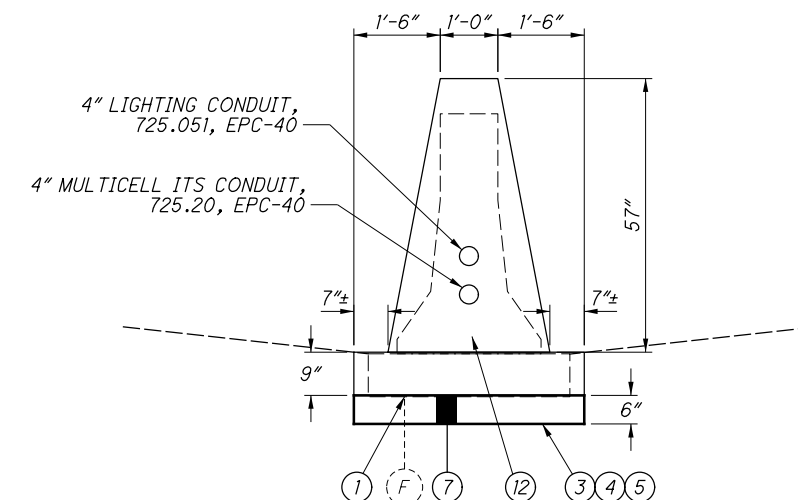
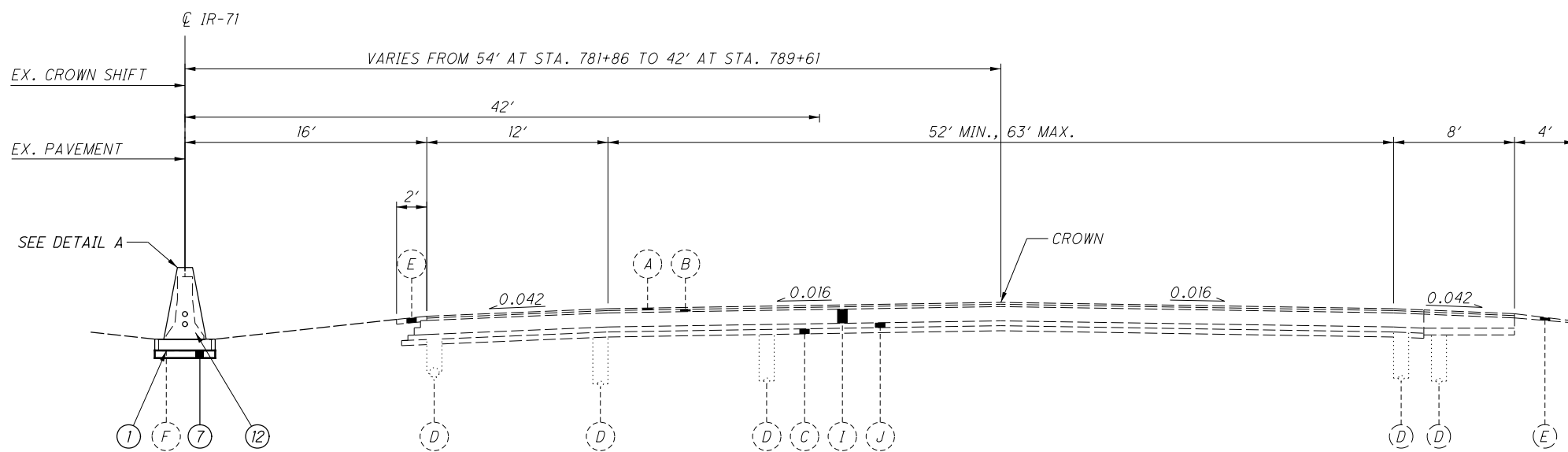


NORMAL SECTION - IR-71, SOUTHBOUND
 STA. 781+12.99 TO STA. 789+00



DETAIL A



NORMAL SECTION - IR-71, NORTHBOUND
 STA. 781+12.99 TO STA. 789+00

EXISTING LEGEND

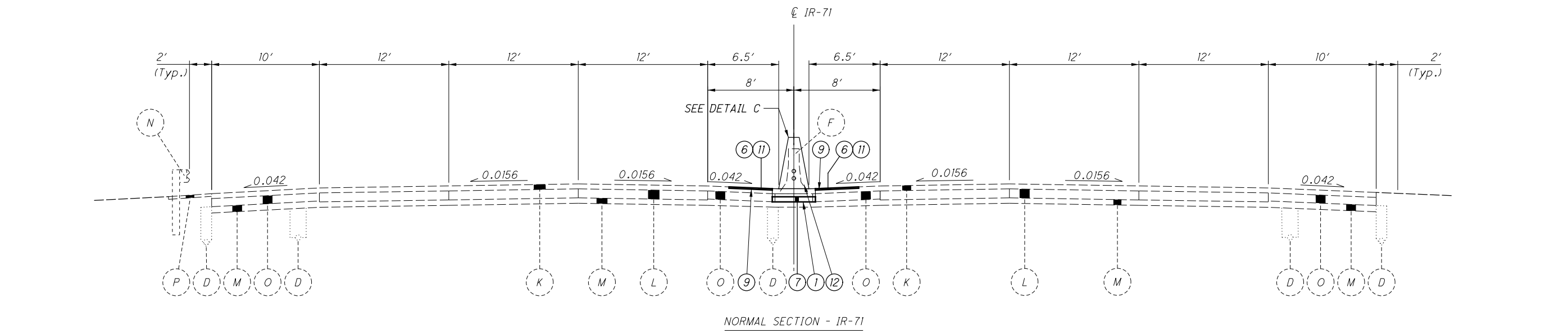
- (A) 1 1/2" ASPHALT CONCRETE SURFACE COURSE
- (B) 1 3/4" ASPHALT CONCRETE INTERMEDIATE COURSE
- (C) AGGREGATE BASE
- (D) UNDERDRAIN
- (E) COMPACTED AGGREGATE
- (F) CONCRETE BARRIER, TYPE B50
- (G) CONCRETE BARRIER, TYPE C
- (H) CONCRETE BARRIER, TYPE D
- (I) 11/4" BITUMINOUS AGGREGATE BASE

