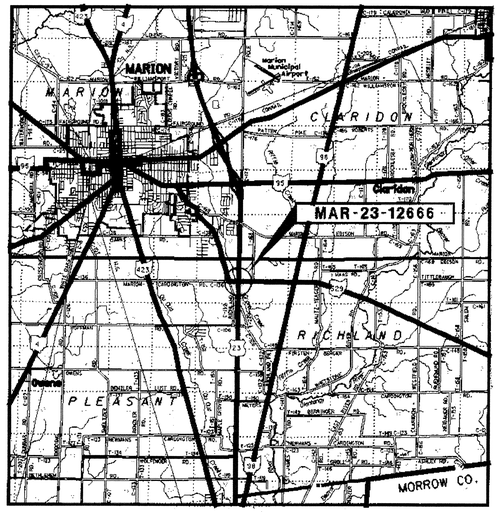
MAR-23-12.666
990297
DIST. 06
05-12-99
PID # 18016



LOCATION MAP

LATITUDE: 40°32'58" LONGITUDE: 83°01'50"

SCALE IN KILOMETERS

0 1 2 3 4

N

INTERSTATE & DIVIDED HIGHWAY
UNDIVIDED STATE & FEDERAL ROUTES
OTHER ROADS

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

MAR-23-12.666

MARION COUNTY
PLEASANT TOWNSHIP

Production 2-9-99

metric units

INDEX OF SHEETS:

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PROJECT DESCRIPTION

THIS PROJECT CONSISTS OF REPLACING THE WEARING SURFACES OF BRIDGES MAR-23-12666L&R WITH MICROSILICA OVERLAYS. THE WORK INCLUDES VARIABLE DEPTH DECK REPAIR, NEW JOINTS, AND UPGRADE OF THE ADJACENT ROADWAY GUARDRAIL.

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 NOT REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY AND THAT PROVISIONS FOR THE MAINTENANCE AND SAFETY OF TRAFFIC WILL BE AS FORTH ON THE PLANS AND ESTIMATES.

DESIGN DESIGNATION

N/A (MAINTENANCE PROJECT)

LEGAL SPEED 65 MPH (105 KPH)

DESIGN FUNCTIONAL CLASSIFICATION - RURAL ARTERIAL

DESIGN EXCEPTIONS

NONE REQUIRED

PLANS CERTIFIED BY:
Name: David R Poling Date: 2-1-99
DISTRICT 6
OHIO DEPT. OF TRANSPORTATION

UNDERGROUND UTILITIES
TWO WORKING DAYS
BEFORE YOU DIG
CALL 1-800-362-2764 (TOLL FREE)
OHIO UTILITIES PROTECTION SERVICE
NON-MEMBERS
MUST BE CALLED DIRECTLY

PLAN PREPARED BY:

CENTRAL OFFICE
OFFICE OF PRODUCTION
1980 WEST BROAD STREET
COLUMBUS, OH 43223

ENGINEERS SEAL: for Structures

STATE OF OHIO
DAVID F. TRAINI
E-48751
REGISTERED
PROFESSIONAL ENGINEER

David F. Traini
DAVID F. TRAINI DATE 1/28/99

ENGINEERS SEAL: for Roadway

STATE OF OHIO
JULIE A. DONOVAN
E-58273
REGISTERED
PROFESSIONAL ENGINEER

Julie A Donovan 1/28/99
JULIE A. DONOVAN DATE

STANDARD CONSTRUCTION DRAWINGS					SUPPLEMENTAL SPECIFICATIONS	
AS-1-81M	10-25-94	MT-35.10M	01-30-95		806	09-09-97
DS-1-94M	12-15-94	MT-35.11M	01-30-95		847	06-30-98
PCB-91M	03-20-95	MT-95.30M	04-25-94		905	04-01-98
		MT-95.40M	04-25-94		907	10-21-98
BP-3.1M	10-28-94	MT-102.10M	01-30-95			
DM-4.3M	06-30-95					
		TC-61.10M	03-31-94			
GR-1.1M	10-21-97	TC-65.10M	11-01-95			
GR-1.2M	01-03-96					
GR-1.3M	11-30-94				SPECIAL PROVISIONS	
GR-2.1M	04-14-98					
GR-3.6M	10-21-97					
GR-5.1M	04-21-95					
GR-5.3M	11-30-94					
GR-6.1M	01-03-96					

APPROVED Jack R Marchbanks
DATE 2/11/99 DISTRICT DEPUTY DIRECTOR

APPROVED Gordon Proctor
DATE 2/11/99 DIRECTOR, DEPARTMENT OF TRANSPORTATION

FEDERAL PROJECT NO. TE21-(990)(330)
PID NO. 18016
CONSTRUCTION PROJECT NO.
RAILROAD INVOLVEMENT NONE
MAR-23-12.666
1/19

EXISTING STRUCTURE VERIFICATION

Details and dimensions on these plans pertaining to the existing structure have been obtained from plans of the existing structure and from field observations and measurements. Consequently, they are indicative of the existing structure and the proposed work but they shall be considered tentative and approximate. The Contractor is referred to CMS sections 102.05 and 105.02.

Contract bid prices shall be based upon a recognition of the uncertainties described above and upon a prebid 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.

Existing plans (MAR-23-7.57) are available for review at the District 6 office, 400 East William Street, Delaware, Ohio.

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 to do so 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.

WORK LIMITS

The work limits shown on these plans are for physical construction only. The installation and operation of all temporary traffic control devices required by these plans shall be provided by the Contractor whether inside or outside these work limits.

CONNECTION BETWEEN EXISTING AND PROPOSED GUARDRAIL

When it is necessary to splice proposed guardrail to existing guardrail, only the existing guardrail shall be cut, drilled, or punched. The connection shall be made using a "W-Beam Rail Splice" as shown in AASHTO M 180. Payment shall be included in the Contract price for the respective guardrail items.

ITEM 407, TACK COAT

The rate of application of the 407 tack coat shall be subject to adjustment as directed by the Engineer. Plan quantities indicate an average application rate of 0.34 L per m^2.

ITEM 606 ANCHOR ASSEMBLY, TYPE E-98

This item shall consist of furnishing and installing either of the following guardrail end terminals.

(1) The ET-2000(1997) manufactured by SYRO, Inc., 1170 N. State Street, Girard, Ohio 44420 (Telephone: 330-545-4373).

The length of the ET-2000(1997) system is considered to be 15.24m, inclusive of two 7.62m long rail elements. Installation shall be at the locations specified in the plans, in accordance with the manufacturer's specifications as detailed on the following pre-approved shop drawings:

Dwg. No.	Dwg. Name	Dwg/Rev Date	ODOT App. Date
SS265M	ET-2000(1997) Plan, Elevation and Sections	6/20/97	3/6/98

(2) The SKT-350 manufactured by Road Systems, Inc., 7631 New Castle Drive, Frankfort, IL 60423 (Telephone: 815-464-5917).

The length of the SKT-350 system is considered to be 15.24m, inclusive of four 3.81m long rail elements. Installation shall be at the locations specified in the plans, in accordance with the manufacturer's specifications as detailed on the following pre-approved shop drawings:

Dwg. No.	Dwg. Name	Dwg/Rev Date	ODOT App. Date
SKT-4M	Sequential Kinking Terminal (SKT-350) Assembly with 4 Fdn. Tubes	12/11/97	3/6/98

The face of the Type E-98 impact head shall be covered with a sheet of Type G Reflective Sheeting, per CMS 730.19, approximately 450mm x 450mm.

Payment for the above work shall be made at the unit price bid for Item 606, Anchor Assembly, Type E-98, Each, and shall include all labor, tools, equipment and materials necessary to construct a complete and functional anchor assembly system, including all related transitions, reflective sheeting, hardware and grading, not separately specified, as required by the manufacturer.

APPROACH SLABS

After removal of the existing overlay, the Engineer shall determine the condition and soundness of each approach slab. The Engineer shall determine the extent of repairs and patching for each slab, and may designate complete replacement for slabs with extensive deterioration.

Repair and patching areas shall be as determined and designated by the Engineer.

Repairs shall apply to areas requiring full depth removal and replacement of the existing concrete. Removal of all loose and disintegrated concrete shall be made to neat lines, as determined by the Engineer, while preserving the existing reinforcement steel for reuse. Workmanship and materials shall conform to the provisions of CMS 611.

Full depth repair material shall be Class C concrete, placed to the same depth as the original.

The folowing quantities have been provided for pavement repair and patching:

ITEM 253	PAVEMENT REPAIR	$12m^3$
ITEM 203	BONDED PATCHING OF RIGID PAVEMENT, TYPE A	$30m^2$

Complete removal and replacement of an existing approach slab shall be as directed by the Engineer. The following quantities are provided for such work:

ITEM 202	APPROACH SLAB REMOVED	$223m^2$
ITEM 203	EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION	$37m^3$
ITEM 203	SUBGRADE COMPACTION	$221m^2$
ITEM 304	AGGREGATE BASE (150mm)	$33m^3$
ITEM 611	REINFORCED CONCRETE AP-APPROACH SLAB (t-380mm) AS PER PLAN	$223m^2$

Shoulder areas adjacent to approach slab repair, patching, or replacement that must, in the estimation of the Engineer, be disturbed shall be restored as directed by the Engineer and shall consist of: 150mm of Item 304 aggregate base; 350mm of Item 301 bituminous aggegate base and; 32mm of Item 448 surface course. The following quantities are provided for shoulder repair:

ITEM 203	EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION	$7m^3$
ITEM 203	SUBGRADE COMPACTION	$9m^2$
ITEM 301	BITUMINOUS AGGREGATE BASE (350mm)	$6m^3$
ITEM 304	AGGREGATE BASE (150mm)	$2m^3$
ITEM 407	TACK COAT	6L
ITEM 448	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG64-28 (32mm)	$1m^3$

All quantities provided for approach slab replacement are based upon replacement of all 4 slabs and may be be non-performed according to the Engineer's direction.

Any disturbance to the existing porous fill at the backwalls, or to any to-remain areas of the existing subbase, shall be repaired by the Contractor at no additional cost.

REPLACEMENT OF EXISTING REINFORCEMENT STEEL

In all concrete repair areas, the existing steel reinforcement is to be preserved for reuse.

Any reinforcement steel that the Engineer deems to be unusable due to damage incurred by the Contractor's operations shall be replaced with new steel at the Contractor's expense.

Any reinforcement that the Engineer finds to be unusable due to corrosion or other cross-section loss that existed prior to the concrete removal shall be replaced by new steel. The cost of such replacement bar shall be included in the price bid for the appropriate concrete item.

WATERING PERMANENT SEEDED AREAS

The following estimated quantities are to be used as directed by the Engineer to care for permanent seeded areas as per CMS 659.09:

ITEM 659	WATER	$10.8m^3$

TEMPORARY SOIL EROSION AND SEDIMENT CONTROL

The following estimated qunatities are to be used as directed by the Engineer for temporary erosion and sediment control measures:

ITEM 207	TEMPORARY SEEDING AND MULCHING	$216m^2$
ITEM 207	STRAW OR HAY BALES	32 Each
ITEM 659	WATER	$2.2m^3$

PERMANENT PAVEMENT MARKINGS

Upon completion of all work requiring maintenance of traffic, new permanent edge and lane lines shall be applied throughout the length of the project and shall extend to the limits of the markings used for the maintenance of traffic.

