

STATE OF ILLINOIS
DEPARTMENT OF NATURAL RESOURCES
OFFICE OF WATER RESOURCES

DES PLAINES RIVER – RAND PARK FLOOD CONTROL
PUMP STATION REPAIRS AND
FLOODGATE IMPROVEMENTS

DES PLAINES, ILLINOIS
COOK COUNTY

FR-431

2011

INDEX OF SHEETS

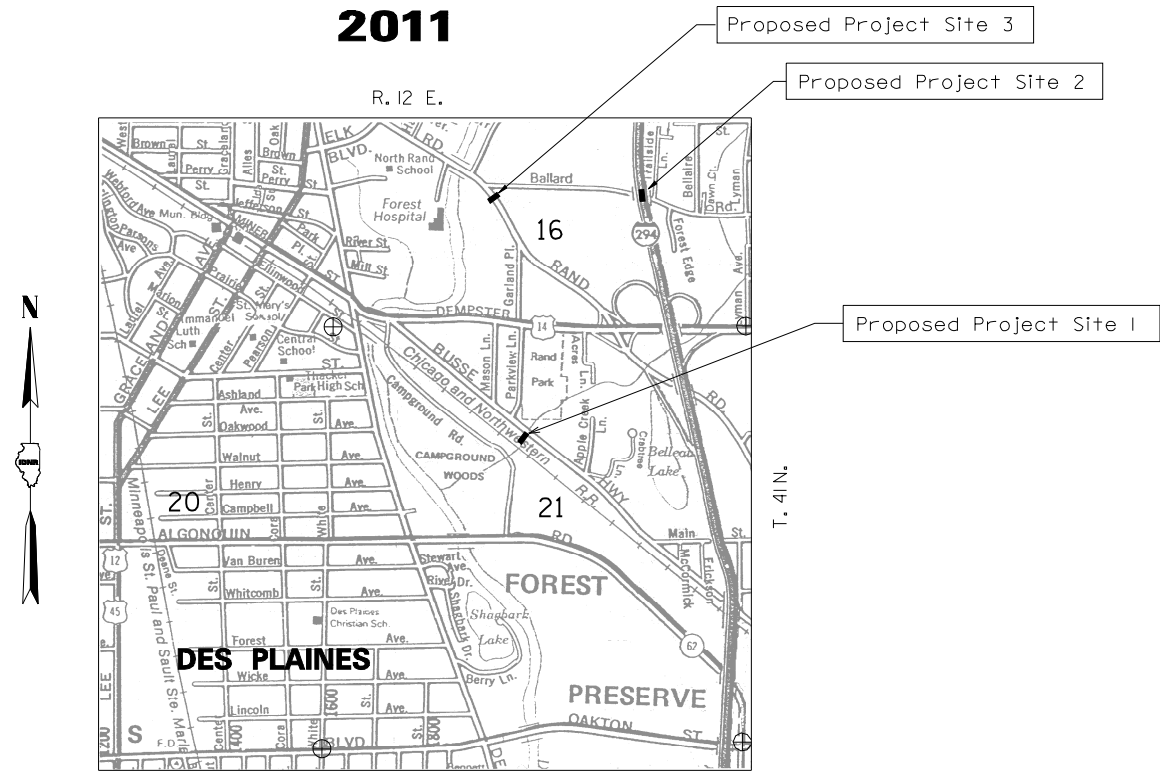
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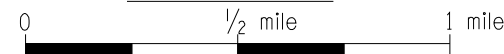
- 701006 OFF-RD OPERATIONS, 2L, 2W, 15' TO 24" FROM PAVEMENT EDGE
- 701101 OFF-RD OPERATIONS, MULTILANE, 15' TO 24" FROM PAVEMENT EDGE
- 701901 TRAFFIC CONTROL DEVICES



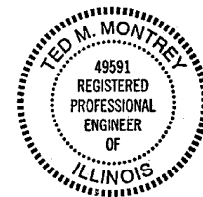
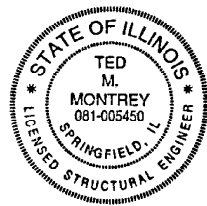
REGIONAL MAP