- (J) 4" ASPHALT TREATED FREE DRAINING BASE
- (K) 5 1/2" ASPHALT OVERLAY
- (L) 10" REINFORCED CONCRETE PAVEMENT
- (M) SUBBASE
- (N) GUARDRAIL
- (O) 9" PLAIN CONCRETE PAVEMENT
- (P) ASPHALT UNDER GUARDRAIL
- (Q) 13" REINFORCED CONCRETE PAVEMENT
- (R) 3 1/2" STABILIZED CRUSHED AGGREGATE

PROPOSED LEGEND

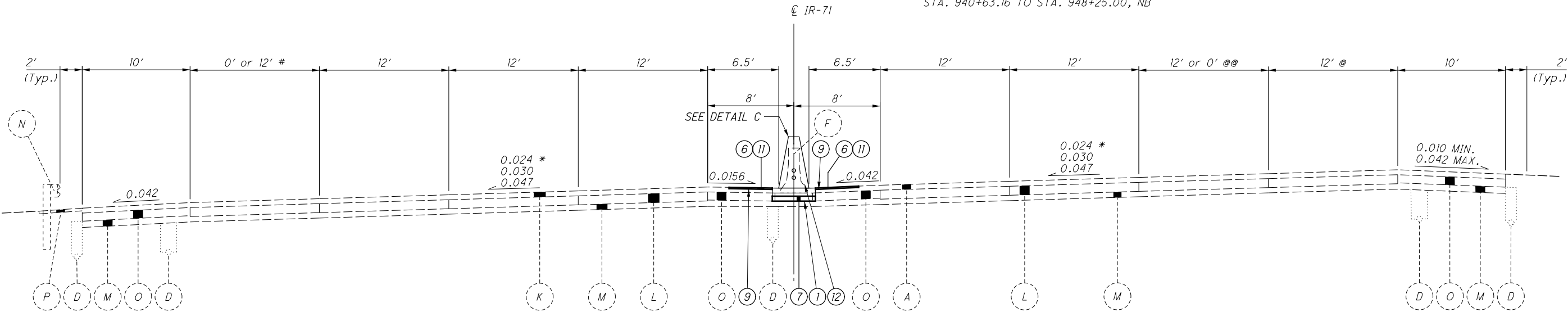
- (1) ITEM 202 - CONCRETE BARRIER REMOVED, AS PER PLAN
- (2) ITEM 202 - PAVEMENT REMOVED
- (3) ITEM 203 - EXCAVATION
- (4) ITEM 203 - EMBANKMENT
- (5) ITEM 204 - SUBGRADE COMPACTION
- (6) ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE, AS PER PLAN, 1.5"
- (7) ITEM 304 - AGGREGATE BASE (THICKNESS AS DIMENSIONED)
- (8) ITEM 305 - 9" CONCRETE BASE, CLASS QC 1P
- (9) ITEM 407 - NON-TRACKING TACK COAT
- (10) ITEM 441 - ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (448), 4" (2 LIFTS)
- (11) ITEM 442 - ASPHALT CONCRETE SURFACE COURSE, 12.5MM, TYPE A, (448), AS PER PLAN, PG76-22M, 1.5"
- (12) ITEM 622 - CONCRETE BARRIER, SINGLE SLOPE, TYPE B1, AS PER PLAN
- (13) ITEM 622 - CONCRETE BARRIER, SINGLE SLOPE, TYPE C1, AS PER PLAN





STA. 839+85.00 TO STA. 841+20.59, SB (BRIDGE CUY-71-0668)
 STA. 841+20.59 TO STA. 913+00.00, SB
 STA. 937+79.00 TO STA. 938+88.24, SB
 STA. 938+88.24 TO STA. 940+63.16, SB (BRIDGE CUY-71-0856)
 STA. 940+63.16 TO STA. 946+75.00, SB

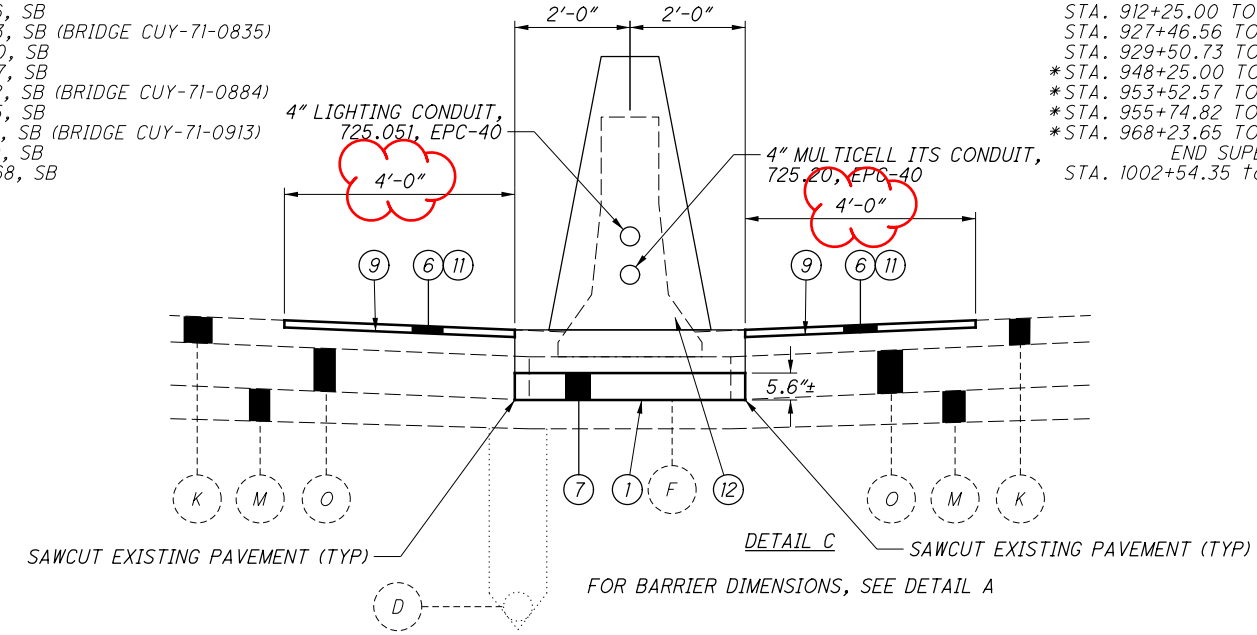
STA. 838+35.00 TO STA. 839+18.57, NB
 STA. 839+18.57 TO STA. 841+20.59, NB (BRIDGE CUY-71-0668)
 STA. 841+20.59 TO STA. 912+25.00, NB
 STA. 938+54.00 TO STA. 938+88.24, NB
 STA. 938+88.24 TO STA. 940+63.16, NB (BRIDGE CUY-71-0856)
 STA. 940+63.16 TO STA. 948+25.00, NB