The following quantities have been carried to the General Summary for these markings:

ITEM 642	EDGE LINE, TYPE 2 (YELLOW)	2.650 km
ITEM 642	EDGE LINE, TYPE 2 (WHITE)	2.650 km
ITEM 642	LANE LINE, TYPE 2	2.650 km

GUARDRAIL WORK

In addition to the guardrail work locations detailed in these plans, damaged/deteriorated guardrail in locations to be determined by the Engineer shall be removed and replaced. The following quantities have been carried to the General Summary for this work:

ITEM 202	GUARDRAIL REMOVED	60m
ITEM 606	GUARDRAIL, TYPE 5	60m

ITEM SPECIAL SEALING, MISC.: SOLUBLE REACTIVE SILICATE (SRS) TREATING OF CONCRETE SURFACES

A soluble reactive silicate based treatment shall be applied to exposed new surface areas of the bridges as designated on the plans. Sealing shall not be done until all concrete work for a given bridge has been completed and cured.

DESCRIPTION: This item shall consist of the necessary labor, materials and equipment to prepare and treat the new microsilica concrete surfaces in accordance with these specifications. The treatment shall be applied at the coverage rates specified under COVERAGE for the types of surfaces and the type of treatment described herein.

MATERIALS: The treatment will be a blend of Na_xSiO_x (sodium silicates), surfactants, polymers, and stabilizers. The treatment system shall meet the following performance requirements:

1. Scaling Resistance -- Treated concrete shall pass ASTM C-672, Scaling Resistance test with a rating of 'No Scaling' after 100 cycles (non-air entrained concrete) as compared to 'Severe Scaling' on untreated concrete.

2. Absorption -- The absorption of treated concrete under total immersion shall not exceed 1.0% after 48 hours or 2.0% after 50 days (ASTM C-642, non-air entrained concrete). Concrete should be proportioned and mixed in accordance with ASTM C-672.

3. Skid Resistance -- The skid resistance of treated concrete pavement shall not reduce by more than 5% as compared to the same untreated pavement. ASTM E-274 using ASTM E-501 ribbed tire at 40mph, five test average.

The silicate treatment material selected by the Contractor shall be submitted to the Engineer for approval 30 days prior to application. The submittal shall include certified test data with stated application rates from an independent testing facility showing the product has passed all required testing listed above.

SURFACE CONDITION: Surfaces which are to be treated shall meet the approved products requirement for surface condition. The Contractor shall furnish the Engineer with documentation for surface preparation requirements and a representative of the manufacturer should be present to assure the surface condtion meets their requirements.

SURFACE PREPARATION: The surface shall be thoroughly cleaned to remove dust, dirt, oil, wax, curing components, efflorescence, laitance, coatings and other foreign materials. The use of chemicals and other cleaning compounds to facilitate the removal of these foreign materials shall be approved by the manufacturer or its representative before use. The treatment shall be applied within 48 hours following surface preparation.

Cleaning equipment shall be fitted with suitable traps, filters, drip pans and other devices to prevent oil and other foreign material from being deposited on the surface.

Required cleaning methods for new concrete surfaces are:

A. New exposed concrete surfaces which are water cured.
   1. A water blast at 48 MPa minimum

B. New exposed concrete surfaces where curing compounds have been used.
   1. A water blast at 48 MPa minimum
   2. A sandblast followed by air brooming or power sweeping to remove dust and sand from the surface and opened pores

All curing compound shall be removed.

APPLICATION: The concrete treatment shall be applied as follows:

Apply the silicate treatment at surface temperatures of 2°C and above with a brush, squeegee, roller or spraying equipment. The sealer shall be applied in accordance with the manufacturer's written instructions. All applications shall be from the same manufacturer.

If recommended by the manufacturer, the treatment shall be broomed from puddles to dry areas.

If the applicator is unable to complete the entire application continuously, the location where the application was stopped shall be noted or clearly marked.

TEST APPLICATION: Prior to final application, the Contractor shall treat a measured test coverage area on surfaces of different components of the structure to be treated for the purpose pf demonstrating the desired physical and visual effect of an application or of obtaining a visual illustration of the absorption necessary to achieve the specified coverage rate. In the latter case, the applicator shall use at least 2 liter (1/2 gallon) of treatment following the maufacturer's recommended method ofapplication for the total of the test surfaces. Test surfaces shall represent the different finish textures and planes of application that are to be encountered in sealing the structure.

COVERAGE: Silicate treatment shall be applied to concrete surfaces as designated on the plans at the rate shown in approved certified test data.

TRAFFIC: Traffic may be allowed on a surface only after a treated area appears totally dry, or five hours, whichever is shorter.

PRECAUTIONS: Precautions shall be followed as indicated on the manufacturer's MSDS.

PROTECTION OF ADJOINING SURFACES AND THE PUBLIC: When applying the treatment, the Contractor shall protect by masking off or by other means adjoining surfaces of the structure which are not to be sealed. The Contractor shall also make provision to protect the public.

Asphalt and mastic type surfaces shall be protected from spillage and heavy overspray. The treatment shall not come in contact with joint sealants which have not yet cured as per the maufacturer's instructions. Joint sealants, traffic paints and asphalt overlays may be applied to the treated surfaces 48 hours after the treatment has been applied. Adjoining and nearby surfaces of aluminum or glass shall be covered where there is a possibility of the treatment being deposited on such surfaces.

ENVIRONMENTAL REQUIREMENTS: Protect plants and vegetation from overspray by covering with drop cloths.

EQUIPMENT: Application equipment shall be that which is recommended by the manufacturer. The spray equipment, tanks, hoses, brooms, rollers, coaters, squeegees, etc., shall be thoroughly clean, free of foreign matter, oil residue and water prior to applying the treatment.

MIXING: Mixing shall be according to the maNufacturer's recommended procedures. Material shall be delivered pre-mixed and ready to use.

STORAGE: The treatment components shall be stored in tightly sealed containers in a dry location and as recommended by the manufacturer.

METHOD OF MEASUREMENT: The quantity shall be the actual area in square meters of surfaces treated and shall include surface preparation, material, application, and prequalification testing costs.

BASIS OF PAYMENT: Payment for completed work will be made at the contract price for:

ITEM SPECIAL SEALING, MISC.: SOLUBLE REACTIVE SILICATE (SRS) TREATING OF CONCRETE SURFACES

SHEET NUMBER										ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
	2					18		19							
														ROADWAY	
	223									202	22900	223	m^2	Approach Slab Removed	
	60							141		202	38000	201	m	Guardrail Removed	
						8				202	54100	8	Each	Raised Pavement Marker Removed for Storage	
	44							140		203	12000	184	m^3	Excavation Not Including Embankment Construction	
								14		203	20000	14	m^3	Embankment	
	230									203	50000	230	m^2	Subgrade Compaction	
	60							125.73		606	13000	185.73	m	Guardrail, Type 5	
								3		606	22010	3	Each	Anchor Assembly, Type E-98	
								4		606	31500	4	Each	Bridge Terminal Assembly, Type D	
								1		620	10300	1	Each	Delineator, Type C, Post Mounted	
								2		620	15300	2	Each	Delineator, Type D, Post Mounted	
														EROSION CONTROL	
	216									207	10000	216	m^2	Temporary Seeding and Mulching	
	32									207	70000	32	Each	Straw or Hay Bales	
								1082		659	10000	1082	m^2	Seeding and Mulching	
	13									659	35000	13	m^3	Water	
														PAVEMENT	
	12									253	02000	12	m^3	Pavement Repair	
						670				254	01000	670	m^2	Pavement Planing, Bituminous	
	30									256	10000	30	m^2	Bonded Patching of Rigid Pavement, Type A	
	6									301	46010	6	m^3	Bituminous Aggregate Base, PG64-28	
	35									304	20000	35	m^3	Aggregate Base	
	6					152				407	10000	158	L	Tack Coat	
	1					14.4				448	47010	15.4	m^3	Asphalt Concrete Surface Course, Type 1, PG64-28	
	223									611	25001	223	m^2	Reinforced Concrete Approach Slab (t-380mm), as Per Plan	
														TRAFFIC CONTROL	
						8				621	00100	8	Each	Raised Pavement Marker	
	5.300									642	00102	5.300	km	Edge Line, Type 2	
	2.650									642	00202	2.650	km	Lane Line, Type 2	
														STRUCTURES	
														For Structures MAR-23-12666 L&R Estimated Quantities	15

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GENERAL SUMMARY

MAR-23-12.666

SHEET NUMBER	ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
8						
					MAINTENANCE OF TRAFFIC	
32	614	11100	32	Hour	Law Enforcement Officer with Patrol Car	
10	Special	61412500	10	m^2	Replacement Sign	7
20	Special	61412600	20	Each	Replacement Drum	7
10	614	13000	10	m^3	Bituminous Concrete for Maintaining Traffic	
165	614	13200	165	Each	Barrier Reflector, Type A	
138	614	13300	138	Each	Barrier Reflector, Type B	
116	614	13350	116	Each	Object Marker	
7	614	18601	7	Sign-Month	Portable Changeable Message Sign, as Per Plan, Class I	7
3.200	614	20400	3.200	km	Temporary Lane Line, Class II	
2.450	614	22000	2.450	km	Temporary Edge Line, Class I	
5.552	614	22200	5.552	km	Temporary Edge Line, Class I, 740.06, Type I	
684	622	40020	684	m	Portable Concrete Barrier, 813mm	
146.4	622	40040	146.4	m	Portable Concrete Barrier, 813mm, Bridge Mounted	
	614	11000	Lump		Maintaining Traffic	
	623	10000	Lump		Construction Layout Stakes	
	624	10000	Lump		Mobilization	
	806	16010	4	Month	Field Office, Type B	

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GENERAL SUMMARY

MAR-23-12.666

ITEM 614 MAINTAINING TRAFFIC

Traffic shall be maintained on U.S. 23 at all times using a minimum of one lane of traffic in each direction.

Length and duration of lane closures and restrictions shall be at the approval of the Engineer. It is the intent to minimize the impact to the traveling public. Lane closures or restrictions over segments of the project in which no work is anticipated within a reasonable time frame, as determined by the Engineer, shall not be permitted. The level of utilization of maintenance of traffic devices shall be commensurate with the work in progress.

Prior to re-opening the entire roadway to traffic, permanent or temporary markings shall be in place.

All work and traffic control devices shall be in accordance with 614 and other applicable portions of the specifications, as well as the Ohio Manual of Uniform Traffic Control devices. Payment for all labor, equipment and materials shall be included in the lump sum contract price for Item 614, Maintaining Traffic, unless separately itemized in the plans.

HOLIDAY RESTRICTIONS

No lane restrictions will be permitted during the following periods when a holiday (Memorial Day, 4th of July, Labor Day, Thanksgiving, Christmas, New Year's) is on:

(A) Monday or Tuesday:
From 12 noon the Friday before the actual holiday until 12 noon the day following the holiday.

(B) Wednesday:
From 12 noon on the day before until 12 noon on the day following.

(C) Thursday or Friday:
From 12 noon on the day before until 12 noon on the Monday following.

(D) Saturday and Sunday:
12 noon on Friday until 12 noon on Monday.

There shall be no extensions for holiday requirements due to weather or material delays WHATSOEVER.

CONSTRUCTION INITIATION

The Contractor shall advise the District Office of Communications at 1-(740)-363-1251, extension 469 or by FAX at 1-(740)-369-7437, 14 days prior to the start of construction activities. The Contractor will immediately inform the District Maintenance of Traffic Engineer (ext. 323) of any and all delays and/or changes regarding the construction project. The Project Engineer will provide clarification for any questions about this notification requirement.

CONSTRUCTION PHASING

PHASE 1

The Contractor shall perform the following work in the inside lane, both directions, in this phase:

- Removal of existing latex overlay and bituminous wearing surface.
- Variable depth deck repair.
- Approach slab repairs.
- Installation of new preformed elastomeric joint seal.
- Micro-silica overlays for decks, backwall tops and existing approach slabs; new bituminous wearing surface for approach roadways.
- Install new guardrail
- All other repair and rehabilitative work, such as application of sealants, that require lane closure.

