	962.31	962.46	962.57	962.61
Beam												
A	960.45	960.73	960.97	961.20	961.41	961.71	961.97	962.15	962.29	962.44	962.55	962.59
B	960.56	960.84	961.09	961.31	961.52	961.82	962.08	962.27	962.41	962.56	962.67	962.71
C	960.67	960.95	961.20	961.42	961.64	961.94	962.20	962.39	962.53	962.68	962.79	962.83
D	960.54	960.82	961.07	961.29	961.51	961.81	962.07	962.26	962.40	962.55	962.66	962.71
E	960.41	960.69	960.94	961.16	961.37	961.68	961.95	962.13	962.28	962.43	962.54	962.58

Deck Screed Elevations													
Elev.	℄ Pier 3	1/4	1/2	3/4	℄ Pier 4	1/4	1/2	3/4	℄ Pier 5	1/4	1/2	3/4	℄ Forward Abutment
A	962.61	962.61	962.57	962.46	962.31	962.17	961.98	961.72	961.42	961.21	960.98	960.73	960.45
B	962.61	962.62	962.58	962.47	962.33	962.18	962.00	961.75	961.44	961.23	961.01	960.77	960.49
Beam													
A	962.59	962.59	962.55	962.43	962.28	962.14	961.96	961.69	961.39	961.18	960.95	960.70	960.42
B	962.71	962.71	962.67	962.56	962.41	962.27	962.08	961.82	961.52	961.31	961.08	960.83	960.56
C	962.83	962.83	962.79	962.68	962.54	962.39	962.21	961.95	961.65	961.44	961.22	960.97	960.69
D	962.71	962.71	962.67	962.56	962.42	962.28	962.09	961.84	961.53	961.32	961.10	960.85	960.58
E	962.59	962.59	962.55	962.45	962.30	962.16	961.98	961.72	961.42	961.21	960.99	960.74	960.47

Screed elevations shown are for the deck slab surface prior to concrete placement. Allowance has been made for anticipated calculated dead load deflections.



TYPICAL SIDEWALK AND PARAPET DETAIL



ADDITIONAL REINFORCEMENT OVER PIERS

NOTES:

A haunch width of 9" shall be used for computing quantity of concrete. However, the haunch width may vary between 6" and 12".

All reinforcing bar marks shall be prefixed by S (Superstructure).

For placement of superstructure reinforcing see sheet 14/16.

For Reinforcment Schedule see sheet 16/16.

For Vandal Protection Fence post spacing see sheet 14/16.

The following abbreviations are used:

Elev. = Elevation Typ. = Typical
Spa. = Spaces

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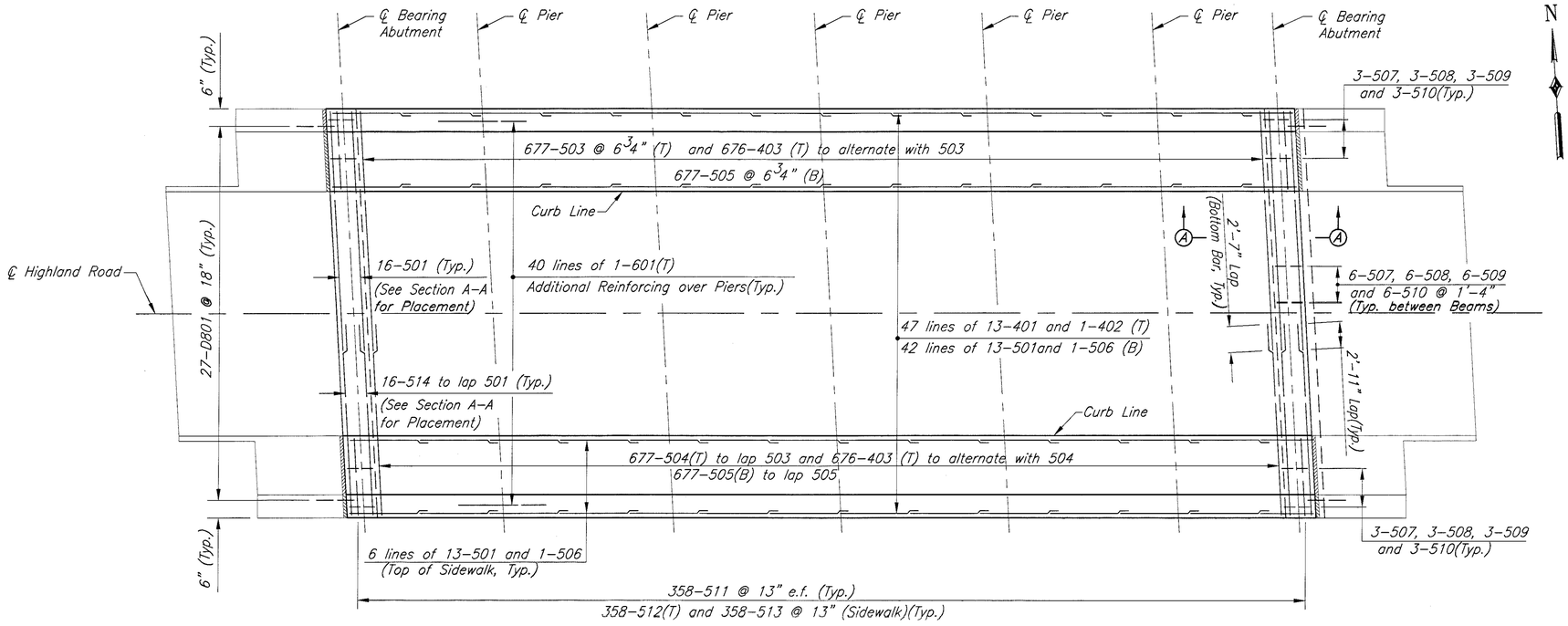
TRANSVERSE SECTION AND DETAILS
BRIDGE NO. CUY-271-1543
UNDER HIGHLAND ROAD

CUY-271-15.43

13/16

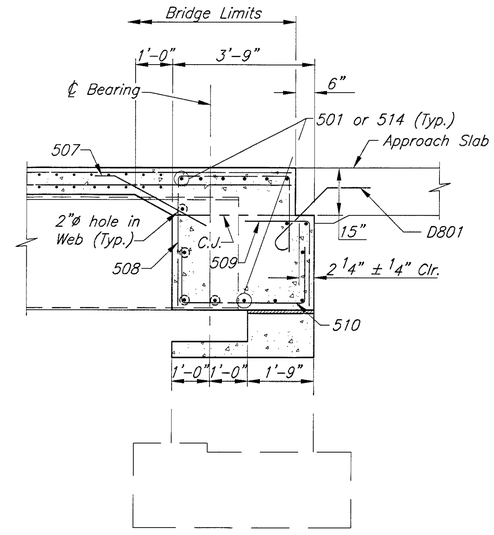
49/57

E326TSX20.DWG GFH 12/06/00 3-9 IMP.