STA. 913+00.00 TO STA. 927+46.56, SB
 *STA. 927+46.56 TO STA. 929+50.73, SB (BRIDGE CUY-71-0835)
 *STA. 929+50.73 TO STA. 937+79.00, SB
 *STA. 946+75.00 TO STA. 953+52.57, SB
 *STA. 953+52.57 TO STA. 955+74.82, SB (BRIDGE CUY-71-0884)
 *STA. 955+74.82 TO STA. 968+23.65, SB
 STA. 968+23.65 TO STA. 970+84.51, SB (BRIDGE CUY-71-0913)
 STA. 970+84.51 TO STA. 973+25.00, SB
 STA. 1002+54.35 TO STA. 1010+82.68, SB

STA. 912+25.00 TO STA. 927+46.56, NB
 STA. 927+46.56 TO STA. 929+50.73, NB (BRIDGE CUY-71-0835)
 STA. 929+50.73 TO STA. 938+54.00, NB
 *STA. 948+25.00 TO STA. 953+52.57, NB
 *STA. 953+52.57 TO STA. 955+74.82, NB (BRIDGE CUY-71-0884)
 *STA. 955+74.82 TO STA. 968+23.65, NB
 *STA. 968+23.65 TO STA. 970+84.51, NB (BRIDGE CUY-71-0913)
 END SUPERELEVATION AT STA. 970+75.00, NB
 STA. 1002+54.35 TO STA. 1010+82.68, NB

* - CURVE RIGHT
 # - 12' FROM STA. 951+75.00 TO STA. 973+25.00
 @ - 12' FROM STA. 964+40.00 TO STA. 970+75.00
 @@ - 0' FROM STA. 1004+00.00 TO STA. 1010+84.49



FOR TYPICAL SECTION LEGEND, SEE P.5

TYPICAL SECTIONS

DESIGN AGENCY	
DESIGNER	VN
REVIEWER	DAB 10/15/21
PROJECT ID	87904
SHEET	P.7
TOTAL	152

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 appurtenances shall be determined from field observations. Records of the inspection shall be kept in writing by the State.

All new conduits, inlets, catch basins and manholes constructed as 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 611 drainage items.

Item 611 – Inlet, No. 3 for Single Slope Barrier, Type B1, As Per Plan
Item 611 – Inlet, No. 3 for Single Slope Barrier, Type C1, As Per Plan

This item shall consist of furnishing and installing Item 611 – Inlet, No. 3 for Single Slope Barrier, Type B1 and Type C1 according to the CMS and Standard Construction Drawing I-3B & I-3C with the following modifications:

1. This item is intended to replace the concrete barrier on top of the inlet only.
2. The length of the concrete barrier on top of the inlet varies as detailed in the subsummaries in order to avoid leaving very small sections of unreinforced barrier adjacent to the inlet.

All costs for this item of work, including labor, materials, equipment and incidentals shall be included in the unit bid price for Item 611 – Inlet, No. 3 for Single Slope Barrier, Type B1, As Per Plan & Item 611 – Inlet, No. 3 for Single Slope Barrier, Type C1, As Per Plan.

Item 611 – Inlet, Misc.: Inlet, No. 3B50

This item shall consist of furnishing and installing Item 611 – Inlet, Misc.: Inlet, No. 3B50 according to the details shown on P.116 of this plan with the following modifications:

1. This item is intended to replace the concrete barrier on top of the inlet only.
2. The dimensions for D-64 shall be adjusted to match the adjacent Type C Barrier as needed.
3. The length of the concrete barrier on top of the inlet varies as detailed in the subsummaries in order to avoid leaving very small sections of unreinforced barrier adjacent to the inlet.

All costs for this item of work, including labor, materials, equipment and incidentals shall be included in the unit bid price for Item 611 – Inlet, Misc.: Inlet No. 3B50.

Item 611 – Inlet Reconstructed to Grade, As Per Plan

The Contractor and Field Engineer shall field check all existing inlets located within the limits of the project. Any casting found that exhibits substantial deterioration shall be "Reconstructed to Grade", as directed by the Engineer. In addition, if it is found that the inlet trough section exhibits substantial deterioration, then replacement of the trough shall be incidental to Item 611 – Inlet Reconstructed to Grade, As Per Plan.

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

Item 611 – Inlet Reconstructed to Grade, As Per Plan **10 Each**

Item Special – Miscellaneous Metal

Existing castings may prove to be unsuitable for reuse, as determined 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 materials must meet Item 611 of the CMS and shall have the prior approval of the Engineer.

The Contractor is cautioned to use extreme care in the removal, storage, and replacement 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 expense of the Contractor.

The Contractor shall not order materials until authorized by the Engineer, and if none are needed, the item shall be non-performed.

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

Item Special – Miscellaneous Metal..... **3000 Lbs**

Pavement

Profile and Alignment

Place the proposed pavement to follow the alignment of the existing pavement. Place the proposed asphalt concrete with a uniform thickness as shown on the typical sections.

Planing Requirements

The duration of time between planing the asphalt and placing the asphalt overlay shall be kept to a minimum. In no instance shall this time exceed 7 calendar days. The time limit shall begin on the first day of planing and shall continue based on calendar days, minus any weather days, until completion of the asphalt concrete surface course. This is to ensure that the potential degradation of the exposed pavement due to traffic is kept to a minimum. This requirement applies to both mainline and ramps alike.

In the event that the time between exposing the existing pavement and placing the asphalt surface course exceeds 7 calendar days, liquidated damages as per 108.07 of the C&MS shall be assessed.

Item 254 – Pavement Planing, Asphalt Concrete, As Per Plan

This item shall be used to remove a consistent width of the asphalt overlay from the inside shoulder at a depth of 1.5" as specified in the plans on IR-71. Care should be taken to avoid destroying or damaging existing rumble strips. Pavement planing limits shall be offset a minimum of 6" from the edge of the existing rumble strips. For estimating purposes, quantities are based on a consistent width of 4' as shown on the typical sections. The width shall be adjusted in the field, as directed

by the Engineer, as required to maintain the minimum 6" offset to the existing rumble strips.