One lane traffic operations shall be maintained on the outside lane and shoulder in each direction by use of portable concrete barrier, drums and other provisions of MT-95.40M, MT-102.10M and these plans.

PHASE 2

The Contractor shall perform the following work in the outside lane, both directions, in this phase:

- Removal of existing latex overlay and bituminous wearing surface.
- Variable depth deck repair.
- Approach slab repairs.
- Installation of new preformed elastomeric joint seal.
- Micro-silica overlays for decks, backwall tops and existing approach slabs; new bituminous wearing surface for approach roadways.
- Install new guardrail
- All other repair and rehabilitative work, such as application of sealants, that require lane closure.

One lane traffic operations shall be maintained on the inside lane and shoulder in each direction by use of portable concrete barrier, drums and other provisions of MT-95.40M, MT-102.10M and these plans.

PHASE 3

The Contractor shall perform the following work in this phase:

- Install final pavement markings.
- Remove any conflicting pavement markings.
- Re-install raised pavement markers.

All activities requiring work in the roadway area shall be performed during daylight hours by use of the provisions of MT-95.30M.

NON-PHASE RESTRICTED WORK

Any work that does not require intrusion upon the traveled way or shoulders, may be performed in any or all phases provided that access to such work areas and the staging of resources for them require no incursions or restrictions upon the roadway or shoulders beyond those accommodated by the current phase or other provisions of this plan.

ITEM 614 LAW ENFORCEMENT OFFICER WITH PATROL CAR

In addition to the requirements of 614 and the latest edition of the Ohio Manual of Uniform Traffic Control Devices (OMUTCD), a uniformed law enforcement officer and official patrol car with working top mounted flashing lights shall be provided for controlling the following tasks:

- For lane closures during initial set-up periods, tear down periods, substantial shifts of a closure point or when new lane closure arrangements are initiated.

Law Enforcement Officers (L.E.O.'s) should not be used where the OMUTCD intends that flaggers be used. The LEO's are considered to be employed by the Contractor and the Contractor shall be responsible for their actions. Although they are employed by the contractor, the Project Engineer shall have control over their placement.

The official patrol car shall be a public safety vehicle as required by the Ohio Revised Code.

Information regarding arrangement and payments by the Contractor for special duty L.E.O. with patrol car may be obtained by contacting the Ohio Highway Patrol, 660 East Main Street, Columbus, Ohio, 43205, Ph. 1-(614)-466-2660.

Law Enforcement Officers with patrol car required by the traffic maintenance tasks above shall be paid at the unit price (hourly) basis under Item 614, Law Enforcement Office With patrol Car. The following estimated quantities have been carried to the Maintenance of Traffic Sub-Summary:

ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR	32 HOURS

The hours paid shall include minimum show-up time required by the Law Enforcement Agency involved.

If the Contractor wishes to utilize LEO's for flagging and traffic control other than that required in these plans, he may do so at his own expense. Payment for the excess above the contract requirements will be included under Item 614, Maintaining Traffic.

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MAINTENANCE OF TRAFFIC GENERAL NOTES

MAR-23-12.666

ITEM 614 PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN

The Contractor shall furnish, install, maintain and remove, when no longer needed, changeable message signs on site for the duration of the project. The signs shall be of a type shown on a list of approved PCMS units maintained by the Director. Only Class I signs shall be used on this project.

Each sign shall be trailer mounted and equipped with a functional dimming mechanism to dim the sign during darkness and a tamper and vandal proof enclosure. Each sign shall be provided with appropriate training and operation instructions to enable on-site personnel to operate and troubleshoot the unit. The sign shall also be capable of being powered by an electrical service drop from a local utility company.

The expected locations of the PCMS placements are shown on sheets 9 through 14. Placement, operation, maintenance and all activation of the signs by the Contractor shall be as directed by the Engineer. The PCMS shall be located in a highly visible position yet protected from traffic. The Contractor shall, at the direction of the Engineer, relocate the PCMS to improve visibility or accommodate changed conditions. When not in use, the PCMS shall be off, facing away from all traffic and shall display one or more high intensity yellow reflective sheeting surfaces of 230mm by 380mm minimum size facing traffic.

The Engineer shall be provided access to each sign unit and shall be provided with appropriate training and instructions to enable ODOT personnel to operate and troubleshoot the unit and to revise sign messages, if necessary.

All messages to be displayed on the sign will be provided by the Engineer. A list of all required preprogrammed messages will be given to the Contractor at the preconstruction conference. The sign shall have the capability to store up to 99 messages. Message memory or pre-programmed displays shall not be lost as a result of power failures to the on board computer. The sign legend shall be capable of being changed in the field. Three-line presentation formats with up to six message phases shall be supported, but normally not more than two message phases should be employed, although three phases may used in unusual conditions. PCMS format shall permit the complete message for each phase to be read at least once.

The PCMS shall contain an accurate clock and programming logic which will allow the sign to be activated, deactivated or messages changed automatically at different times of the day for different days of the week.

The PCMS unit shall be maintained in good working order by the Contractor in accordance with the provisions of 614.03 (c). The Contractor shall, prior to activating the unit, make arrangements with an authorized service agent for the PCMS to assure prompt service in the event of failure. Any failure shall not result in the sign being out of service for more than 12 hours including weekends. Failure to comply may result in an order to stop work and open all traffic lanes and/or in the Department taking appropriate action to safely control traffic and the entire cost to control traffic accrued by the Department will be deducted from the moneys due, or to become due, the Contractor on his contract.

The Contractor shall be responsible for 24 hours per day operation and maintenance of these signs on this project for the duration of the phases when the plan requires their use.

The requirement to furnish, install, maintain and remove PCMS units on this project shall not in any way relieve the Contractor of his responsibiilites as outlined in 104.04.

Payment for the above described item shall be at the contract price bid per sign-month for each Item 614 Portable Changeable Message Sign, As Per Plan and shall include all labor, materials, equipment, fuels, lubricating oils, software, hardware and incidentals to perform the above described work.

The following quantitiy has been carried to the Maintenance of Traffic Subsummary:

ITEM 614 PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN, CLASS I 7 SIGN-MO.

ANCHORS FOR PORTABLE CONCRETE BARRIER, BRIDGE MOUNTED

Anchors are not required for the portable concrete barrier in either phase.

ITEM 614 BARRIER REFLECTORS AND OBJECT MARKERS

Barrier reflectors and object markers shall be installed on all portable concrete barrier used for traffic control. Barrier reflectors and their installation shall conform to the proposal note and item 626. Spacing for barrier reflectors and object markers shall conform to Standard Drawing MT-95.40M.

TEMPORARY REFLECTORS FOR BRIDGE RAIL AND GUARD RAIL

Existing/new bridge rail and guard rail adjacent to the travel lanes in Phases 1 and 2 shall be temporarily outfitted with barrier reflectors as per section 626 of the Construction and Materials Specifications. Spacing of the relectors shall be 7.6 m center-to-center.

ITEM SPECIAL REPLACEMENT DRUM

Drums 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 Contracotr shall be replaced in kind when ordered by the Engineer. Replacement drums shall be new.

Payment for the new drums shall be made a the contract price per each for Item Special, Replacement Drum, and shall include the cost of removing and disposing of the damaged drum, and providing and maintaining the replacement drum in accordance with the contract requirements for the original drum.

The following estimated quantity has been carried to the Maintenance of Traffic Sub-Summary:

ITEM SPECIAL REPLACEMENT DRUM 20 EACH

ITEM SPECIAL REPLACEMENT SIGN

Flat sheet signs furnished by the Contractor in accordance with the requirements of the plans, specifications and proposal whcih 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 approval by the Engineer.

Payment for the new signs shall be made at the Contract price per square meter 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.

The following estimated quantity has been carried to the Maintenance of Traffic Sub-Summary:

ITEM SPECIAL REPLACEMENT SIGN 10 SQ. M.

ITEM 614 TEMPORARY WORK ZONE PAVEMENT MARKINGS

Upon completion of the phase 1 and 2 work, the closed lanes shall not be reopened to traffic until edge lines and lane lines that were removed or obliterated by the work have been restored. The following quantities have been provided for such purposes, as directed by the Engineer, and have been carried to the Maintenance of Traffic Sub-Summary:

ITEM 614 TEMPORARY EDGE LINE, CLASS I (WHITE) 1.350 KM.
ITEM 614 TEMPORARY EDGE LINE, CLASS I (YELLOW) 1.10 KM.
ITEM 614 TEMPORARY LANE LINE, CLASS II 3.20 KM.

ADDITIONAL MAINTENANCE OF TRAFFIC ITEMS

The following qunatity has been carried to the Maintenance of Traffic Sub-summary for use as directed by the Engineer:

ITEM 614 BITUMINOUS CONRETE FOR MAINTAINING TRAFFIC 10 CU. M.

ALTERNATE METHODS

If the Contractor so elects, he may submit alternative methods for the maintenance of traffic, provided the intent of the above provisions is followed. No additional inconvenience to the traveling public shall be allowed. No alternate plan shall be placed into effect until approval has been granted, in writing, by the Director.