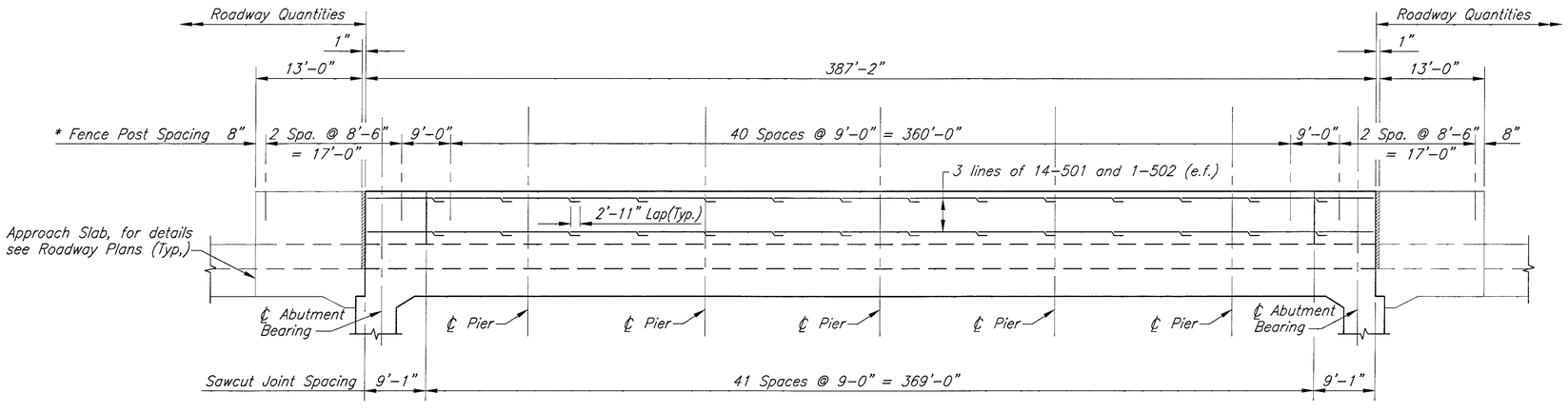


SLAB PLAN

Note: Transverse bars to be placed parallel to abutment ℄ .



SECTION A-A
(Forward Abutment shown, Rear Abutment Similar)



TYPICAL PARAPET ELEVATION
(Fence not shown)

* Payment for the fence shall be made at the contract unit price bid for Item Special, Vandal Protection Fence, 8' straight, coated fabric. Payment length shall be the overall out to out length of fence.

Minimum Lap Lengths (unless otherwise noted)	
No.4 Bar	1'-7"
No.5 Bar	2'-0"

NOTES:

For location of superstructure reinforcing see sheet 13|16

Diaphragm concrete encasing the structural member sections supported in the semi-integral type abutment shall be placed at least 48 hours before the actual deck concrete is placed.

All bar marks are prefixed S (Superstructure) unless otherwise noted.

For Vandal Protection Fence details see sheet 15|16

The following abbreviations are used:

Typ. = Typical	T = Top
Clr. = Clear Cover	B = Bottom
e.f. = each face	C.J. = Construction Joint

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SLAB PLAN AND PARAPET ELEVATIONS

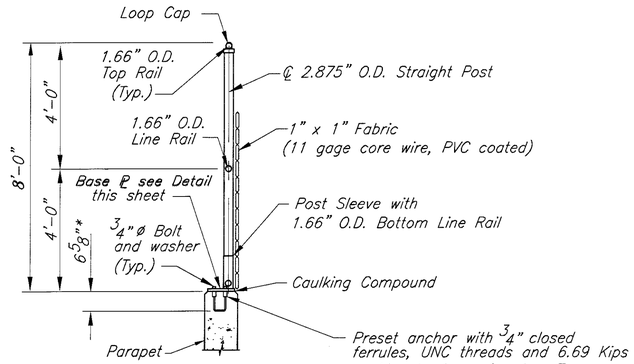
BRIDGE NO. CUY-271-1543
UNDER HIGHLAND ROAD

CUY-271-15.43

14 / 16

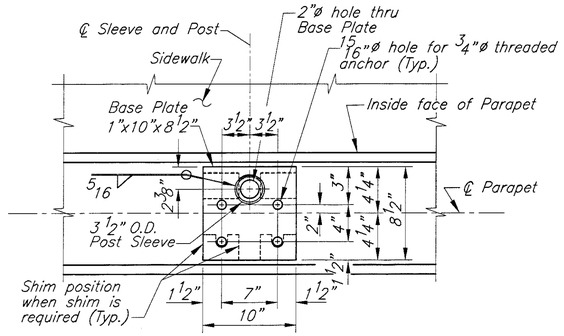
50 / 57

[326PE20.DWG] PJK 9/24/99 1=4 IMP.

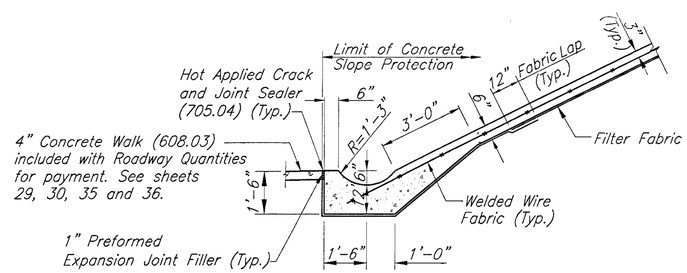


POST SECTION
(8'-0" Straight Fence)

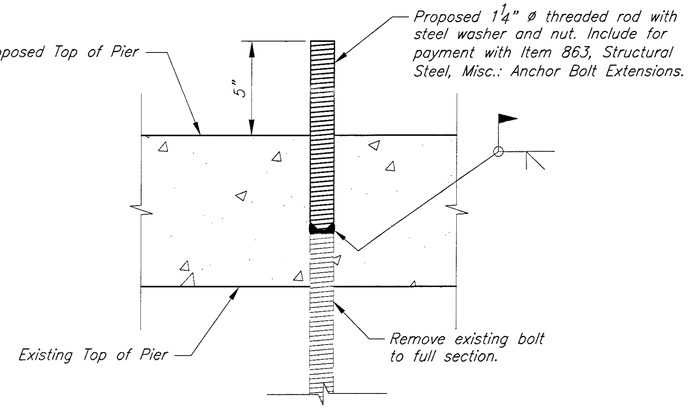
* or as recommended by the fastener manufacturer