Asphalt Concrete Surface Course Sealing Requirements

In addition to the gutter sealing requirements specified in SCD BP-3.1 and C&MS 401.15, after completion of the surface course, the contractor shall use a certified 702.01 PG binder to seal the following locations:

- All castings including but not limited to monuments, manholes, water valves, catch basins, curb inlets.
- Butt joints and feather joints including bridge approaches.
- Forward joint for driveway asphalt and trailing joint when butting to existing asphalt drive.
- Perimeter of all pavement repairs or other asphalt inlays when pavement repairs/inlays are not overlaid with an asphalt concrete surface course.
- All cold longitudinal joints between paved shoulders and guardrail asphalt.

The material used shall be a certified 702.01 PG binder. The width of the sealer shall be 2-3 inches.

Any additional costs associated with the work identified in this note shall be included in the appropriate asphalt concrete surface course item of work.

Item 442 – Asphalt Concrete Surface Course, 12.5mm, Type A, (448), As Per Plan, PG76-22M

The coarse virgin aggregate for this item shall be limited to a blend of air cooled blast furnace slag (ACBFS) or Trap Rock from Ontario and limestone. The Contractor shall use a minimum 60% of ACBFS or Trap Rock from Ontario with limestone comprising the remaining percentage. At least 50% of fine virgin aggregate for this item shall be limited to ACBFS or Trap Rock from Ontario.

Table 442.02-2 applies except No. 4 sieve requirements are 52 to 60 Total Percent Passing. For the No. 4 sieve do not exceed 63 in production.

When ACBFS is used for a fraction of the coarse aggregate, provide a total asphalt binder content greater than or equal to 6.2 percent. If ACBFS makes up 100% of the coarse aggregate, apply the binder content requirements of C&MS 442.

Item 442 – Asphalt Concrete Surface Course, 12.5mm, Type A, (448), As Per Plan, PG70-22M

The coarse aggregate for this item shall be limited to a blend of air cooled blast furnace slag (ACBFS) and limestone. The Contractor shall use a minimum of 50 percent ACBFS with limestone comprising the remaining percentage.

In addition to the joint sealing requirements specified in 401.17, the Contractor shall seal the perimeter of all rumble strip pavement replacement areas. The material used shall be a certified 702.01 PG binder. The width of the sealer shall be 2-3 inches.

Payment for all labor, materials and equipment required to perform the above work shall be included in the contract price for Item 442 – Asphalt Concrete Surface Course, 12.5MM, Type A (448), As Per Plan, PG70-22M.

GENERAL NOTES

DESIGN AGENCY
DESIGNER
DAB
REVIEWER
EMK 10/15/21
PROJECT ID
87904
SHEET TOTAL
P.13 152

Maintenance of Traffic

General

It is the responsibility of the Contractor to provide through vehicular access in both directions at all times throughout the project area. The project shall be constructed in phases in order to minimize traffic disruption and inconvenience to the general public. The Contractor shall be responsible for providing all equipment, materials and manpower needed to adequately maintain traffic as provided for in the plans and specifications.

The Contractor is reminded that, in the conduct of this project, the sequence of operations shall be planned in a fashion which minimizes the number of lane reductions and/or lane width reductions required to maintain traffic through the project.

Permitted lane closures shall be as shown on the Permitted Lane Closure Schedule (PLCS). The time limits shown in this table shall be adhered to or road user costs will be assessed.

Sequence of Construction

Permanent maintenance of traffic zones, as detailed on sheets 26-39 of the plans, shall be maintained for the duration of the project.

Maintenance of Traffic Control Zones

The Contractor shall be responsible to maintain the signs, drums or cones specified in the Standard Construction Drawings. When the Contractor is notified of deficiencies, he shall correct the deficiencies as soon as possible, preferably within 12 hours and no later than 24 hours. If any noted deficiencies are not corrected within 24 hours the Engineer shall deduct one day pay for Item 614 – Maintaining Traffic, not as a penalty but as road user costs. The Contractor shall be subject to these road user costs for each and every day that these provisions are not met. All costs for maintaining the work zones as described above shall be included under Item 614 – Maintaining Traffic.

Suspension of Work

If the Contractor fails to comply with the provisions for traffic control as set forth in these plans or with provisions of the OMUTCD, the Engineer shall suspend work until the Contractor complies with the necessary requirements.

Payment

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

Lane Closure/Reduction Required

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.

Schedule of Through Lanes to be Maintained

All lane closures may only be implemented at the times permitted by the “District 12 Permitted Lane Closure Times” list, which is located on the ODOT website:

<http://www.dot.state.oh.us/districts/D12/HighwayManagement/Pages/PermittedLaneClosures.aspx>

The latest revision, at 14 days prior to the bid date, shall be in effect for this project.

No lane or shoulder closures shall be in place when no work is being performed, unless directed by the Engineer. Shoulder closures shall only be allowed at the times specified for lane closures.

Any roadway not listed shall not have any lane closures on weekdays from 6:30am to 9:00am and 3:00pm to 6:00pm. Contact Troy Onesti, District 12 Work Zone Traffic Manager, at (216) 584-2204 if there are any questions.

All notes on the Permitted Lane Closure Times shall be part of the project.

Alternate Methods

If the Contractor so elects, he may submit alternate methods for the maintenance of traffic, provided the intent of the provisions is followed and no additional inconvenience to the traveling public results there from. A review period of 30 days shall be provided for the Engineer to review the submitted alternate methods. No alternate plan shall be placed into effect until approval has been granted, in writing, by the Director.

All items proposed for use under these provisions must comply with current Department standards for their use when the plan detail, Standard Construction Drawing or other bid document governing their use is not provided as part of the bid package.

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 authorities.

Maintenance of Existing Signs

Per CMS 614.07, the Contractor shall maintain all existing signs for the duration of the project. For overhead signs being replaced by the project, leave the existing signage in place until the new signage is installed. If the existing signs cannot remain in place until the proposed signs are installed, install temporary ground mounted signs in the outside shoulder upon removal of the existing signs to ensure that directional signs are in place at all times.