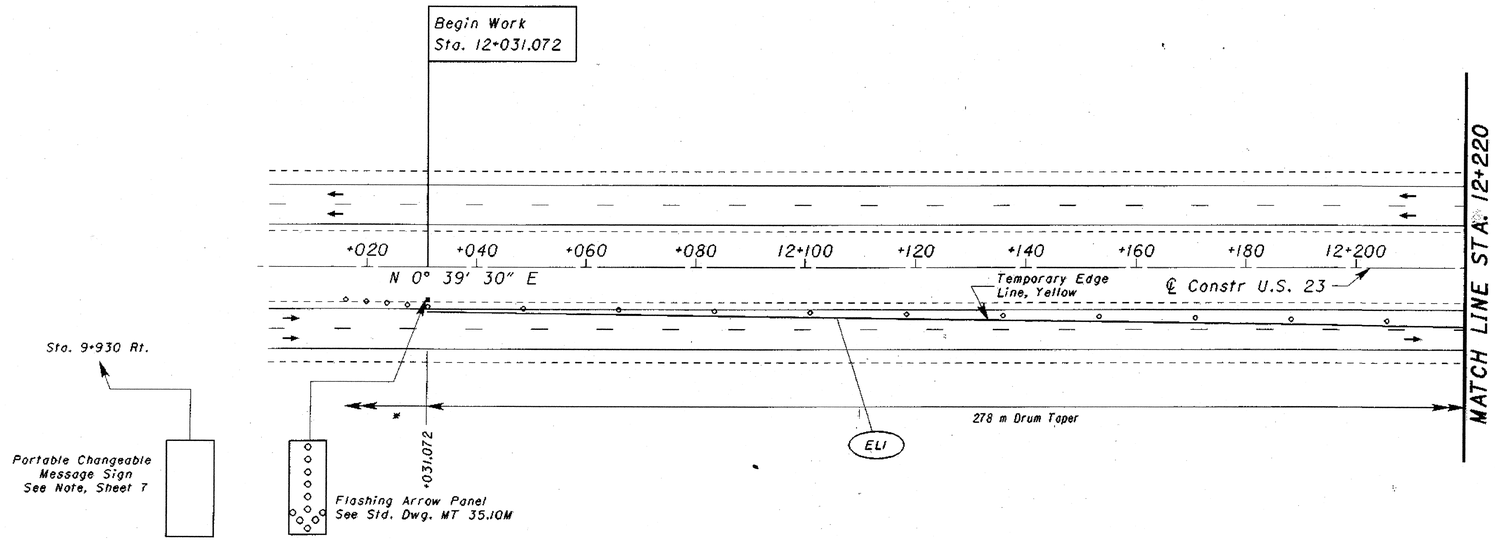
REF NO.	SHEET NO.	STATION FROM	STATION TO	SIDE	PHASE	614 Temporary Edge Line Class I, 740.06 Type I (Yellow)	614 Temporary Edge Line Class I, 740.06 Type I (White)	614 Barrier Reflector, Type B (Yellow)	614 Barrier Reflector, Type B (White)	614 Object Marker	614 Barrier Reflector, Type A (Yellow)	614 Barrier Reflector, Type A (White)	614 Law Enforcement Officer With Patrol Car	614 Portable Changeable Message Sign, As Per Plan, Class I	614 Temporary Edge Line Class I (Yellow)	614 Temporary Edge Line Class I (White)	614 Temporary Lane Line Class II	614 Bituminous Concrete for Maintaining Traffic	Special Replacement Drum	Special Replacement Sign	622 Portable Concrete Barrier, 813 mm	622 Portable Concrete Barrier, 813 mm, Bridge Mounted
						Km	Km	Each	Each	Each	Each	Each	Hours	Sign Mo.	Km	Km	Km	Cu m	Each	Sq m	m	m
EL1	9, 10	12+031.072	12+863.522	Rt.	1	0.833																
EL2	9, 10	12+309.072	12+863.522	Rt.	1		0.555															
EL3	9, 10, 11	12+503.072	13+335.522	Lt.	1	0.833																
EL4	9, 10	12+503.072	13+057.522	Lt.	1		0.555															
PCB1	10	12+520.072	12+664.072	Rt.	1			20		20											145.1	
		12+664.997	12+701.597	Rt.	1			5		5												36.6
		12+701.597	12+727.522	Rt.	1			4		4											25.9	
PCB2	10	12+639.072	12+664.997	Lt.	1			4		4											25.9	
		12+664.997	12+701.597	Lt.	1			5		5												36.6
		12+701.597	12+846.522	Lt.	1			20		20											145.1	
BR1	9, 10	12+241.364	12+663.867	Rt.	1							57										
		12+663.867	12+703.135	Rt.	1				5													
		12+703.135	12+806.000	Rt.	1							14										
BR2	9, 10	12+503.0715	12+663.458	Lt.	1							21										
		12+663.458	12+702.727	Lt.	1				6													
		12+702.727	12+893.221	Lt.	1							26										
EL5	12, 13	12+031.072	12+863.522	Rt.	2		0.833															
EL6	12, 13	12+309.072	12+863.522	Rt.	2	0.555																
EL7	12, 13, 14	12+503.072	13+335.522	Lt.	2		0.833															
EL8	12, 13	12+503.072	13+057.522	Lt.	2	0.555																
PCB3	13	12+520.072	12+664.072	Rt.	2				20	20											145.1	
		12+664.997	12+701.597	Rt.	2				5	5												36.6
		12+701.597	12+727.522	Rt.	2				4	4											25.9	
PCB4	13	12+639.072	12+664.997	Lt.	2				4	4											25.9	
		12+664.997	12+701.597	Lt.	2				5	5												36.6
		12+701.597	12+846.522	Lt.	2				20	20											145.1	
BR3	12	12+279.526	12+366.488	Rt.	2						13											
BR4	13	12+589.815	12+663.729	Rt.	2						11											
		12+663.729	12+702.523	Rt.	2			5														
BR5	12	12+336.980	12+423.912	Lt.	2						13											
BR6	13	12+664.070	12+702.864	Lt.	2			6														
		12+702.864	12+776.775	Lt.	2						10											
notes	6, 7												32	7	1.100	1.350	3.200	10	20	10		
SUBTOTALS						2.776	2.776	69	69		47	118			1.100	1.350						
TOTALS CARRIED TO GENERAL SUMMARY						5.552		138		116	165		32	7	2.450		3.200	10	20	10	684	146.4