LOCATION MAP



Scale



Ted Montrey 8/25/11
ILLINOIS REGISTERED STRUCTURAL ENGINEER NO. 081-005450

LICENSE EXPIRES 11-30-2012

Ted Montrey 8/25/11
ILLINOIS REGISTERED PROFESSIONAL ENGINEER NO. 062-049591

LICENSE EXPIRES 11-30-2011

APPROVED BY *[Signature]* DATE 8-25-11
DIRECTOR

Designed By IMM Checked By GMS
 Drawn By JJF Checked By GMS
 9/1/2011 2:29:11 PM
 O:\Dwr\Proj\Impl\Projects\Rand Park Pump Station Paving Block Repair\DCN Plan Sheets\Summary of Quantities.dgn

SUMMARY OF QUANTITIES			
CODE NO.	PAY ITEM	UNIT	QUANTITY
20300100	CHANNEL EXCAVATION	CU YD	100
28200200	FILTER FABRIC	SQ YD	87
*50500405	FURNISHING AND ERECTING STRUCTURAL STEEL	POUND	500
51100300	SLOPE WALL 6 INCH	SQ YD	207
67100100	MOBILIZATION	L SUM	1
*	TEMPORARY COFFERDAM SYSTEM	L SUM	1

* SEE SPECIAL PROVISIONS

GENERAL NOTES

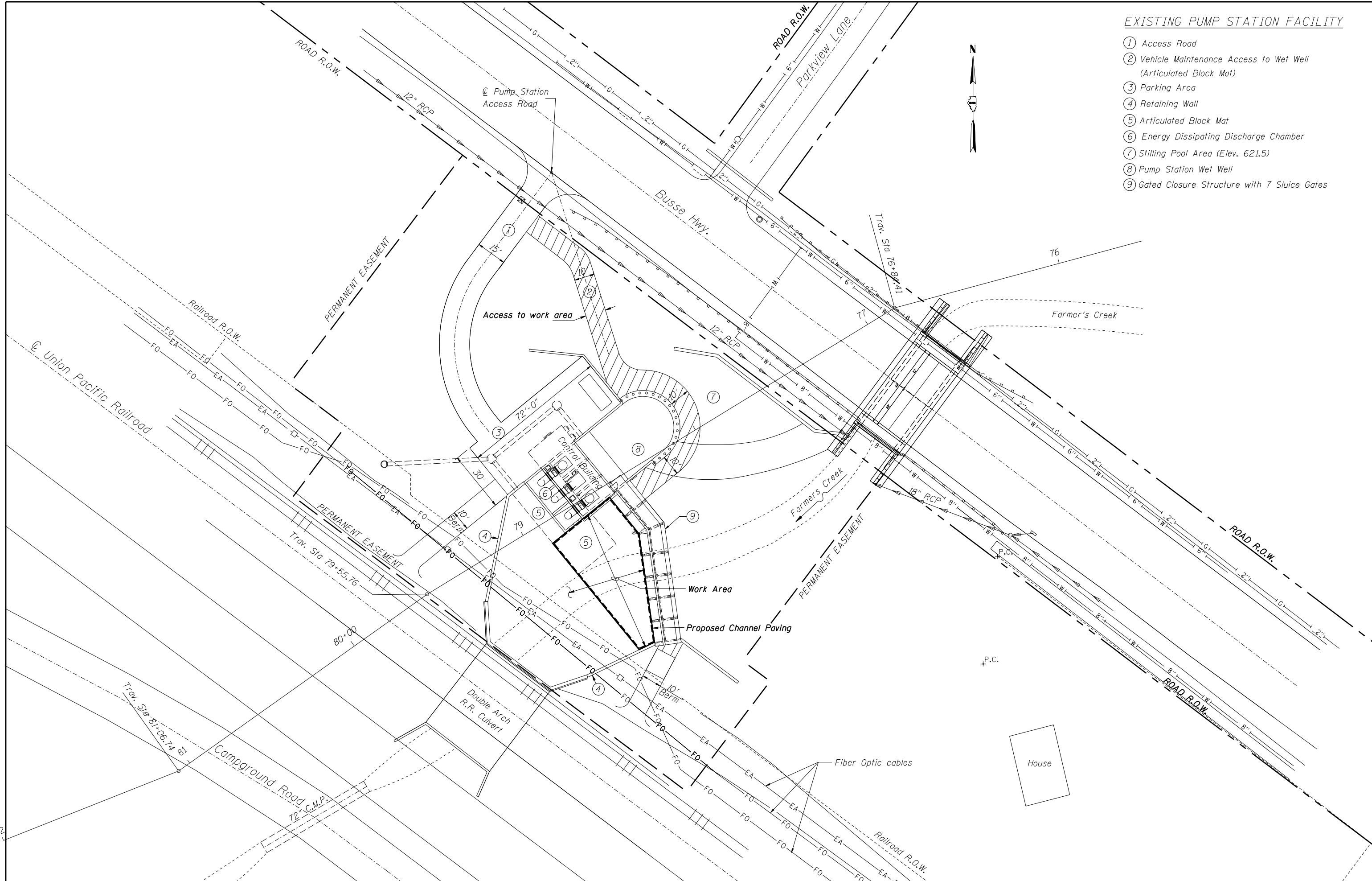
1. All elevations refer to N.G.V.D. 29 (National Geodetic Vertical Datum).
2. All lateral drainage that exists prior to construction shall be restored as shown on the plans and as directed by the Engineer. Unless otherwise specified, all costs of restoration shall be considered incidental to the Contract and no additional compensation will be allowed.
3. The Contractor is reminded to protect and restore, at his expense, in accordance with Article 107.20 of the Standard Specifications, any private or public property, including access roads, which may be damaged or destroyed due to construction operations.
4. All excess excavation and unsuitable materials shall be disposed of at locations provided by the Contractor at his expense and at locations inspected and approved by the Engineer.
5. The Contractor shall submit his proposed method of maintaining channel flows to the Engineer for approval prior to beginning construction.
6. The location, maintenance, removal and restoration to original condition of all haul roads shall be approved by the Engineer and all cost shall be incidental to the Contract.
7. All construction operations shall be contained within the easement area or work limits as indicated on the plans. It shall be the full responsibility of the Contractor to secure all rights of ingress and egress to said Right-of-Way including the satisfactory protection and restoration of property as required in article 107.20 and 107.23 of the Standard Specifications.
8. The Contractor shall call J.U.L.I.E. (800-892-0123) for the location of existing utilities 48 hours prior to construction.
9. The Contractor is alerted that the ground may be soft and movement of equipment may be difficult in the channel bottom area where Slope Wall installation is to be performed.
10. The sluice gates can be used as part of the Cofferdam System.
11. Plan dimensions and details relative to the existing structures have been taken from existing plans and/or past surveys and reports, and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in the scope of the work; however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