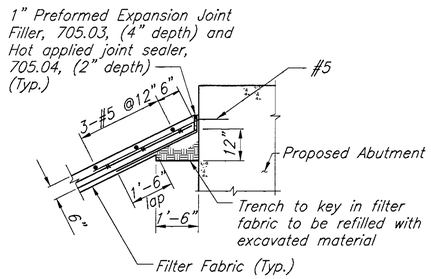
BASE PLATE DETAIL



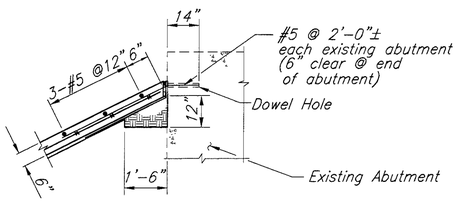
PAVED GUTTER DETAIL



ANCHOR BOLT EXTENSION DETAIL
(Bolster not shown)



TOP OF SLOPE
PROPOSED ABUTMENT DETAIL



TOP OF SLOPE
EXISTING ABUTMENT DETAIL

Notes:

Payment for removal of the existing crushed aggrgate slope protection, 3-#5 @ 12", wire fabric, filter fabric, preformed expansion joint filler and hot applied sealer shall be included with Item 601, Concrete Slope Protection, as per plan.

Filter fabric shall extend to the top of the joint. The fabric around the trench key shall be continuous and overlap a minimum of 18" as shown.

Welded Wire Fabric – 6x6, W4.0xW4.0 (58 lbs/100 sq ft) sheets only. Lap sheets a minimum of 1'-5" in both directions.

For additional fence notes and details, see Ohio Standard Drawing VFP-1-90, sheets 1, 2, 4 and 5.

DESIGN AGENCY
EUTHENES inc.
CONSULTING ENGINEERS
CLEVELAND, OHIO

DESIGNED	DRAWN	REVIEWED	DATE
BMG	BMG	KRD	4-99
CHECKED	REVISED	STRUCTURE FILE NUMBER	
GFH		1811851	

MISCELLANEOUS DETAILS
BRIDGE NO. CUY-271-1543 UNDER HIGHLAND ROAD

CUY-271-15.43

15 / 16

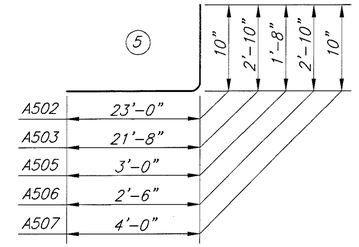
51
57

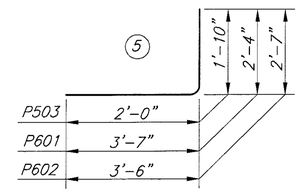
[326/BRIDGE/326CD01.DWG] PJK 9/24/99 1=4 IMP.

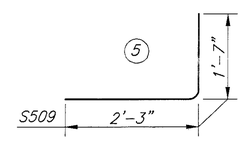
MARK	NO.	LENGTH	SHAPE	SER. INCR.	WEIGHT
ABUTMENTS					
A501	44	8'-8"	10		398
A502	8	23'-9"	5		198
A503	4	24'-5"	5		102
A504	12	21'-8"	Str.		271
A505	64	4'-7"	5		306
A506	12	5'-3"	5		66
A507	24	4'-9"	5		119
A508	46	4'-2"	9		200
A509	28	6'-3"	Str.		183
A510	32	14'-0"	Str.		467
A511	8	7'-0"	Str.		58
A512	20	6'-6"	Str.		136
A513	8	4'-8"	Str.		39
A601	68	4'-1"	Str.		417
A602	8	9'-3"	27		111
A603	24	11'-0"	6		397
A604	52	4'-4"	Str.		338
A605	48	8'-5"	Str.		607
A606	40	3'-8"	Str.		220
A801	20	10'-3"	Str.		547
TOTAL WEIGHT 5,180 LBS.					
PIERS					
P501	40	17'-2"	Str.		716
P502	10	9'-8"	45		101
P503	208	3'-9"	5		814
P601	48	5'-9"	5		415
P602	48	5'-11"	5		427
P901	48	3'-7"	Str.		585
TOTAL WEIGHT 3,058 LBS.					

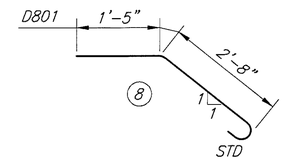
MARK	NO.	LENGTH	SHAPE	SER. INCR.	WEIGHT
SUPERSTRUCTURE					
S401	611	30'-0"	Str.		12244
S402	47	17'-5"	Str.		547
S403	1352	5'-7"	Str.		5043
S501	902	30'-0"	Str.		28224
S502	12	7'-8"	Str.		96
S503	677	24'-10"	Str.		17535
S504	677	16'-11"	Str.		11945
S505	1354	21'-2"	Str.		29892
S506	54	22'-10"	Str.		1286
S507	60	4'-4"	9		271
S508	60	8'-10"	27		553
S509	60	3'-9"	5		235
S510	60	7'-8"	6		480
S511	1432	2'-5"	6		3609
S512	716	5'-6"	Str.		4107
S513	716	6'-10"	11		5103
S514	32	12'-8"	Str.		423
S601	200	28'-6"	Str.		8561
D801	54	5'-0"	8		721
TOTAL WEIGHT 130,875 LBS.					

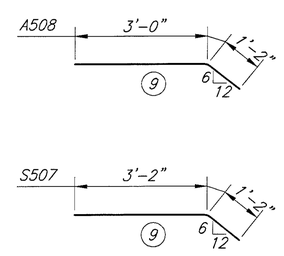
BENDING DIAGRAMS

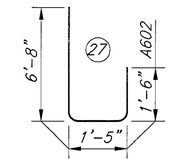


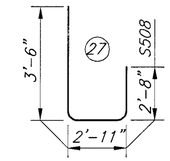


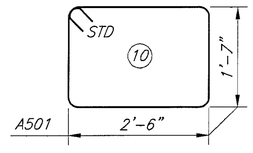


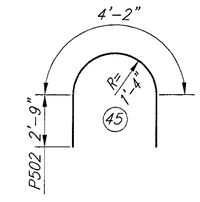


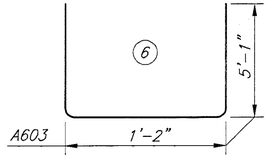


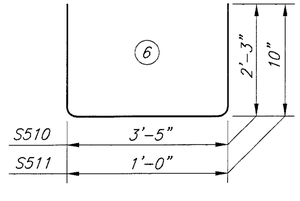


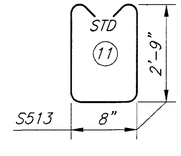












Note:

The bar size number is specified in the bar mark column. The first digit where three digits are used, and the first two digits where four are used indicates the bar size number. For example P601 is a No. 6 bar. Bar dimensions shown are out to out unless otherwise indicated. R indicates inside radius unless otherwise noted. "STD" written in place of a dimension indicates a standard bend at the end of the bar.