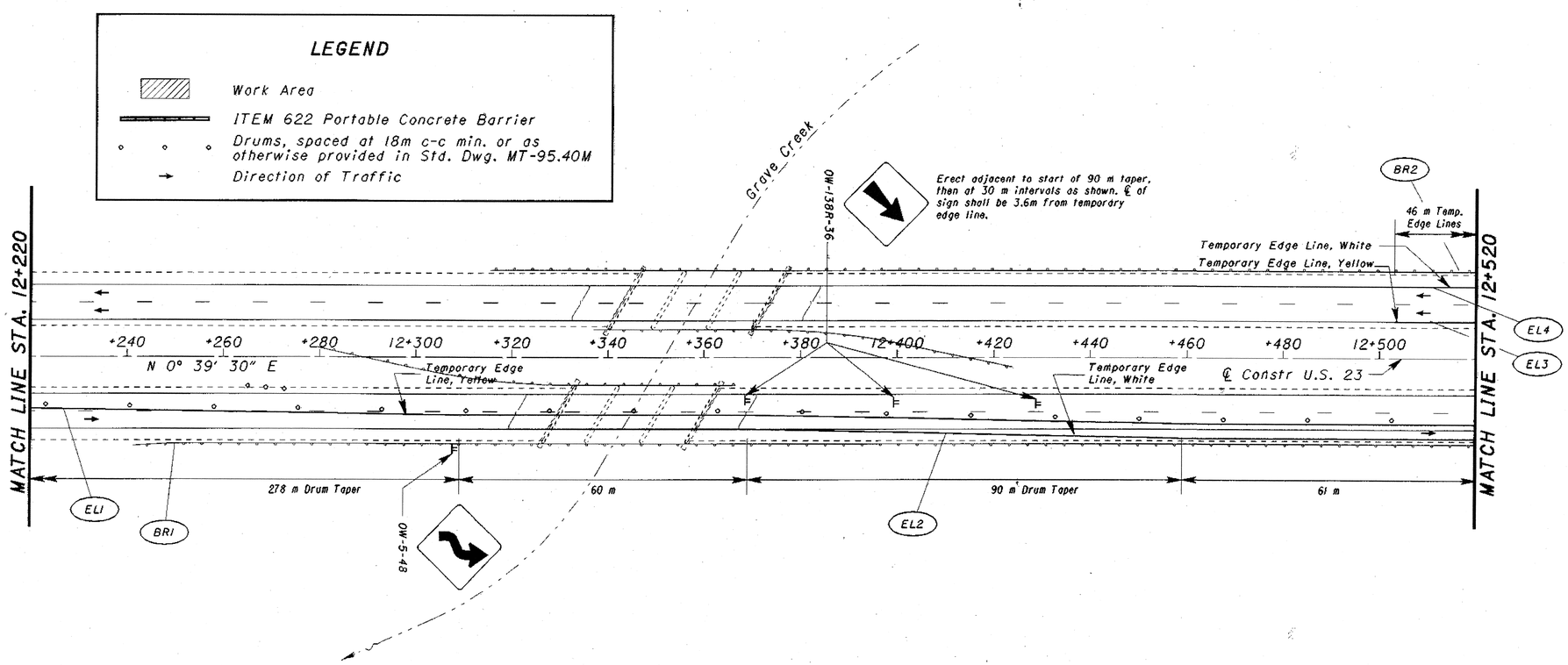
CALCULATED AP
CHECKED JAD

MAINTENANCE OF TRAFFIC SUBSUMMARY

MAR-23-12.666

* For advance warning signs and other details, see Std. Dwg. MT-95.40M



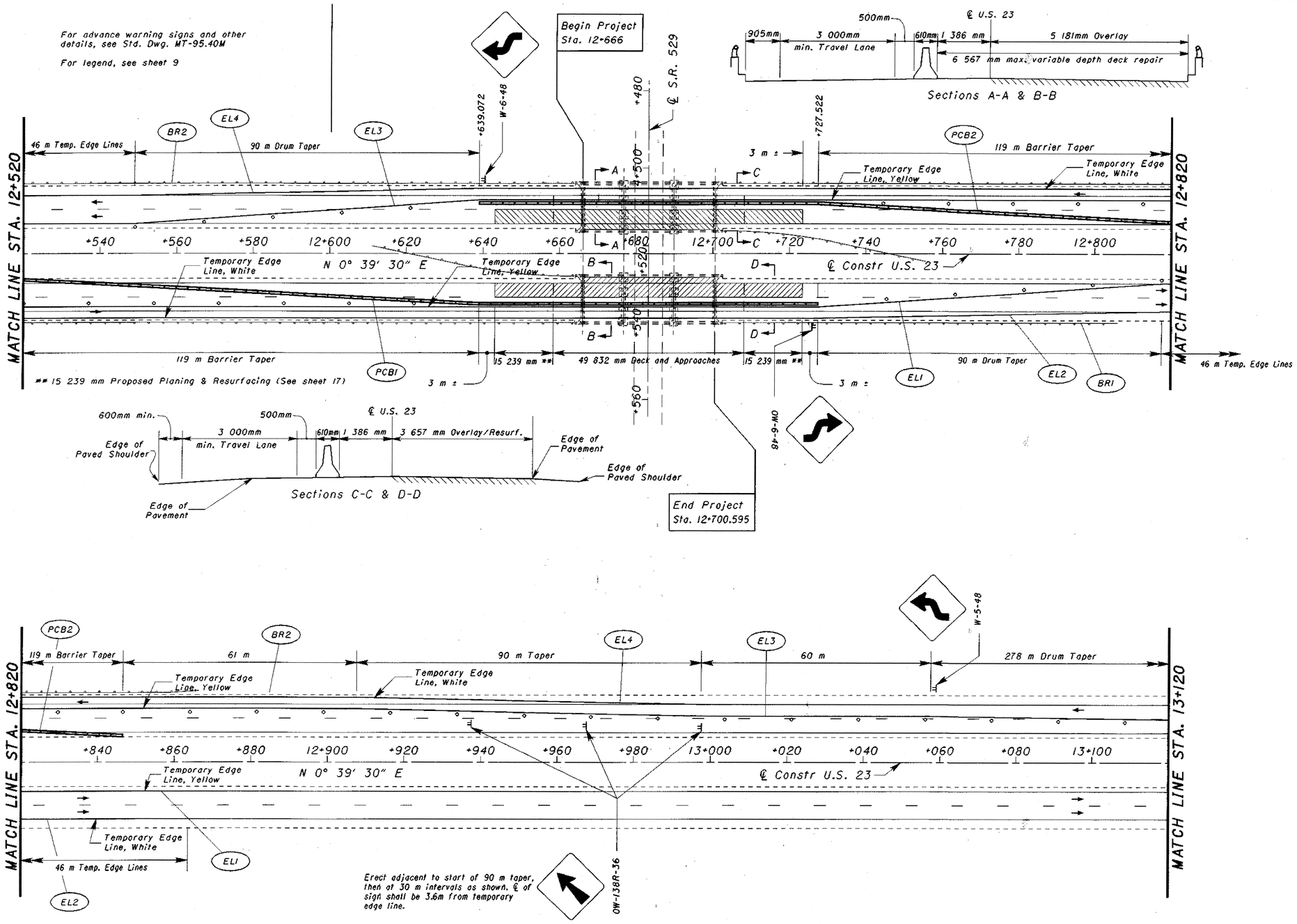


HORIZONTAL SCALE IN METERS

CALCULATED AP
CHECKED JAD

PHASE 1 MAINTENANCE OF TRAFFIC
BR. MAR-23-12.666 STA. 12+200 TO STA. 12+520

MAR-23-12.666



HORIZONTAL SCALE IN METERS

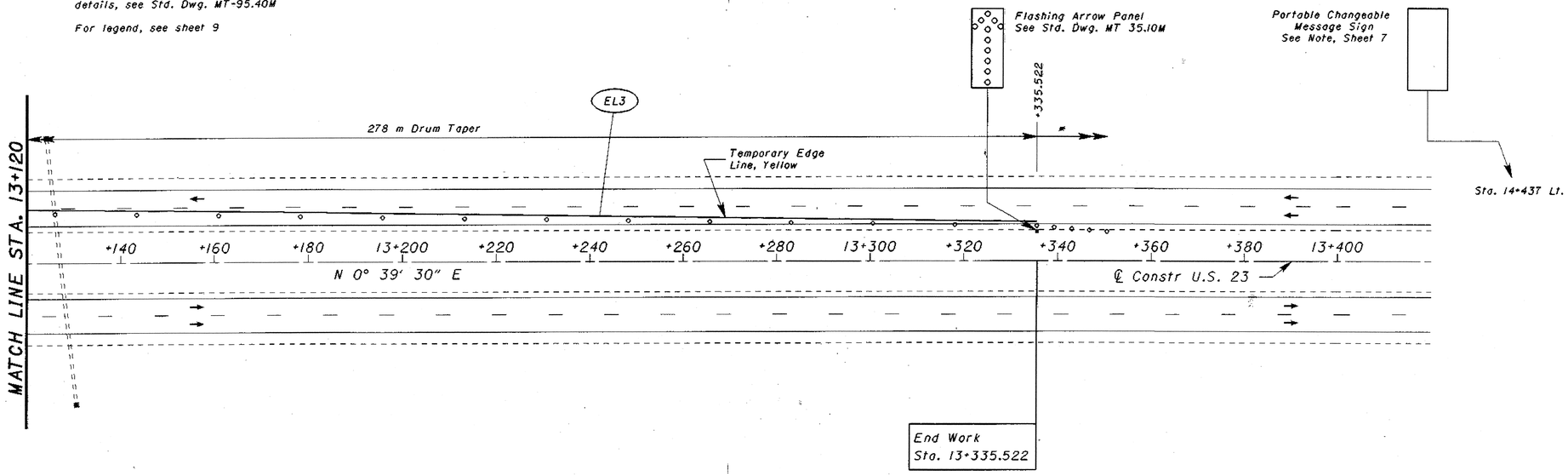
CALCULATED AP
CHECKED JAD

PHASE 1 MAINTENANCE OF TRAFFIC
BR. MAR-23-12.666 STA. 12+520 TO STA. 13+120

MAR-23-12.666

* For advance warning signs and other details, see Std. Dwg. MT-95.40M

For legend, see sheet 9



HORIZONTAL SCALE IN METERS

0 10 20

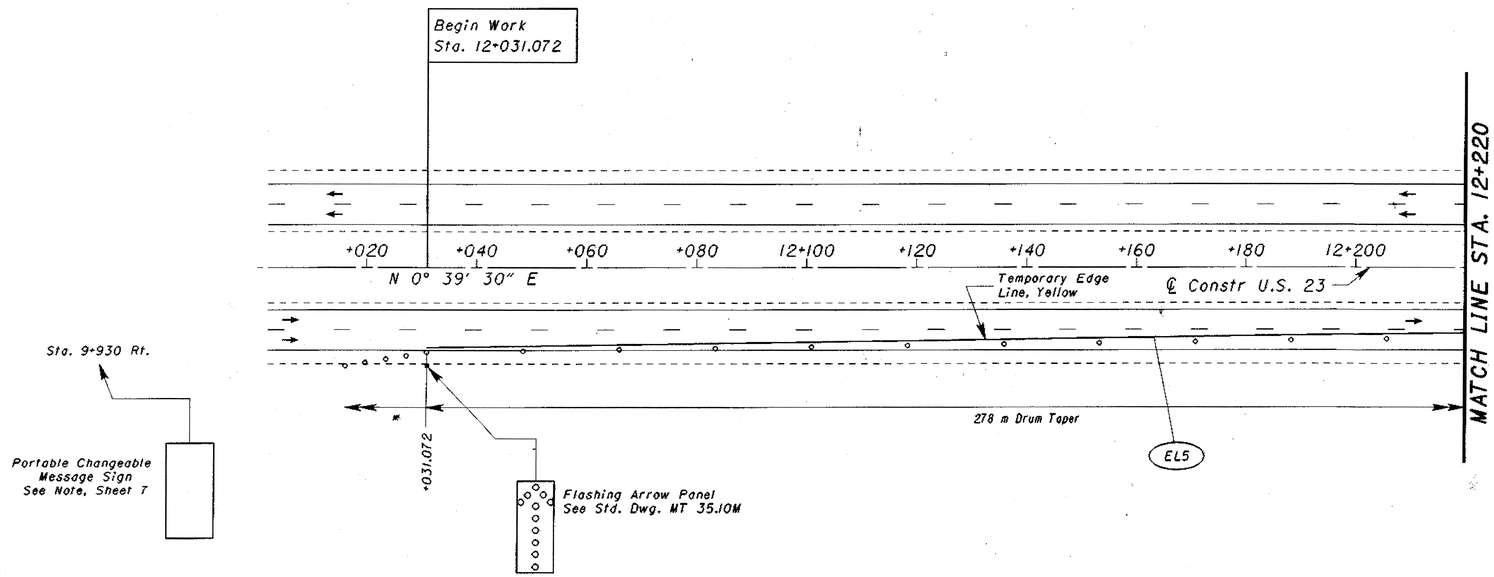
CALCULATED AP

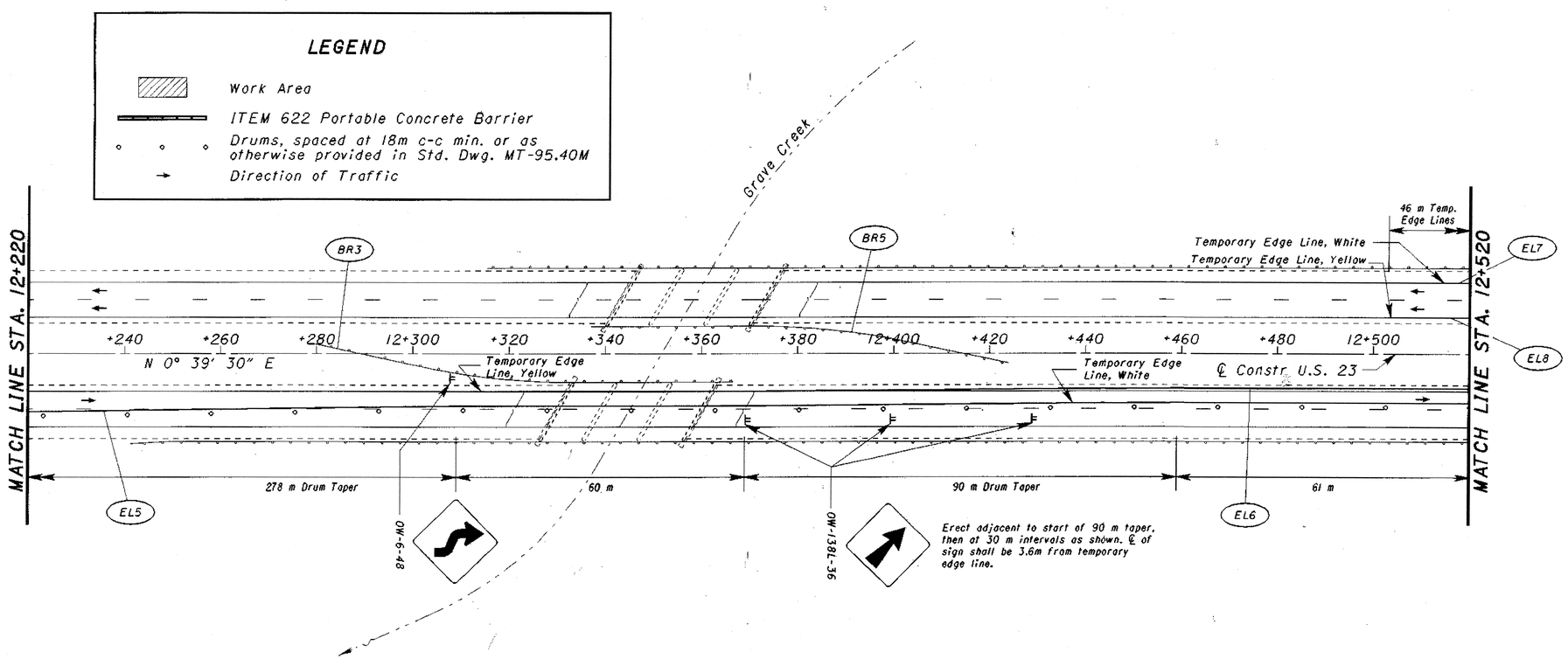
CHECKED JAD

PHASE 1 MAINTENANCE OF TRAFFIC
BR. MAR-23-12.666 STA. 13+120 TO STA. 13+420

MAR-23-12.666

* For advance warning signs and other details, see Std. Dwg. MT-95.40M





HORIZONTAL SCALE IN METERS

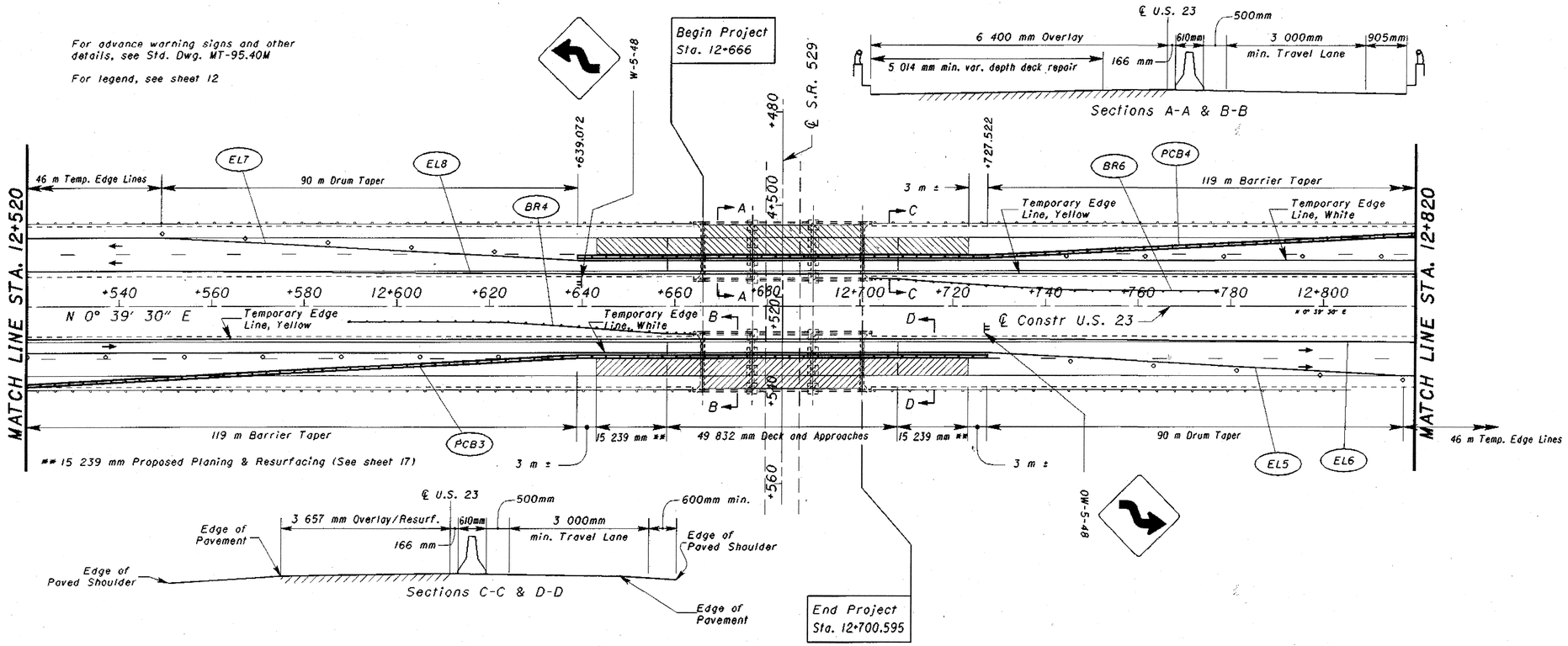
CALCULATED AP
CHECKED JAD

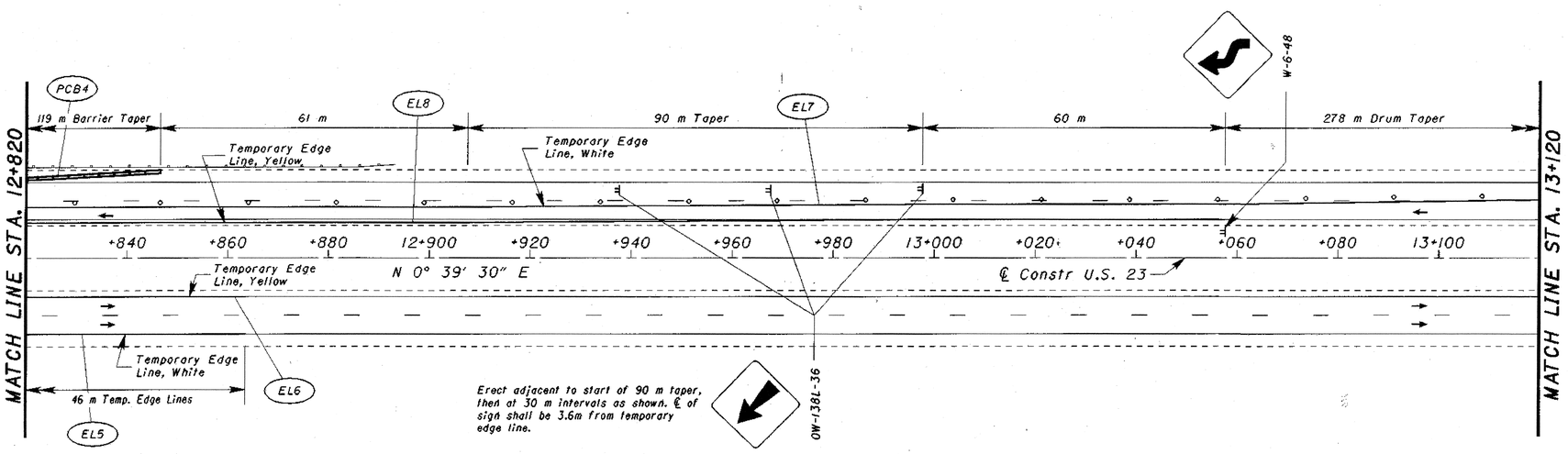
PHASE 2 MAINTENANCE OF TRAFFIC
BR. MAR-23-12.666 STA. 12+200 TO STA. 12+520

MAR-23-12.666

For advance warning signs and other details, see Std. Dwg. MT-95.40M

For legend, see sheet 12





HORIZONTAL SCALE IN METERS

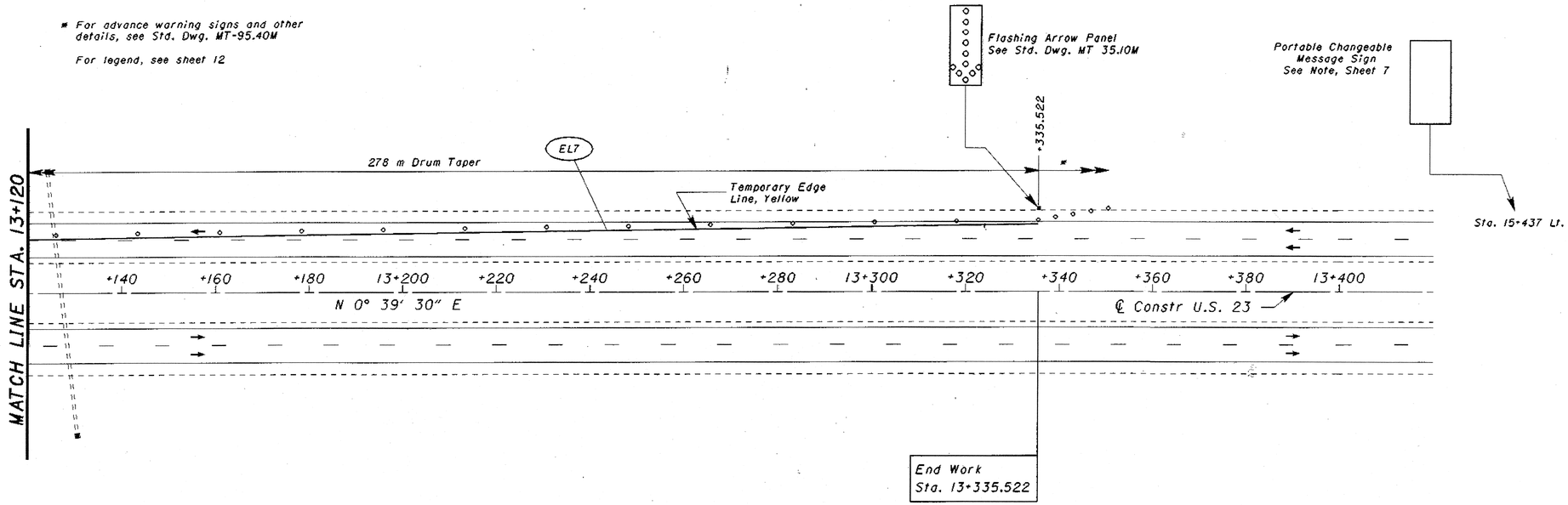
CALCULATED AP
CHECKED JAD

PHASE 2 MAINTENANCE OF TRAFFIC
BR. MAR-23-12.666 STA. 12+520 TO STA. 13+120

MAR-23-12.666

* For advance warning signs and other details, see Std. Dwg. MT-95.40M

For legend, see sheet 12



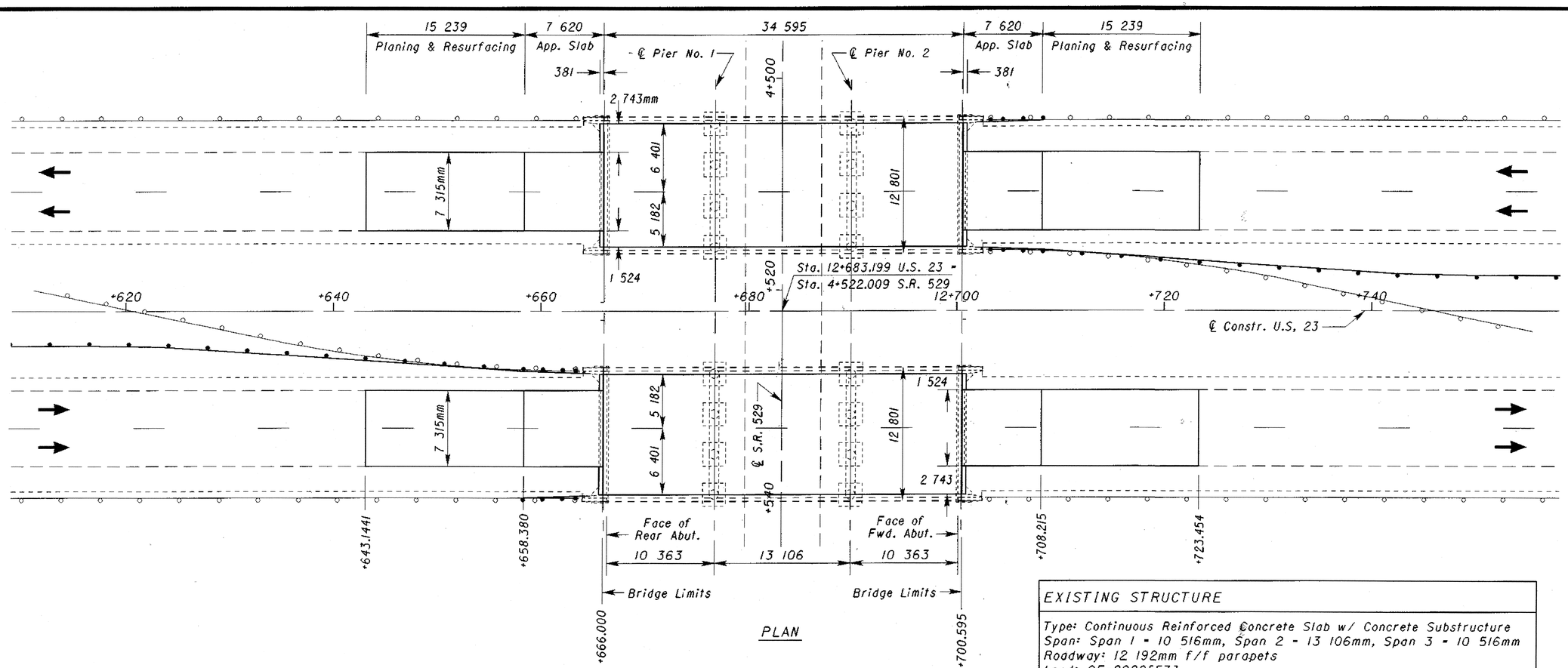
HORIZONTAL SCALE IN METERS

CALCULATED AP

CHECKED JAD

PHASE 2 MAINTENANCE OF TRAFFIC
BR. MAR-23-12.666 STA. 13+120 TO STA. 13+420

MAR-23-12.666



PLAN