Interim Completion Date

All work detailed in the plans shall be completed by October 15th, 2022, except for the following items:

1. Light pole installations.
2. Sign truss installations.
 - a. Includes all work necessary to remove existing barrier and place proposed barrier around the existing sign trusses once the proposed sign trusses are installed.
3. Full depth asphalt repairs and mill and fill activities.

Lane Value Contract Table

Description of Critical Lane/Ramp to be Maintained	Restricted Time Period	Time Unit	Disincentive \$ per Time Unit per Lane
IR-71			
SR-82 to US-42, NB & SB	As per the Permitted Lane Closure Schedule	Each Minute	\$285
US-42 to Snow Road, NB & SB	As per the Permitted Lane Closure Schedule	Each Minute	\$325
Snow Road to IR-480, NB & SB	As per the Permitted Lane Closure Schedule	Each Minute	\$250
Over IR-480 & RR, NB & SB (2 lane section)	As per the Permitted Lane Closure Schedule	Each Minute	\$310
Over IR-480 & RR, SB (3 lane section)	As per the Permitted Lane Closure Schedule	Each Minute	\$205
RR to Fulton, NB & SB	As per the Permitted Lane Closure Schedule	Each Minute	\$240

The Contractor shall be assessed a disincentive in the amount of the sum total of those sections impacted by the physical lane restriction, including the Transition Area, Activity Area, and Termination Area as defined by the OMUTCD. Holiday disincentives shall be applied per section per lane per time unit.



MODEL: Sheet PAPER SIZE: 17x11 (in.) DATE: 3/10/2022 TIME: 11:07:02 AM USER: dbrauer pwc\hobdod-pw.bentley.com\hobdod-pw-02\Documents\01 Active Projects\Distrid 12\Cuyahoga\87904\04-00-Engineering\MOT\Sheets\87504_MNO05.dgn

Item 614 Maintaining Traffic – Work Zone Speed Zone Signs for Freeway Resurfacings

The following Work Zone Speed Zone (WZSZ) Speed Limit Revision(s) have been approved for use on this project when work zone conditions and factors are met as described below:

WZSZ Revision Number	County & Route	Direction
WZ-65239	Cuyahoga IR-71	NB & SB

Potential WZSZ locations shall have an original (pre-construction) posted speed limit of 55 mph or greater, a qualifying work zone condition of at least 0.5 mile in length, an expected work duration of at least three hours, and a work zone condition in place that reduces the existing functionality of the travel lanes or shoulders (i.e., lane closure, lane shift, crossover, contraflow and/or shoulder closure). The length of the work zone condition is measured from the beginning of the taper for the subject work zone condition impacting the travel lanes and/or shoulder to the end of the downstream taper, where drivers are returned to typical alignment. An expected work duration of at least three hours is required to balance the additional exposure created by installing and removing WZSZ signing with the time needed to complete the work.

If the work zone meets these minimum criteria, it shall be analyzed further using Table 1 below to determine if and when it qualifies for a speed limit reduction. Depending on the original posted speed limit, the type of temporary traffic control used, and whether or not workers are present, a warranted WZSZ will vary in the approved speed limit to be posted over time.

C&MS Item 614, Paragraph 614.02(B), indicates that two directions of a divided highway are considered separate highway sections. Therefore, if the work on a multi-lane divided highway is limited to only one direction, a speed limit reduction in the direction of the work does not automatically constitute a speed limit reduction in the opposite direction. Each direction shall be analyzed independently from each other.

All WZSZs fluctuate between two approved reduced speed limits or between an approved reduced speed limit and the original posted speed limit. Only one of two signing strategies shall be used to implement a WZSZ. WZSZs using DSL Sign Assemblies shall be in accordance with this note, Approved List, Supplemental Specifications (SS) 808 and 908, and Traffic SCD MT-104.10.

Only one warranted speed limit applies at any one time; speed limit reductions are not cumulative. WZSZs shall not be used for Moving/Mobile activities, as defined in OMUTCD Part 6.

When looking up the warranted work zone speed limits, always use the original, preconstruction, posted speed limit. Do not use a prior or current work zone speed limit as a look up value in the table. Positive Protection is generally regarded as portable barrier or other rigid barrier in use along the work area within the subject warranted work zone condition. Without Positive Protection is generally regarded as using drums, cones, shadow vehicle, etc., along the work area within the subject warranted work zone condition. Workers are considered as being present when on-site, working within the subject warranted work zone condition. When the work zone condition reducing the existing functionality of the travel lanes or shoulders is removed, the speed limit displayed shall return to the original posted speed limit.

Table 1: Warranted Work Zone Speed Limits (MPH) for Work Zones on High-Speed (55 mph or greater) Multi-Lane Highways

Original Posted Speed Limit	WITH Positive Protection		WITHOUT Positive Protection	
	Workers Present	Workers NOT Present	Workers Present	Workers NOT Present
70	60	65	55	65
65	55	60	50	60
60	55	60	50	60
55	50	55	45	55

The following estimated quantity has been carried to the General Summary.

Item 808, Digital Speed Limit (DSL) Sign Assembly **108 Sign Mnth**
Assuming 18 DSL Sign Assemblies for 6 Months

Item 614 Work Zone Increased Penalties Sign

R11-H5a-48 signs shall be furnished, erected, and maintained in good condition and/or replaced as necessary and subsequently removed by the Contractor. Signs shall be mounted at the appropriate offsets and elevations as prescribed by the Ohio Manual of Uniform Traffic Control Devices. They shall be maintained on supports meeting current safety criteria.

The signs may be erected or uncovered no more than four hours before the actual start of work. The signs shall be removed or covered no later than four hours following restoration of all lanes to traffic with no restrictions, or sooner as directed by the Engineer. Temporary sign covering and uncovering due to temporary lane restorations shall be guided by the four-hour limitations stated above. Such lane restorations should be expected to remain in effect for 30 or more consecutive calendar days, such as during winter shut-downs.

The signs on the mainline shall be dual mounted unless not physically possible. The first sign shall be placed between the ROAD WORK AHEAD (W20-1) sign and the next sign in the sequence. Signs shall be erected on each entrance ramp and every 2 miles through the construction work limits. Signs on the mainline shall be R11-H5a-48. Signs used on the ramps shall be R11-H5a-24. R11-H5a-24 signs may be used in the median in lieu of R11-H5a-48 signs if it is not physically possible to provide R11-H5a-48 signs in the median.