UTILITY REFERENCE TABLE

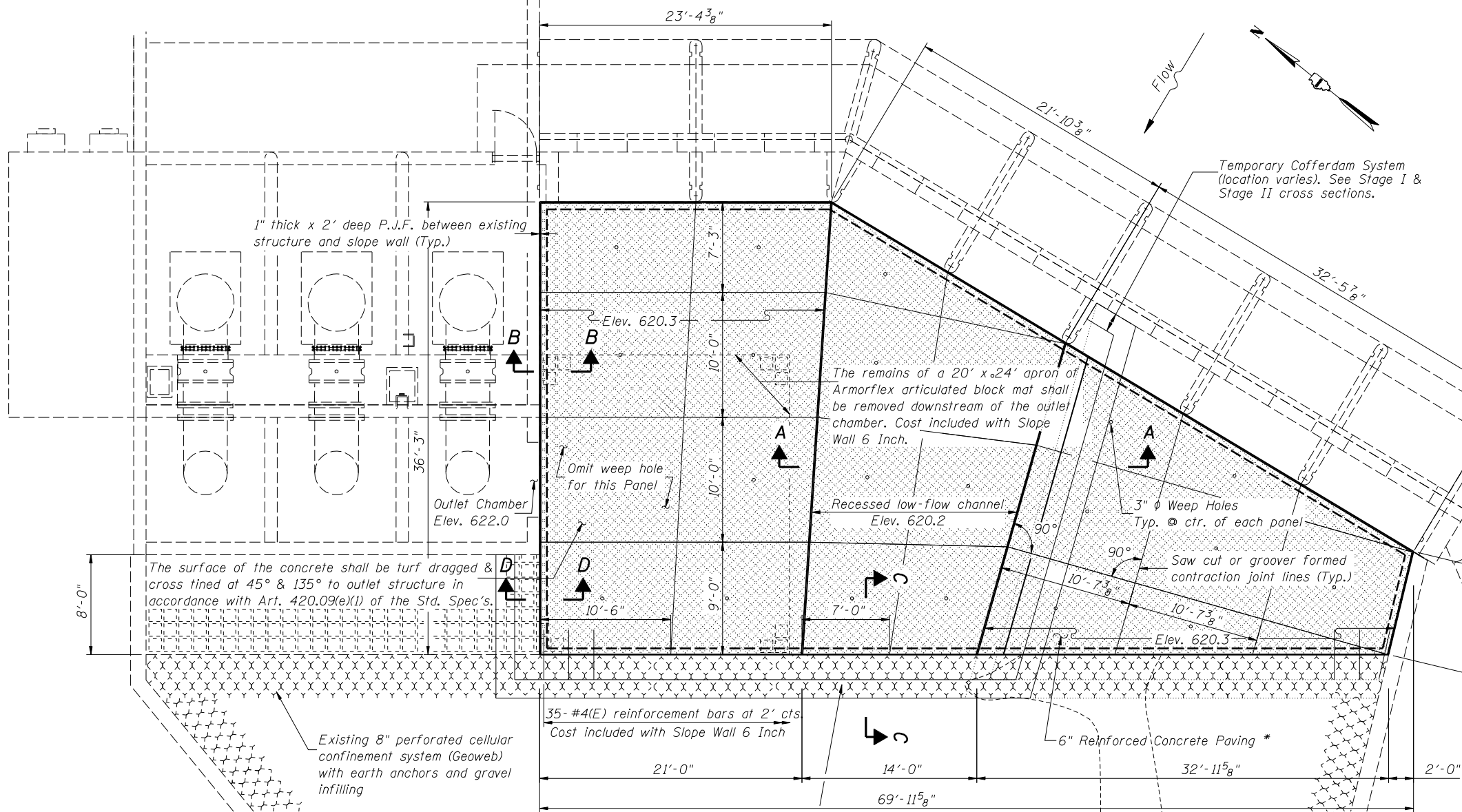
J.U.L.I.E.	Call 48 hours prior to construction	1-800-892-0123
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EXISTING PUMP STATION FACILITY