STRUCTURE ESTIMATED QUANTITIES

ITEM	EXTENSION	TOTAL	UNIT	DESCRIPTION	MAR-23-12666L (SFN 5100577)	MAR-23-12666R (SFN 5100607)
Special	51275500	1038	m^2	SEALING, MISC.: SOLUBLE REACTIVE SILICATE (SRS) TREATING OF CONCRETE SURFACES	519	519
516	10000	30	m	PREFORMED ELASTOMERIC COMPRESSION JOINT SEAL (705.11)	15	15
847	10000	1038	m^2	MICRO SILICA MODIFIED CONCRETE OVERLAY (38mm THICK)	519	519
847	20000	10	m^3	MICRO SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS)	5	5
847	30400	814	m^2	EXISTING CONCRETE OVERLAY REMOVED (32mm NOMINAL THICKNESS)	407	407

EXISTING STRUCTURE

Type: Continuous Reinforced Concrete Slab w/ Concrete Substructure
Span: Span 1 - 10 516mm, Span 2 - 13 106mm, Span 3 - 10 516mm
Roadway: 12 192mm f/f parapets
Load: CF-2000[57]
Skew: 0°-39'-10" R.F.
Wearing Surface: 32mm Latex Modified Concrete Overlay
Approach Slabs: 7 620mm
Alignment: Tangent

STRUCTURE WORK ACTIVITIES	DETAILS
• Remove existing overlay from deck and backwall tops	15, 16
• Variable depth deck concrete removal	15, 16
• Place microsilica modified concrete on deck, existing approach slabs and backwall tops	15, 16
• Seal new micro-silica surfaces and new approach slabs	3
• Install new preformed elastomeric joint sealer	15, 16

ROADWAY WORK ACTIVITIES	DETAILS
• Planing of bituminous wearing course	18
• New median guardrail and guardrail end treatments	2, 19
• Repair/patch or replace approach slabs	2, 17
• Place new bituminous wearing course	18
• Apply new permanent pavement markings	2

DESIGN AGENCY: ODOT CENTRAL OFFICE OFFICE OF PRODUCTION
DATE: 12/14/98
STRUCTURE FILE NUMBER: 5100577, 5100607
REVISED: DFT
DRAWN: AP
REVISED:
DESIGNED: AP
CHECKED: TAA

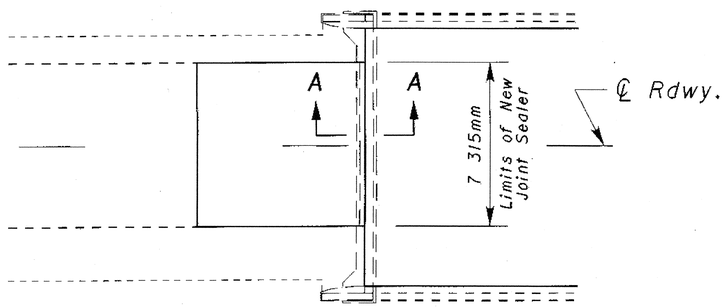
GENERAL PLAN & ESTIMATED QUANTITIES
BRIDGE NO. MAR-23-12666 L&R
OVER S.R.529

MAR-23-12.666

1/3

15/19

Plan View (Typ.)