All reinforcing steel shall be epoxy coated.

Weight of reinforcing steel is provided for informational purposes only.

DESIGN AGENCY
EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND, OHIO

DESIGNED	DRAWN	REVIEWED	DATE
BMG	PJK	KRD	5-97
CHECKED	REVISED	STRUCTURE FILE NUMBER	
RSY		1811851	

REINFORCEMENT SCHEDULE
BRIDGE NO. CUY-271-15.43
UNDER HIGHLAND ROAD

CUY-271-15.43

16 / 16

52
57

[3264S20.DWG] PJK 9/24/99 1=1 IMP.

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

CUY-271-15.43

CITY OF HIGHLAND HEIGHTS
MAYFIELD VILLAGE
CUYAHOGA COUNTY

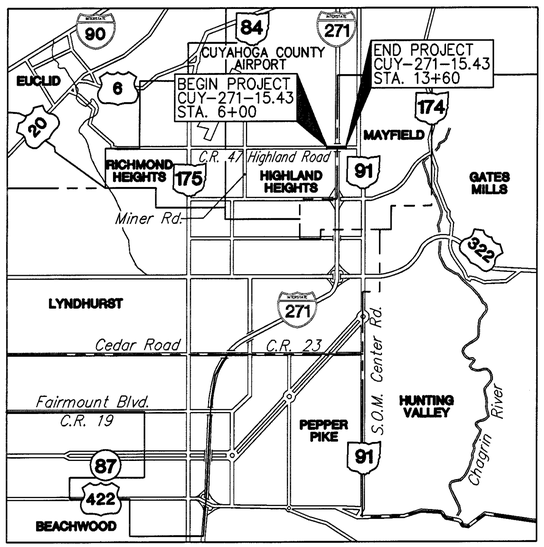
RIGHT OF WAY

CONVENTIONAL SIGNS

County Line
Township Line
Section Line
Corporation Line or
Fence Line(existing) —x—x— (proposed)
Center Line 225+ 226+
Trees Stumps (to be removed)
Utility Poles: Telephone Power Light
Limited Access (only) LA
Right of Way (only) RW
Limited Access & Right of Way LA & RW
Existing Right of Way R/W
Property Line (in existing fence)
Railroad or
Guardrail (existing) (proposed)
Construction Limits

INDEX OF SHEETS

UNDERGROUND UTILITIES
TWO WORKING DAYS
BEFORE YOU DIG
CALL...800-362-2764 (Toll Free)
OHIO UTILITIES
PROTECTION SERVICE
NON-MEMBERS
MUST BE CALLED DIRECTLY



LOCATION MAP

LATITUDE: N 41° 33' 05" LONGITUDE: W 81° 26' 40"

SCALE IN MILES
0 1 2 3 4 5 6

N

PORTION TO BE IMPROVED
INTERSTATE,U.S. & STATE ROUTES 271 322 91
OTHER ROADS 87

RIGHT OF WAY PLANS
20 0 20 40
SCALE IN FEET

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED: _____

DIVISION ADMINISTRATOR _____ DATE

PROJECT DESCRIPTION

REPLACEMENT OF BRIDGE DECK OVER I-271 AND APPROACH RECONSTRUCTION.

LIMITED ACCESS

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

ACQUIRING AGENCY: STATE OF OHIO

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 TO TRAFFIC OF HIGHLAND ROAD (C.R. 47).

APPROVED _____
DATE 12DEC2000 DISTRICT DEPUTY DIRECTOR

PLAN PREPARED BY:
EUTHENICS INC.
CONSULTING ENGINEERS
975 Keynote Circle, Cleveland, Ohio

FEDERAL PROJECT NO.
PID NO. 20738
STATE JOB NO. 522000
RAILROAD INVOLVEMENT NONE
CUY-271-15.43

[\JOBS\326\ROADWAY\RW\326TITRW.DWG] RDJ 2/18/00 PLOT @ 1:1 IMP:

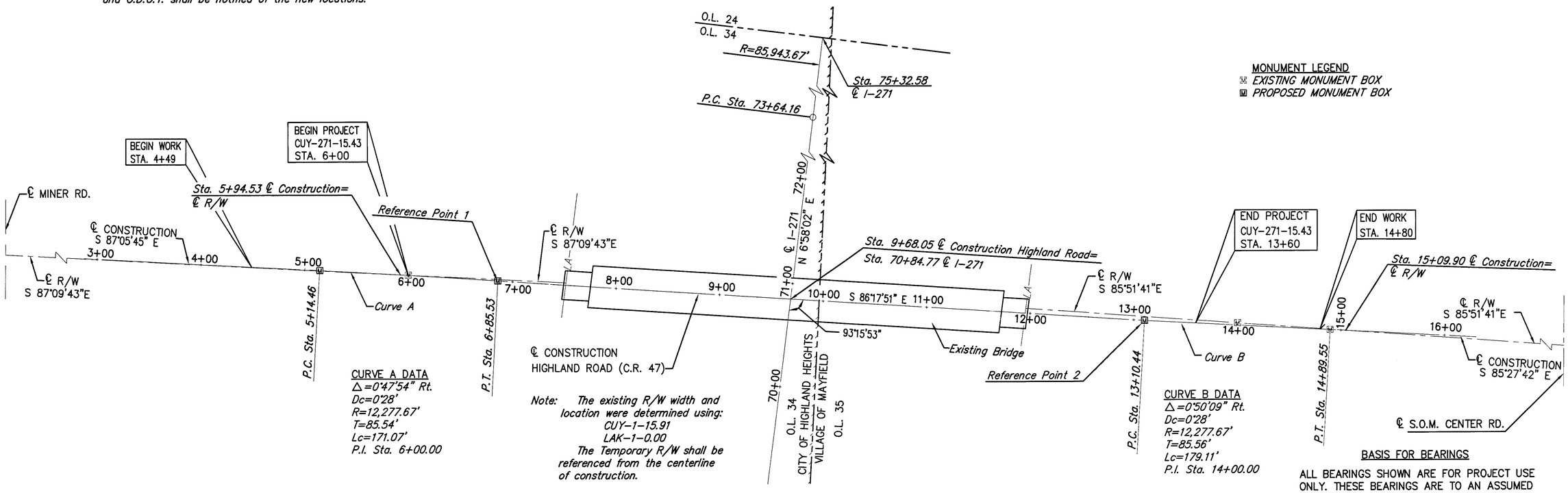
CENTERLINE PLAT

CUY–271–15.43
ORIGINAL LOT NO. 34, TRACT 1
ORIGINAL LOT NO. 35, TRACT 1
CITY OF HIGHLAND HEIGHTS
MAYFIELD VILLAGE
CUYAHOGA COUNTY

NOTE:
Cuyahoga County Roadway Monument Assembly is shown in Std. Dwg. MB–1C Of Cuyahoga County Construction Dwg. dated 3–9–92. The placing of the monuments shall be under the direction of a Registered Surveyor and are to be set, as shown by the Highway Contractor at the time of construction. Any alterations, with prior approval of the Ohio Department of Transportation, shall be noted and O.D.O.T. shall be notified of the new locations.