The R11-H5a-48 signs shall be mounted on 2 No. 3 posts when located within clear zones.

The Contractor may use signs and supports in used, but good, condition provided the signs meet current ODOT specifications. Sign faces shall be retroreflectORIZED with Type G sheeting complying with the requirements of C&MS 730.19.

Work Zone Increased Penalties signs and supports will be measured as the number of sign installations, including the sign and necessary supports. If a sign and support combination is removed and reerected at another location as directed by the Engineer, it shall be considered another unit.

Payment for accepted quantities, complete, in place will be made at the contract unit price. Payment shall be full compensation for all materials, labor, incidentals and equipment for furnishing, erecting, maintaining, covering during suspension of work, and removal of the sign and support.

Item 614 - Work Zone Increased Penalties Sign..... **20 Each**

Item 614, Work Zone Impact Attenuator, 24" Wide Hazards, (Unidirectional)

This item shall consist of furnishing and installing a non-gating impact attenuator. Furnish an impact attenuator from the Office of Roadway Engineering's approved list for Work Zone Impact Attenuators, from the Roadway Standard's web page for Roadway Standards Approved Products.

Installation shall be at the locations specified in the plans in accordance with the manufacturer's specifications.

The Contractor shall repair or replace a damaged unit within 24 hours of a damaging impact.

When bidirectional designs are specified, the Contractor shall supply appropriate transitions.

When gating impact attenuators are desired, the Contractor shall submit documentation to the Engineer for acceptance.

The cost for the additional barrier required for a gating impact attenuator shall be included in the cost of the gating impact attenuator.

Payment for the above work shall be made at the unit price bid and shall include all labor, tools, equipment and materials necessary to construct and maintain a complete and functional impact attenuator system, including all related backups, transitions, leveling pads, hardware and grading, not separately specified, as required by the manufacturer. The following estimated quantity has been carried to the General Summary:

Item 614 – Work Zone Impact Attenuator, 24" Wide Hazards, (Unidirectional) **10 Each**

Item 622 – Portable Barrier, Unanchored

This item of work shall be used when placing proposed concrete barrier in the median at the locations specified in the plans. The following estimated quantity has been carried to the General Summary:

Item 622 – Portable Barrier, Unanchored **47,650 Feet**

Winter Shutdown

If sign truss installations and full depth asphalt repairs are not completed prior to traffic being restored to normal lane configuration, then the Contractor shall place portable barrier and impact attenuators in the median shoulder to protect traffic from any gaps in the proposed barrier yet to be closed and/or any gaps in the pavement between the proposed barrier footer and existing sawcut line in the shoulder. The following estimated quantities have been carried to the General Summary to be used as directed by the Engineer:

Item 614 – Work Zone Impact Attenuator, 24" Wide Hazards, (Unidirectional) **14 Each**
Item 622 – Portable Barrier, Unanchored **1,180 Feet**

Delineation of Portable and Permanent Barrier

Barrier Reflectors and Object Markers shall be installed on all Portable Barrier (PB) used for traffic control and on permanent concrete barrier (including bridge parapets) located within 5 feet of the edge of the adjacent travel lane.

Barrier Reflectors shall conform to C&MS 626, except that the spacing shall be as per Traffic SCD MT-101.70. Object Markers and their installation shall conform to C&MS 614.03 and SCD MT-101.70. When the PB contains glare screen, one set of three vertical stripes of sheeting shall be considered equivalent to an object marker, one-way.

The following estimated quantities have been included in the plans and carried to the General Summary:

Item 614 – Barrier Reflector, Type 1, One Way..... **957 Each**
Item 614 – Object Marker, One Way..... **953 Each**

Construction Access Points

To be able to access the work area, the Contractor will be permitted to set up two construction access points in each direction. Four additional work zone impact attenuators have been provided in the General Summary for this purpose. The quantity of portable barrier has been calculated for the entire length of the project, in both directions. The Contractor shall receive no additional payment for portable barrier or impact attenuators when moving the construction access points to complete the construction of the proposed median barrier. The Contractor shall submit proposed locations for the construction access points to the Engineer for approval prior to setting up the work zone.