Notes

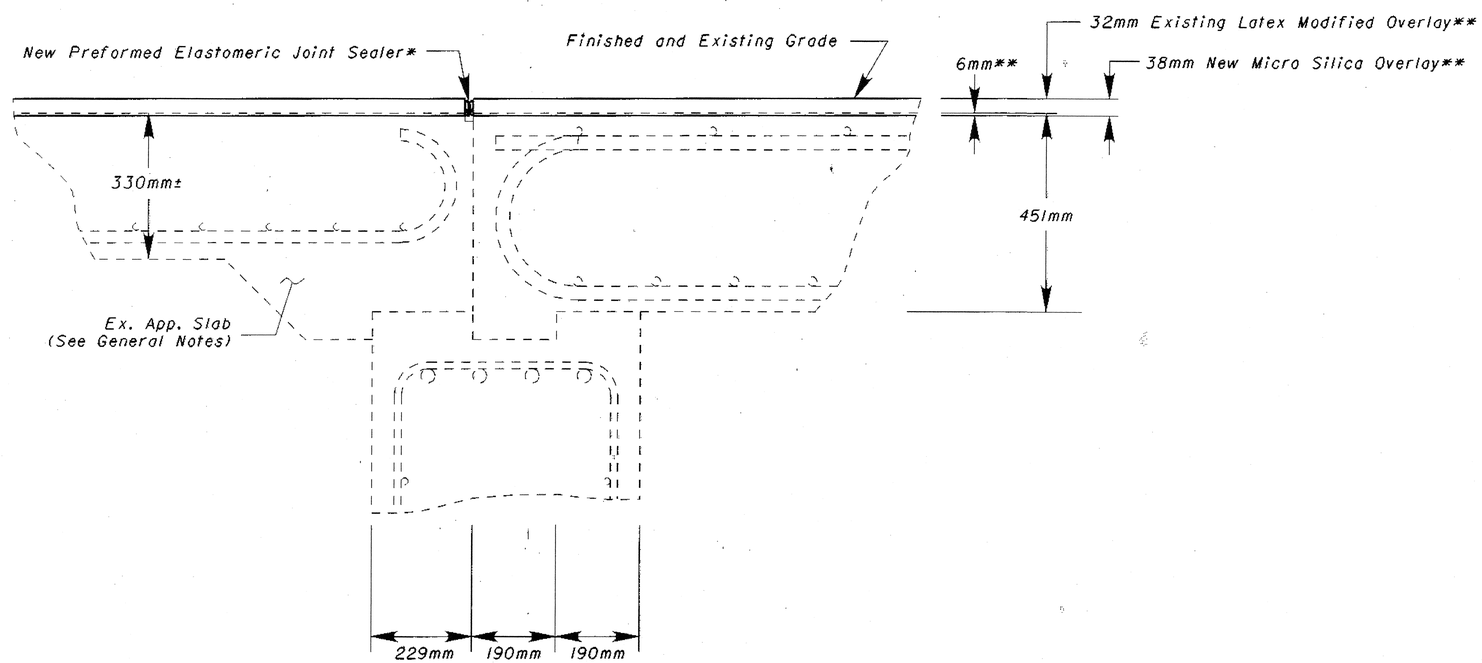
* NEW PREFORMED ELASTOMERIC JOINT SEALER

The new seal shall be as per Std. Drwg. AS-1-81M, sheet 2, Detail B.

The existing concrete may be sawcut as needed to provide the necessary opening for the seal. The opening in the new microsilica overlay shall be formed, and any additional sawcutting shall be performed after curing of the overlay. All costs of sawcutting and forming shall be included in the bid price for Item 516.

** DEPTHS FOR REMOVAL OF EXISTING OVERLAY & PLACEMENT OF NEW MICROSILICA OVERLAY

As per Supplemental Specification 847, the removal of the existing 32mm latex overlay shall be covered by the price bid for "Existing Concrete Overlay Removed (32mm Nominal Thickness)" and the additional 6mm scarification below that shall be included in the price bid for "Micro Silica Modified Concrete Overlay (38mm Thick)".



Section A-A

DESIGN AGENCY: ODOT CENTRAL OFFICE OFFICE OF PRODUCTION

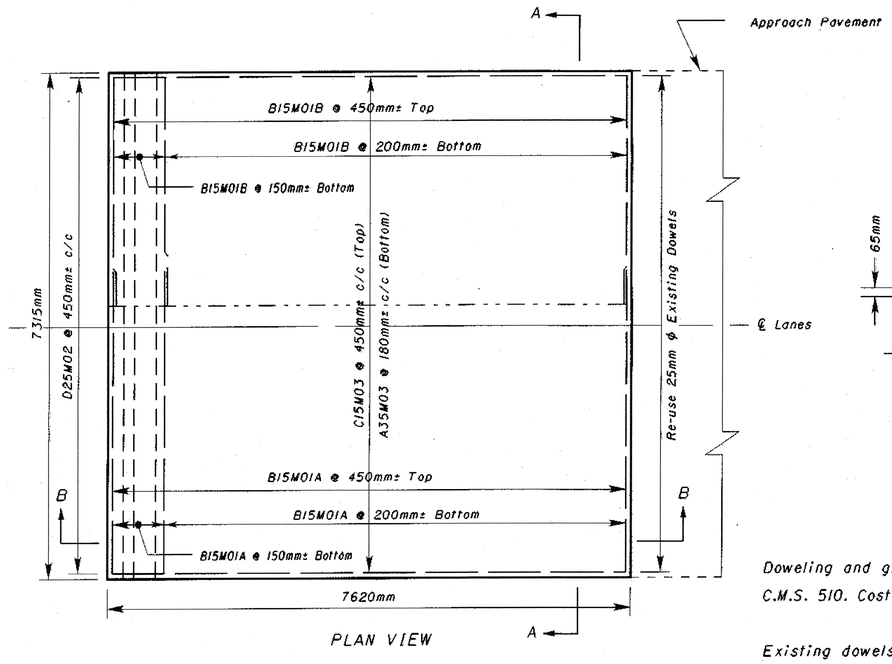
DESIGNED	DRAWN	REVIEWED	DATE
AP	AP	DFT	12/14/98
CHECKED	REVISED	STRUCTURE FILE NUMBER	
TAA		5100577, 5100607	

JOINT DETAILS
BRIDGE NO. MAR-23-12666 L&R
OVER S.R.529

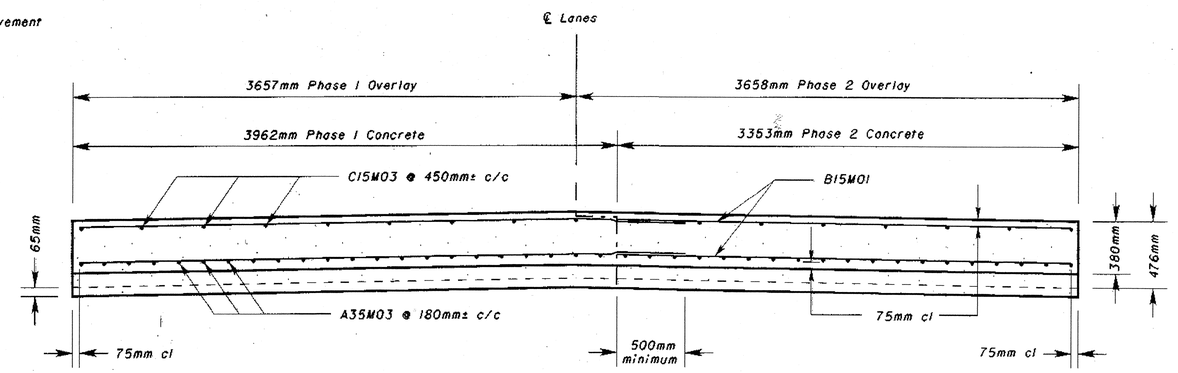
MAR-23-12.666

2/3

16/19



PLAN VIEW



SECTION A-A

All provisions of Standard Drawing AS-1-81M dated 10-25-94 shall apply except as specifically noted on this sheet and elsewhere in these plans.

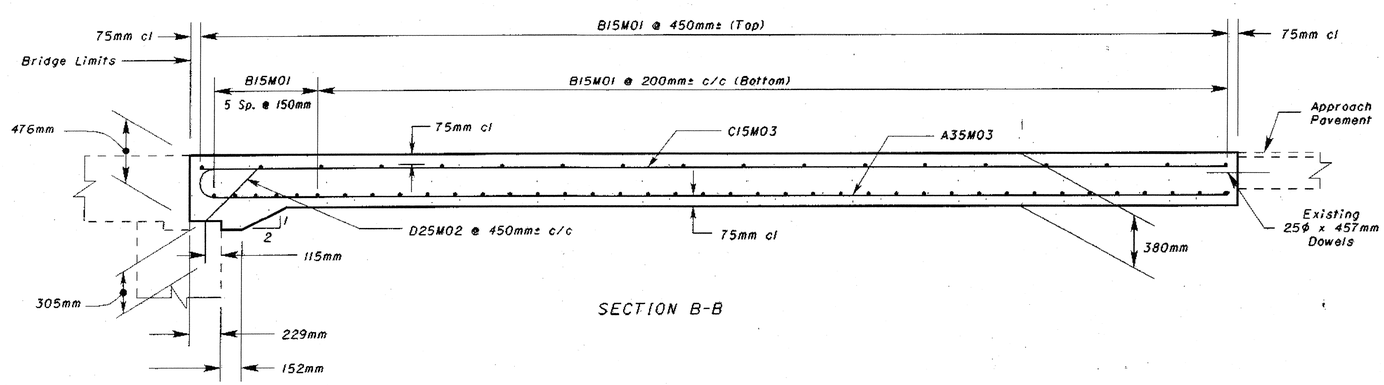
Doweling and grouting of the D25M02 bars shall be in accordance with C.M.S. 510. Cost shall be included in the price bid for the approach slab.

Existing dowels into the existing adjacent roadway pavement are to be preserved for re-use as per the provisions in the General Notes.

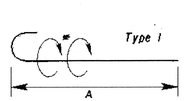
The phasing shown on this sheet follows the sequence of the plan Maintenance of Traffic; phase 1 to cover work on the inside lanes and phase 2 to cover work on the outside lanes. The Contractor may propose an alternate joint and splice detail, including use of mechanical connectors. Such proposal must be submitted to the Engineer for approval 14 days prior to the start of the slab work.

Preformed elastomeric joint sealer at the bridge limit end of the slab shall be paid separately from the approach slab.

There shall be no micro silica modified concrete overlay applied to the new approach slabs.

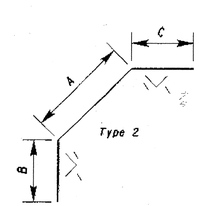


SECTION B-B



* Rotate these bars when placed to provide for the required clearance between the top of bar and the finished grade.