CUYAHOGA COUNTY ROADWAY MONUMENTS TO BE SET DURING CONSTRUCTION			
STATION	DISTANCE FROM ℄ CONSTRUCTION		CUYAHOGA COUNTY ROADWAY MONUMENT
	LEFT	RIGHT	
Sta. 5+14.46	*On ℄*	*On ℄*	*1*
Sta. 6+85.53	*On ℄*	*On ℄*	*1*
Sta. 13+10.44	*On ℄*	*On ℄*	*1*
		Total	*3*

MONUMENT LEGEND
- *EXISTING MONUMENT BOX*
- *PROPOSED MONUMENT BOX*



CURVE A DATA
△=0°47'54" Rt.
Dc=0°28'
R=12,277.67'
T=85.54'
Lc=171.07'
P.I. Sta. 6+00.00

Note: The existing R/W width and location were determined using:
CUY–1–15.91
LAK–1–0.00
The Temporary R/W shall be referenced from the centerline of construction.

CURVE B DATA
△=0°50'09" Rt.
Dc=0°28'
R=12,277.67'
T=85.56'
Lc=179.11'
P.I. Sta. 14+00.00

BASIS FOR BEARINGS

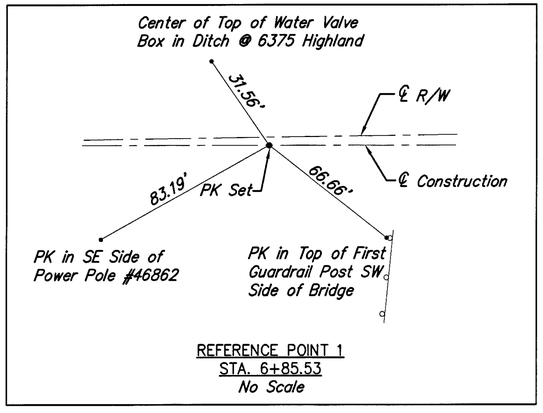
ALL BEARINGS SHOWN ARE FOR PROJECT USE ONLY. THESE BEARINGS ARE TO AN ASSUMED MERIDIAN AND ARE USED TO DELINEATE ANGLES ONLY.

I HEREBY CERTIFY THAT THIS PLAT IS A TRUE DELINEATION OF A SURVEY MADE FOR THE OHIO DEPARTMENT OF TRANSPORTATION.

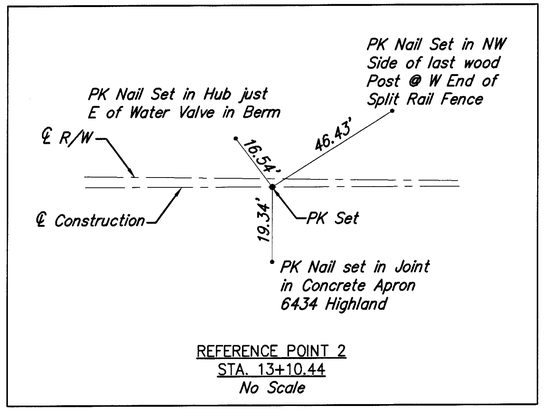
THE ESTABLISHMENT OF THE PROPERTY LINES AND EXISTING RIGHT OF WAY LINES SHOWN ON THIS PLAN AS OF THIS DATE WERE PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION.