DESIGN AGENCY	
DESIGNER	DAB
REVIEWER	EMK 10/15/21
PROJECT ID	87904
SHEET	TOTAL
P.20	152

SHEET NUM.															PART.	ITEM	ITEM	GRAND	UNIT	DESCRIPTION	SEE SHEET NO.
10	11	13	14	15	17	18	19	20	53	56	57	59	118	127-130	01/MS/OT	EXT	TOTAL				
										159					159	202	23000	159	SY	ROADWAY PAVEMENT REMOVED	
									22,042						22,042	202	30701	22,042	FT	CONCRETE BARRIER REMOVED, AS PER PLAN	11
											50				50	202	38000	50	FT	GUARDRAIL REMOVED	
	609														609	203	10000	609	CY	EXCAVATION	
	294														294	203	20000	294	CY	EMBANKMENT	
															2,119	204	10000	2,119	SY	SUBGRADE COMPACTION	
											0.88				0.88	209	15001	0.88	STA	RESHAPING UNDER GUARDRAIL, AS PER PLAN	11
											37.5				37.5	606	15050	37.5	FT	GUARDRAIL, TYPE MGS	
											1				1	606	26150	1	EACH	ANCHOR ASSEMBLY, MGS TYPE E (MASH 2016)	
									16,851						16,851	622	10101	16,851	FT	CONCRETE BARRIER, SINGLE SLOPE, TYPE B1, AS PER PLAN A	12
									42						42	622	10101	42	FT	CONCRETE BARRIER, SINGLE SLOPE, TYPE B1, AS PER PLAN B	12
									365						365	622	10141	365	FT	CONCRETE BARRIER, SINGLE SLOPE, TYPE C1, AS PER PLAN	12
									19						19	622	10200	19	EACH	BARRIER TRANSITION	
									5						5	622	10201	5	EACH	BARRIER TRANSITION, AS PER PLAN	12
									133						133	622	25006	133	EACH	CONCRETE BARRIER, END ANCHORAGE, REINFORCED, TYPE B1	
									12						12	622	25007	12	EACH	CONCRETE BARRIER, END ANCHORAGE, REINFORCED, TYPE B1, AS PER PLAN	12
									3						3	622	25014	3	EACH	CONCRETE BARRIER, END ANCHORAGE, REINFORCED, TYPE C1	
									3						3	622	25015	3	EACH	CONCRETE BARRIER, END ANCHORAGE, REINFORCED, TYPE C1, AS PER PLAN	12
								48,830							48,830	622	41100	48,830	FT	PORTABLE BARRIER, UNANCHORED	
									26						26	622	90000	26	FT	BARRIER, MISC.: CONCRETE BARRIER, TYPE B50	12
									9						9	622	90000	9	FT	BARRIER, MISC.: CONCRETE BARRIER, TYPE C50	12
																				EROSION CONTROL	
	2														2	659	00100	2	EACH	SOIL ANALYSIS TEST	
	90														90	659	00300	90	CY	TOPSOIL	
	810														810	659	10000	810	SY	SEEDING AND MULCHING	
	41														41	659	14000	41	SY	REPAIR SEEDING AND MULCHING	
	41														41	659	15000	41	SY	INTER-SEEDING	
	0.11														0.11	659	20000	0.11	TON	COMMERCIAL FERTILIZER	
	0.17														0.17	659	31000	0.17	ACRE	LIME	
	4.38														4.38	659	35000	4.38	MGAL	WATER	
															1,000	832	30000	1,000	EACH	EROSION CONTROL	
																				DRAINAGE	
									59						59	611	99101	59	EACH	INLET, NO. 3 FOR SINGLE SLOPE BARRIER, TYPE B1, AS PER PLAN	13
									3						3	611	99111	3	EACH	INLET, NO. 3 FOR SINGLE SLOPE BARRIER, TYPE C1, AS PER PLAN	13
		10													10	611	99155	10	EACH	INLET RECONSTRUCTED TO GRADE, AS PER PLAN	13
															5	611	99500	5	EACH	INLET, MISC.: INLET, NO. 3B50	13
		3,000													3,000	SPECIAL	61199820	3,000	LB	MISCELLANEOUS METAL	13
																				PAVEMENT	
					9,666										9,666	254	01000	9,666	SY	PAVEMENT PLANING, ASPHALT CONCRETE, 1.5"	
									16,301						16,301	254	01001	16,301	SY	PAVEMENT PLANING, ASPHALT CONCRETE, AS PER PLAN, 1.5"	13
									1,538						1,538	304	20000	1,538	CY	AGGREGATE BASE	
										186					186	305	13010	186	SY	9" CONCRETE BASE, CLASS QC 1P	
					870					1,501					2,371	407	20000	2,371	GAL	NON-TRACKING TACK COAT	
										21					21	441	50300	21	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (448), 4"	
										441					441	50701	441	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, (448), UNDER GUARDRAIL, AS PER PLAN	12	
									688						688	442	20001	688	CY	ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (448), AS PER PLAN, PG76-22M, 1.5"	13
					403					403					403	442	20001	403	CY	ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (448), AS PER PLAN, PG70-22M, 1.5"	13
					6.59										6.59	618	40600	6.59	MILE	RUMBLE STRIPS, SHOULDER (ASPHALT CONCRETE)	
																				LIGHTING	
														88	88	625	00450	88	EACH	CONNECTION, FUSED PULL APART	
														77	77	625	00460	77	EACH	CONNECTION, UNFUSED PULL APART	
														100	100	625	00480	100	EACH	CONNECTION, UNFUSED PERMANENT	
														88	88	625	10495	88	EACH	LIGHT POLE, LOW MAST, AS PER PLAN, ALM50	14
														2	2	625	14306	2	EACH	MEDIAN LIGHT POLE FOUNDATION, 10' DEEP	
														72	72	625	14307	72	EACH	MEDIAN LIGHT POLE FOUNDATION, 10' DEEP, AS PER PLAN A	14
														1	1	625	14307	1	EACH	MEDIAN LIGHT POLE FOUNDATION, 10' DEEP, AS PER PLAN B	14
														9	9	625	14600	9	EACH	LIGHT POLE FOUNDATION, MISC.: MEDIAN FOUNDATION ON SPREAD FOOTER	14
														1	1	625	15201	1	EACH	LIGHT TOWER FOUNDATION, 36" X 25' DEEP, AS PER PLAN	15
														1	1	625	15301	1	EACH	LIGHT TOWER FOUNDATION, 36" X 30' DEEP, AS PER PLAN	15