REINFORCEMENT							
Mark	Number per Approach Slab	Length (mm) Bar	Length (mm) Total	Type	Dimensions (mm) A	Dimensions (mm) B	Dimensions (mm) C
A35M03	41	7900	323 900	1	7470		
B15M01A	57	4387	250 059	straight			
B15M01B	57	3278	186 846	straight			
C15M03	17	7470	126 990	straight			
D25M02	17	1410	23 970	2	735	305	432



DESIGN AGENCY
ODOT CENTRAL OFFICE
OFFICE OF PRODUCTION

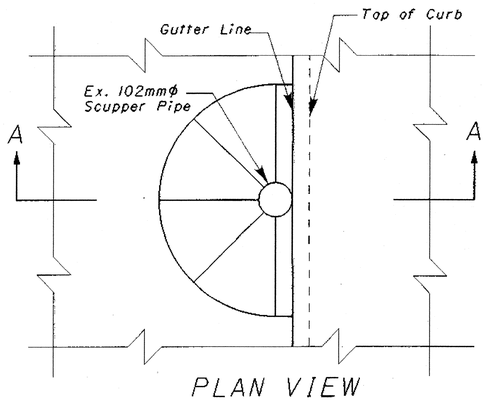
DESIGNED AP | CHECKED TAA | DRAWN AP | REVISED | REVIEWED DFT | DATE 1/26/99 | STRUCTURE FILE NUMBER 5100577, 5100607

APPROACH SLAB DETAILS
BRIDGE NO. MAR-23-12666 L&R

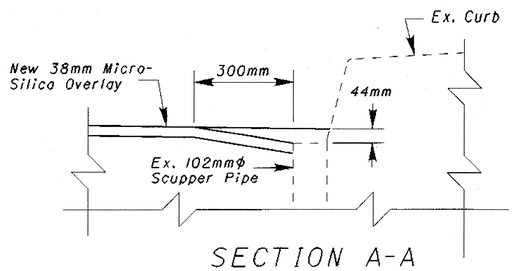
MAR-23-12.666

3/3

17/19



PLAN VIEW



SECTION A-A

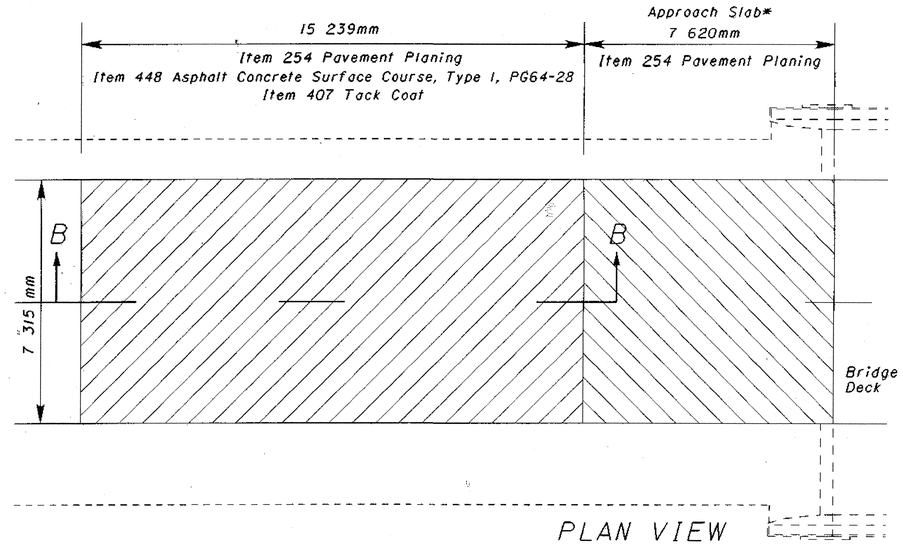
TYPICAL OVERLAY DETAIL AT SCUPPERS

PLANING/RESURFACING DETAILS

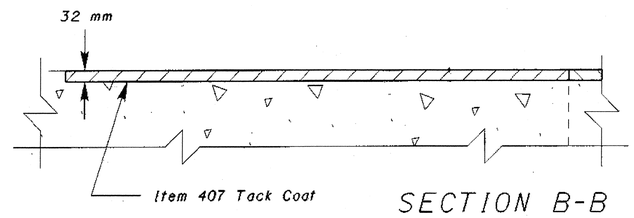
Planing/Resurfacing Area

Planing Only (New Surface to be Micro Silica Overlay)

* See General Notes for approach slab work and items



PLAN VIEW



SECTION B-B

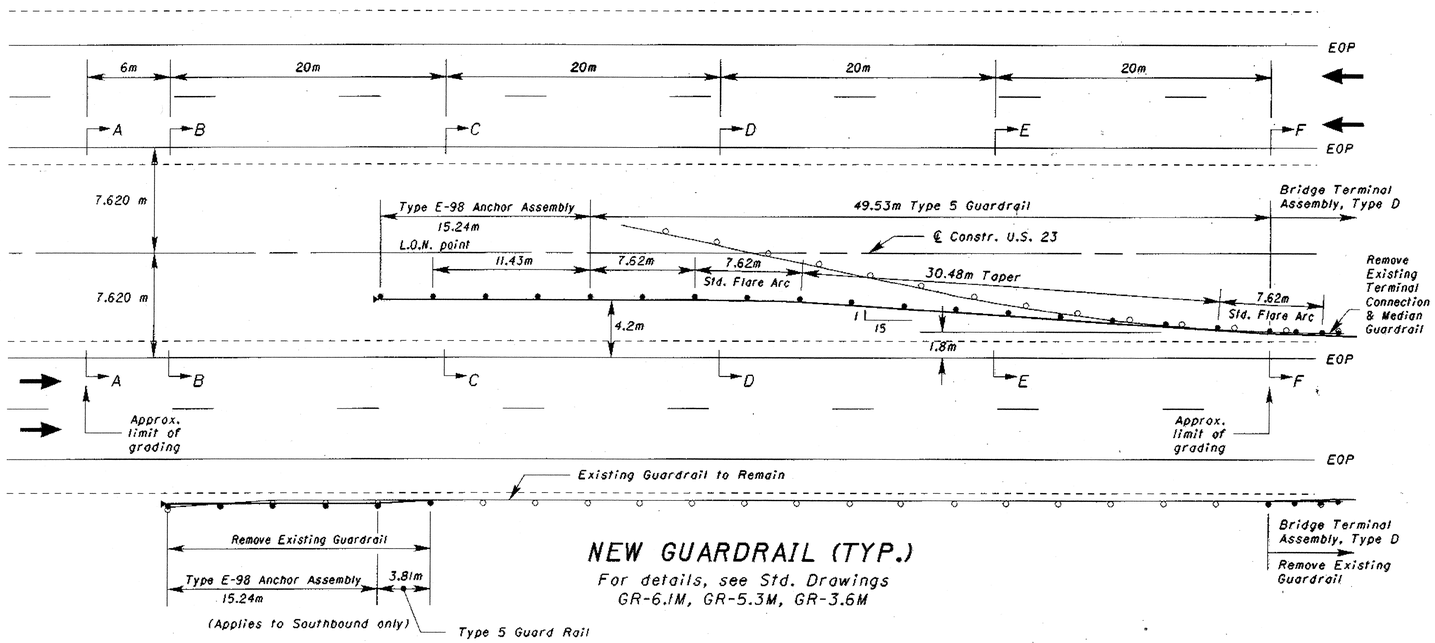
ROADWAY AND PAVEMENT SUB-SUMMARY

STATION		SIDE	202 Raised Pavement Marker Removed for Storage	254 Pavement Planing, Bituminous		407 Tack Coat	448 Asphalt Concrete Surface Course, Type I, PG64-28		621 Raised Pavement Marker
FROM	TO		Each	m^2		L	m^3		Each
12+643.141	12+723.454	Lt.	4						4
12+643.141	12+723.454	Rt.	4						4
12+643.141	12+666.000	Lt.		167.5					
12+700.595	12+723.454	Lt.		167.5					
12+643.141	12+666.000	Rt.		167.5					
12+700.595	12+723.454	Rt.		167.5					
12+643.141	12+658.380	Lt.				38.0	3.6		
12+708.215	12+723.454	Lt.				38.0	3.6		
12+643.141	12+658.380	Rt.				38.0	3.6		
12+708.215	12+723.454	Rt.				38.0	3.6		
TOTALS CARRIED TO GENERAL SUMMARY			8	670.0		152.0	14.4		8

CALCULATED AP
CHECKED JAD

PAVEMENT DETAILS

MAR-23-12.666

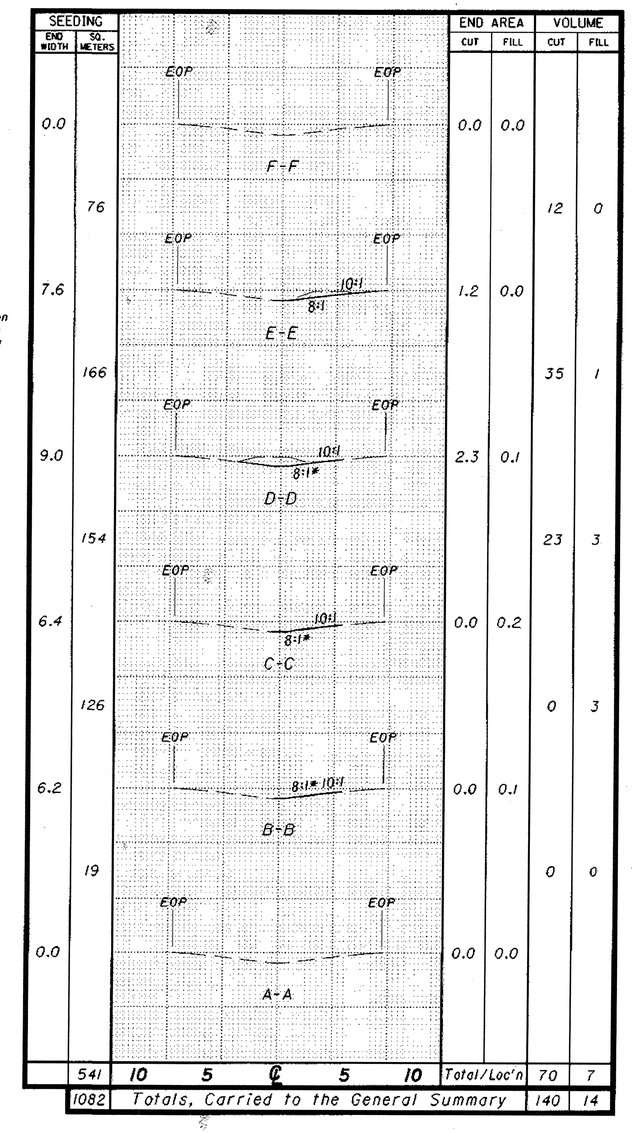


NEW GUARDRAIL (TYP.)

For details, see Std. Drawings
GR-6.1M, GR-5.3M, GR-3.6M

GUARDRAIL SUB-SUMMARY

STATION FROM	STATION TO	SIDE	202 Guardrail Removed	606 Guardrail, Type 5	606 Bridge Terminal Assembly, Type D	606 Anchor Assembly, Type E-98	620 Delineator, Type C, Post Mounted	620 Delineator, Type D, Post Mounted
			m	m	Each	Each	Each	Each
12+593.625	12+664.650	Rt.	55	55.245	1	1		1
12+658.304	12+664.650	Rt.	6	5.715	1			
12+701.940	12+772.965	Lt.	55	55.245	1	1		1
12+701.940	12+866.240	Lt.	25	9.525	1	1	1	
TOTALS CARRIED TO GENERAL SUMMARY			141	125.73	4	3	1	2



MEDIAN EARTHWORK AND SEEDING QUANTITIES (TYP.)

* Slope varies 8:1 or greater; see Std. Dwg. GR-6.1M 1-3-96

HORIZONTAL SCALE IN METERS

CALCULATED AP
CHECKED JAD

GUARDRAIL DETAILS

MAR-23-12.666