Terin J. Kaminski
REGISTERED SURVEYOR NO. 7207

DATE: 9/1/99



REFERENCE POINT 1
STA. 6+85.53
No Scale



REFERENCE POINT 2
STA. 13+10.44
No Scale

RECEIVED _____, 19__
RECEIVED _____, 19__
BOOK _____ PAGE _____
COUNTY RECORDER

STATE OF OHIO
TERIN J. KAMINSKI
7207
REGISTERED
PROFESSIONAL LAND SURVEYOR

EUTHENICS INC.
CONSULTING ENGINEERS
975 KEYNOTE CIRCLE
CLEVELAND, OHIO 44131
(216) 749–1555

326/ROADWAY/RW/326RW103.DWG] RDJ 2/18/00 PLOT 1:50

HORIZONTAL SCALE IN FEET
0 50 100

PID NO. 20738

R/W DESIGNER DTB
R/W REVIEWER EPS

CENTERLINE PLAT

CUY-271-15.43

1 / 5

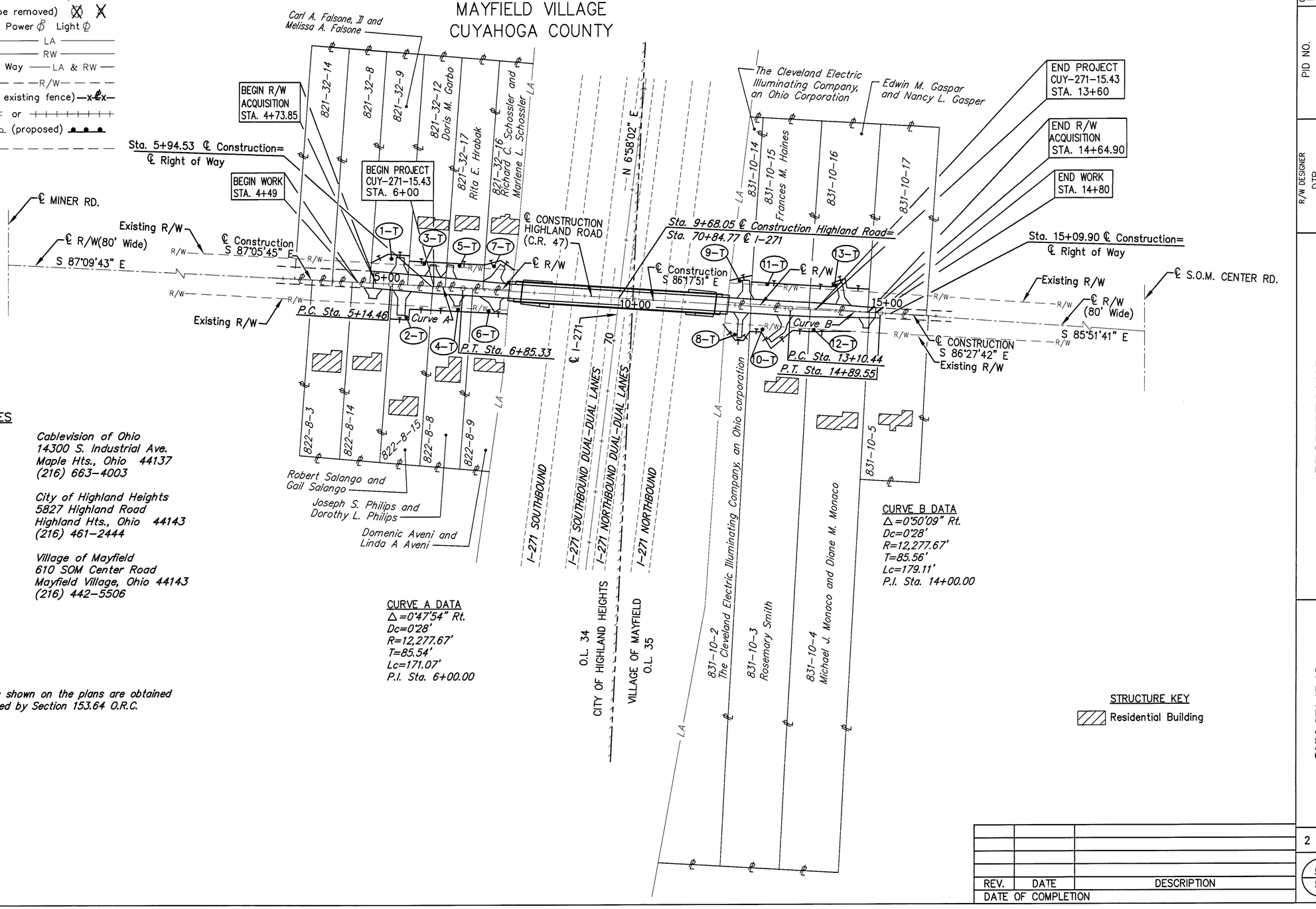
53 / 57

PROPERTY MAP

CUY-271-15.43
ORIGINAL LOT NO. 34, TRACT 1
ORIGINAL LOT NO. 35, TRACT 1
CITY OF HIGHLAND HEIGHTS
MAYFIELD VILLAGE
CUYAHOGA COUNTY

CONVENTIONAL SIGNS

County Line
Township Line
Section Line
Corporation Line or
Fence Line(existing) —X—X— (proposed) —X—X—
Center Line 225+ 226+
Trees Stumps (to be removed)
Utility Poles: Telephone Power Light
Limited Access (only) LA
Right of Way (only) RW
Limited Access & Right of Way LA & RW
Existing Right of Way R/W
Property Line (in existing fence)
Railroad or
Guardrail (existing) (proposed)
Construction Limits



UTILITIES

Ameritech
13630 Lorain Ave., Rm. 400
Cleveland, Ohio 44111
(216) 476-6142

Cablevision of Ohio
14300 S. Industrial Ave.
Maple Hts., Ohio 44137
(216) 663-4003

Cleveland Water Department
1201 Lakeside Avenue
Cleveland, Ohio 44114
(216) 664-2444

City of Highland Heights
5827 Highland Road
Highland Hts., Ohio 44143
(216) 461-2444

East Ohio Gas Company
1201 East 55th Street
Cleveland, Ohio 44103
(216) 736-6828

Village of Mayfield
610 SOM Center Road
Mayfield Village, Ohio 44143
(216) 442-5506

Cleveland Electric Illuminating Co.
4141 Rockside Road
Seven Hills, Ohio, 44131
(216) 520-9579

The location of the underground utilities shown on the plans are obtained from the owners of the utility as required by Section 153.64 O.R.C.

CURVE A DATA
Δ=0°47'54" Rt.
Dc=0°28'
R=12,277.67'
T=85.54'
Lc=171.07'
P.I. Sta. 6+00.00

CURVE B DATA
Δ=0°50'09" Rt.
Dc=0°28'
R=12,277.67'
T=85.56'
Lc=179.11'
P.I. Sta. 14+00.00