GENERAL SUMMARY

DESIGN AGENCY



DESIGNER

DAB

REVIEWER

EMK 10/15/21

PROJECT ID


87904

SHEET TOTAL

P.40 152

REF. NO.	SHEET NO.	PLAN SPLIT NO.	STATION TO STATION	LENGTH	BEGIN WIDTH	ENDING WIDTH	AVERAGE WIDTH	AREA	202	254	305	407	441	442						
									PAVEMENT REMOVED	PAVEMENT PLANING, ASPHALT CONCRETE, AS PER PLAN, 1.5"	9" CONCRETE BASE, CLASS QC 1P	NON-TRACKING TACK COAT	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (448), 4"	ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (448), AS PER PLAN, PC76-2M, 1.5"						SY
				FT.	FT.	FT.	FT.	SQ. YD.												
			IR-71 NB RESURFACING																	
		1	814+30.00 822+82.48	852.48	4.00	4.00	4.00	378.88												
		1	825+54.52 825+68.43	13.91			CADD AREA	5.06												
		1	825+68.43 828+05.00	236.57	4.00	4.00	4.00	105.15												
		1	828+05.00 828+95.00	90.00	2.00	2.00	2.00	20.00												
		1	828+95.00 839+21.03	1026.03	4.00	4.00	4.00	456.02												
		1	841+16.38 851+75.00	1058.62	4.00	4.00	4.00	470.50												
		1	851+75.00 852+65.00	90.00	2.00	2.00	2.00	20.00												
		1	852+65.00 879+22.00	2657.00	4.00	4.00	4.00	1180.89												
		1	879+28.00 902+23.67	2295.67	4.00	4.00	4.00	1020.30												
		1	902+23.67 902+63.67	40.00	4.00	2.50	3.25	14.45												
		1	902+63.67 903+10.11	46.44	2.50	2.50	2.50	12.91												
		1	903+10.11 903+50.11	40.00	2.50	4.00	3.25	14.45												
		1	903+50.11 927+59.23	2409.12	4.00	4.00	4.00	1070.72												
		1	929+40.54 938+96.33	955.79	4.00	4.00	4.00	424.80												
		1	940+61.35 941+66.00	104.65	4.00	4.00	4.00	46.52												
		1	941+66.00 942+06.00	40.00	4.00	3.00	3.50	15.56												
		1	942+06.00 942+16.00	10.00	3.00	3.00	3.00	3.34												
		1	942+16.00 942+56.00	40.00	3.00	4.00	3.50	15.56												
		1	942+56.00 942+70.00	14.00	4.00	4.00	4.00	6.23												
		1	942+70.00 943+60.00	90.00	2.00	2.00	2.00	20.00												
		1	943+60.00 953+63.89	1003.89	4.00	4.00	4.00	446.18												
		1	955+75.44 965+05.00	929.56	4.00	4.00	4.00	413.14												
		1	965+05.00 965+73.00	68.00	2.00	2.00	2.00	15.12												
		1	965+73.00 965+84.00	11.00	2.00	1.73	1.86	2.28												
		1	965+84.00 966+13.00	29.00	3.73	3.00	3.36	10.84												
		1	966+13.00 966+23.00	10.00	3.00	3.00	3.00	3.34												
		1	966+23.00 966+63.00	40.00	3.00	4.00	3.50	15.56												
		1	966+63.00 968+28.77	165.77	4.00	4.00	4.00	73.68												
		1	970+98.80 973+94.48	295.68	4.00	4.00	4.00	131.42												
		1	975+90.48 998+35.00	2244.52	4.00	4.00	4.00	997.57												
		1	998+35.00 998+75.00	40.00	4.00	3.00	3.50	15.56												
		1	998+75.00 998+85.00	10.00	3.00	3.00	3.00	3.34												
		1	998+85.00 998+93.00	8.00	3.00	3.20	3.10	2.76												
		1	998+93.00 999+25.00	32.00	1.20	2.00	1.60	5.69												
		1	999+25.00 999+51.00	26.00	2.00	2.00	2.00	5.78												
		1	999+51.00 1010+82.68	1131.68	4.00	4.00	4.00	502.97												
			IR-71 SB RESURFACING																	
		1	781+07.33 781+12.99	5.66			CADD AREA	1.42												
		1	781+12.99 781+89.00	76.01	4.00	4.00	4.00	33.79												
SUBTOTALS																				
TOTALS CARRIED TO SHEET 56																				
PLAN SPLIT #1 TOTAL																				
PLAN SPLIT #2 TOTAL																				
									8	7980		718		333						
									7.51	33.79		3.05		1.41						
									7.51	7980.36		718.47		332.68						
									8	7980		718		333						

PAVEMENT SUBSUMMARY

DESIGN AGENCY

 DESIGNER
 DAB
 REVIEWER
 EMK 10/15/21
 PROJECT ID
 87904
 SHEET TOTAL
 P.54 152

REF. NO.	SHEET NO.	PLAN SPLIT NO.	STATION TO STATION	LENGTH	BEGIN WIDTH	ENDING WIDTH	AVERAGE WIDTH	AREA	202	254	305	407	441	442							
									PAVEMENT REMOVED	PAVEMENT PLANING, ASPHALT CONCRETE, AS PER PLAN, 1.5"	9" CONCRETE BASE, CLASS QC 1P	NON-TRACKING TACK COAT	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (448), 4"	ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (448), AS PER PLAN, PG 676-22M, 1.5"						SY	SY
<u>IR-71 NB FULL DEPTH SHOULDER</u>																					
P-1	70	1	828+05.00 828+95.00	90.00	2.00	2.00	2.00	20.00	14.45		20.00	3.60	2.23	0.84							
P-3	75	1	851+75.00 852+65.00	90.00	2.00	2.00	2.00	20.00	14.45		20.00	3.60	2.23	0.84							
P-5	80	1	879+22.00 879+28.00	6.00	4.00	4.00	4.00	2.67	2.67		2.67	0.49	0.30	0.12							
P-7	93	1	942+70.00 943+60.00	90.00	2.00	2.00	2.00	20.00	14.45		20.00	3.60	2.23	0.84							
P-9	98	1	965+05.00 965+84.00	79.00	2.00	2.00	2.00	17.56	12.33		17.56	3.17	1.96	0.74							
P-11	104	1	998+93.00 999+51.00	58.00	2.00	2.00	2.00	12.89	10.18		12.89	2.33	1.44	0.54							
<u>IR-71 SB FULL DEPTH SHOULDER</u>																					
P-2	70	1	828+05.00 828+95.00	90.00	2.00	2.00	2.00	20.00	14.45		20.00	3.60	2.23	0.84							
P-4	75	1	851+75.00 852+65.00	90.00	2.00	2.00	2.00	20.00	14.45		20.00	3.60	2.23	0.84							
P-6	80	1	879+22.00 879+28.00	6.00	4.00	4.00	4.00	2.67	2.67		2.67	0.49	0.30	0.12							
P-8	93	1	942+70.00 943+60.00	90.00	2.00	2.00	2.00	20.00	14.45		20.00	3.60	2.23	0.84							
P-10	98	1	965+05.00 965+84.00	79.00	2.00	2.00	2.00	17.56	12.35		17.56	3.17	1.96	0.74							
P-12	104	1	998+93.00 999+51.00	58.00	2.00	2.00	2.00	12.89	10.18		12.89	2.33	1.44	0.54							
SUBTOTALS									137.08		186.24	33.58	20.78	7.84							
TOTALS CARRIED BELOW									137		186	34	21	8							
PLAN SPLIT #1 TOTAL									137		186	34	21	8							
PLAN SPLIT #2 TOTAL																					
TOTALS FROM SHEET 54									8	7980		718		333							
TOTALS FROM SHEET 55									14	8321		749		347							
TOTALS FROM THIS SHEET									137		186	34	21	8							
TOTALS CARRIED TO GENERAL SUMMARY									159	16301		186	1501	21	688						

PAVEMENT SUBSUMMARY

DESIGN AGENCY	
DESIGNER	DAB
REVIEWER	EMK 10/15/21
PROJECT ID	87904
SHEET TOTAL	P.56 152