STRUCTURE KEY
Residential Building

EUTHENICS INC.
CONSULTING ENGINEERS
975 KEYNOTE CIRCLE
CLEVELAND, OHIO 44131
(216) 749-1555

REV.	DATE	DESCRIPTION
DATE OF COMPLETION		

HORIZONTAL SCALE IN FEET 0 100 200

PID NO. 20738

R/W DESIGNER DTB
R/W REVIEWER EPS

PROPERTY MAP

CUY-271-15.43

2 / 5

54
57

326/ROADWAY/RW/326RWH04.DWG] RDJ 2/18/00 PLOT 1:100

TOTAL NUMBER OF :
13 OWNERSHIPS
0 TOTAL TAKES
0 OWNERSHIPS WITH STRUCTURES INVOLVED
1 OWNERSHIPS WITH PERSONALTY ITEMS

SUMMARY OF ADDITIONAL RIGHT OF WAY

NET RESIDUE= RECORD AREA – TOTAL P.R.O. – NET TAKE
ALL AREAS IN ACRES

* DENOTES RIGHT OF WAY ENCROACHMENT

PARCEL NO.	OWNER	SHEET NO.	OWNERS RECORD BOOK	OWNERS RECORD PAGE	AUDITOR'S PARCEL	RECORD AREA	TOTAL P.R.O.	GROSS TAKE	P.R.O. IN TAKE	NET TAKE	STRUCTURE	NET RESIDUE LEFT	NET RESIDUE RIGHT	TYPE FUND	REMARKS AND PERSONALTY	AS ACQUIRED PAGE	AS ACQUIRED BOOK
1–T	Carl A. Falsone, II & Melissa A. Falsone	4	98–9284	7	821–32–9	0.780	0.069	0.023	–	0.023	–	0.780	–	State	For Grading Operations, Construction of Driveway, Sodding and Drainage		
2–T	Robert Salango and Gail Salango	4	91–2273	35	822–8–15	0.652	0.073	0.031	–	0.031	–	–	0.652	State	For Grading Operations, Construction of Driveway, Sodding and Drainage		
3–T	Doris M. Garbo	4	13399	999	821–32–12	0.782	0.069	0.017	–	0.017	–	0.782	–	State	For Grading Operations, Construction of Driveway, Sodding and Drainage		
4–T	Joseph S. Philips and Dorothy L. Philips	4	10612	233	822–8–8	0.657	0.073	0.019	–	0.019	–	–	0.657	State	For Grading Operations, Construction of Driveway, Sodding and Drainage		
5–T	Rita E. Hrabak	4	11635	265	821–32–17	0.777	0.069	0.015	–	0.015	–	0.777	–	State	For Grading Operations, Construction of Driveway, Sodding and Drainage		
6–T	Domenic Aveni and Linda A. Aveni	4	14863	521	822–8–9	0.612	0.073	0.021	–	0.021	–	–	0.612	State	For Grading Operations, Construction of Driveway, Sodding, and Drainage		
7–T	Richard C. Schossler and Marlene L. Schossler	4	12515	253	821–32–16	0.773	0.060	0.015	–	0.015	–	0.773	–	State	For Grading Operations, Construction of Driveway, Sodding, and Drainage		
8–T	The Cleveland Electric Illuminating Company, an Ohio corporation	5	12923	23	831–10–2	1.540	0.042	0.027	–	0.027	–	–	1.540	State	For Grading Operations, Construction of Driveway, Sodding, and Drainage		
9–T	The Cleveland Electric Illuminating Company, an Ohio corporation	5	12935	357	831–10–14	0.350	0.036	0.007	–	0.007	–	0.350	–	State	For Grading Operations, Construction of Driveway and Sodding		
10–T	Rosemary Smith	5	15082	101	831–10–3	3.000	0.108	0.057	–	0.057	–	–	3.000	State	For Grading Operations, Construction of Driveway, Sodding and Drainage		
11–T	Frances M. Haines	5	90–0864	5	831–10–15	1.000	0.108	0.008	–	0.008	–	1.000	–	State	For Grading Operations, Construction of Driveway, Sodding and Drainage		
12–T	Michael J. Monaco and Diane M. Monaco	5	85–3238	15	831–10–4	3.000	0.108	0.012	–	0.012	–	–	3.000	State	For Grading Operations, Sodding and Drainage		
13–T	Edwin M. Gaspar and Nancy L. Gaspar	5	13658	535	831–10–16	1.000	0.108	0.017	–	0.017	–	1.000	–	State	For Grading Operations, Construction of Driveway, Sodding, and Drainage. *Remove and Store Split Rail Fence.		

NOTE: UNDER NO CIRCUMSTANCES ARE TEMPORARY EASEMENTS TO BE USED FOR STORAGE OF MATERIAL OR EQUIPMENT BY THE CONTRACTOR UNLESS NOTED OTHERWISE.

NOTE: All Temporary Parcels To Be of 18 Months Duration

EUTHENICS INC.
CONSULTING ENGINEERS
975 KEYNOTE CIRCLE
CLEVELAND, OHIO 44131
(216) 749–1555

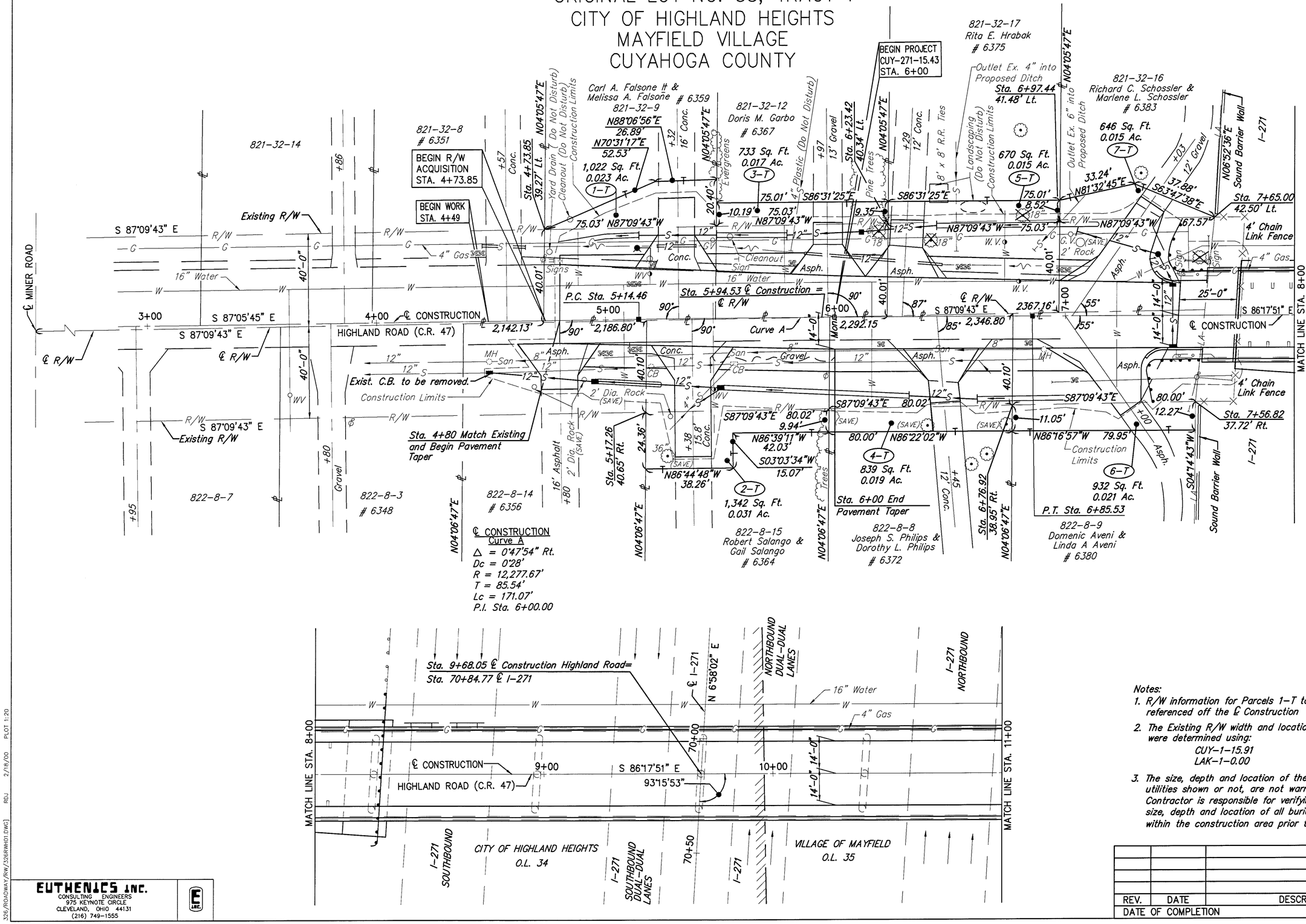
REV.	DATE	DESCRIPTION

DATE OF COMPLETION

FEDERAL PROJECT NO.
STATE JOB NO. 522000
PID NO. 20738
R/W DESIGNER DTB
R/W REVIEWER EPS
SUMMARY OF ADDITIONAL RIGHT OF WAY
CUY-271-15.43
3 / 5
55 / 57

(325/ROADWAY/RW/326RWS01.DWG.) RDJ 2/18/00 PLOT @ 1:1 IMP

ORIGINAL LOT NO. 34, TRACT 1
ORIGINAL LOT NO. 35, TRACT 1
CITY OF HIGHLAND HEIGHTS
MAYFIELD VILLAGE
CUYAHOGA COUNTY



Notes:

1. *R/W information for Parcels 1-T to 7-T are referenced off the ℄ Construction*
2. *The Existing R/W width and location were determined using:*
   CUY-1-15.91
   LAK-1-0.00
3. *The size, depth and location of the buried utilities shown or not, are not warranted. The Contractor is responsible for verifying the exact size, depth and location of all buried utilities within the construction area prior to excavation.*

REV.	DATE	DESCRIPTION

DATE OF COMPLETION

EUTHENICS INC.
CONSULTING ENGINEERS
975 KEYNOTE CIRCLE
CLEVELAND, OHIO 44131
(216) 749-1555

326/ROADWAY/RW/326RWK01.DWG] RDJ 2/18/00 PLOT 1:20

HORIZONTAL SCALE IN FEET
0 20 40

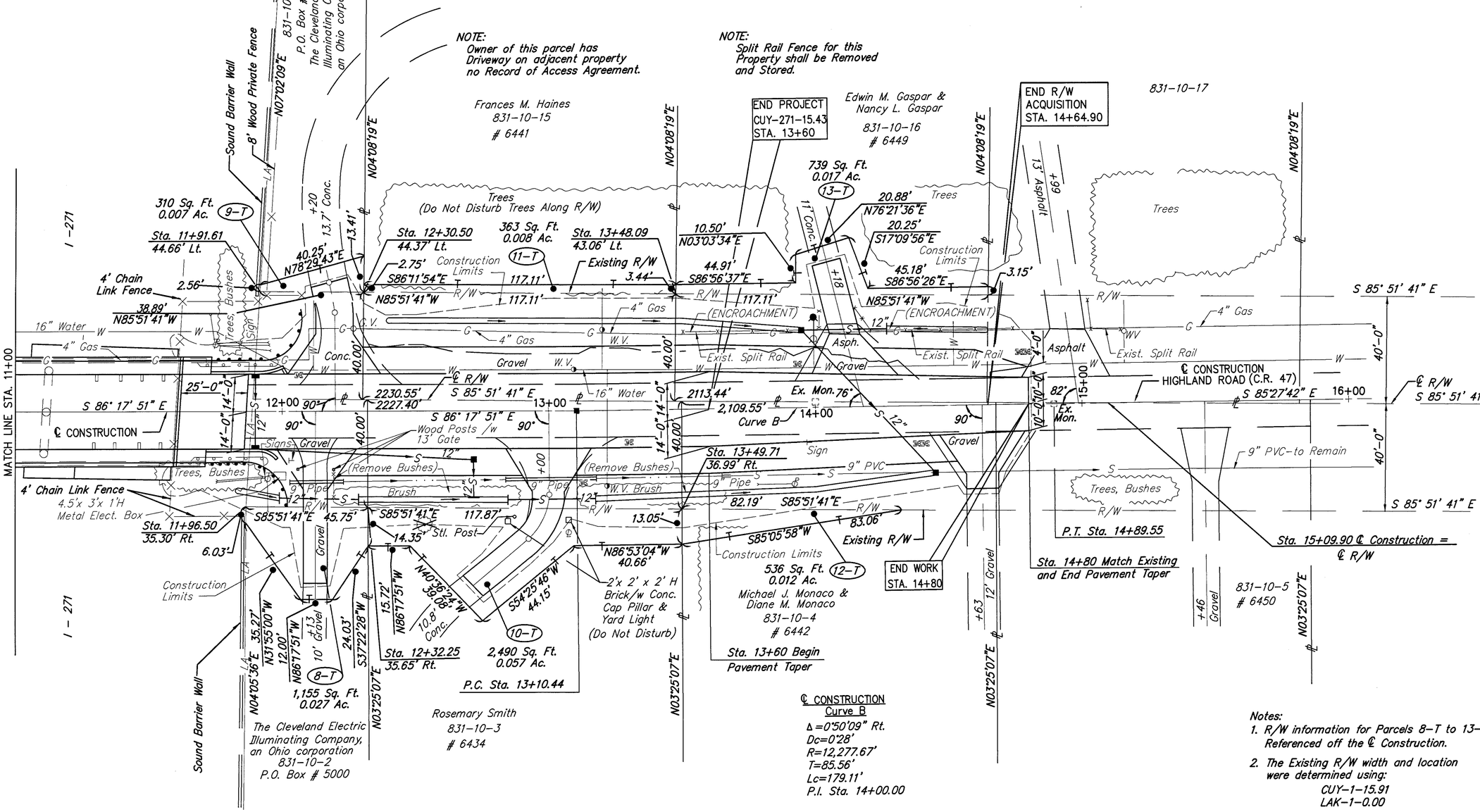
PID NO. 20738

R/W DESIGNER DTB
R/W REVIEWER EPS

RIGHT OF WAY PLAN - HIGHLAND ROAD
STA. 4+49 TO STA. 11+00

CUY-271-15.43

ORIGINAL LOT NO. 35, TRACT 1
MAYFIELD VILLAGE
CUYAHOGA COUNTY



Notes:

1. R/W information for Parcels 8-T to 13-T are Referenced off the ℄ Construction.
2. The Existing R/W width and location were determined using:
   CUY-1-15.91
   LAK-1-0.00
3. The size, depth and location of the buried utilities shown or not, are not warranted. The Contractor is responsible for verifying the exact size, depth and location of all buried utilities within the construction area prior to excavation.

REV.	DATE	DESCRIPTION

DATE OF COMPLETION

EUTHENICS INC.
CONSULTING ENGINEERS
975 KEYNOTE CIRCLE
CLEVELAND, OHIO 44131
(216) 749-1555

HORIZONTAL SCALE IN FEET
0 20 40

PID NO. 20738

R/W DESIGNER DTB
R/W REVIEWER EPS

RIGHT OF WAY PLAN - HIGHLAND ROAD
STA. 11+00 TO STA. 14+80

CUY-271-15.43

5 / 5

57 / 57

326/ROADWAY/RW/326RW1102.DWG] RDJ 2/18/00 PLOT 1:20