- ① Access Road
- ② Vehicle Maintenance Access to Wet Well
(Articulated Block Mat)
- ③ Parking Area
- ④ Retaining Wall
- ⑤ Articulated Block Mat
- ⑥ Energy Dissipating Discharge Chamber
- ⑦ Stilling Pool Area (Elev. 621.5)
- ⑧ Pump Station Wet Well
- ⑨ Gated Closure Structure with 7 Sluice Gates



Designed by GMS Checked by TMM
 Drawn by JJF Checked by TMM
 9/1/2011 2:24:12 PM 0:\0\proj\proj\Projects\Rand Park Pump Station Paving Block Repairs\UDM Plan Sheets\Pump Station Location Plan - Site 1.dgn

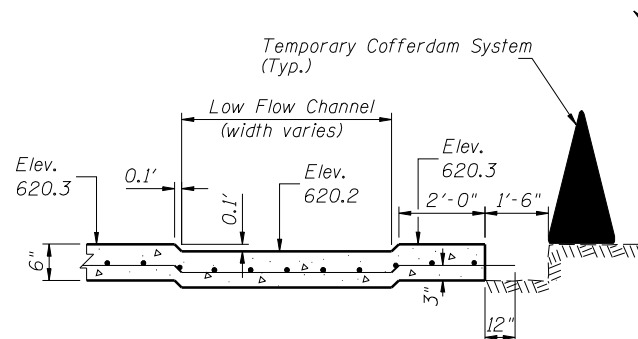


- Notes:**
1. All materials removed during construction shall become the property of the Contractor and shall be removed from site unless noted otherwise. Cost included with Slope Wall 6 Inch except as noted in Note 4.
 2. Class SI concrete shall be used throughout.
 3. The existing 480 square feet of Armorflex articulated block mats and 1383 square feet of Geoweb within the proposed repair area shall be removed. The scour holes shall be filled and compacted to an elevation 8 inches below proposed finished grade. The base in the original paving block location shall be excavated to a depth of 8 inches below proposed finished grade. Filter fabric shall then be placed over the repaired scour holes and original paving block locations and shall lap a minimum of 6 inches with the surrounding existing filter fabric. The existing aggregate from the areas where Geoweb is removed shall be excavated, distributed and compacted or removed from site as necessary to bring the base to the proposed subgrade elevation of the proposed channel paving.
 4. The removal/disposal of the mounds of silt and vegetation as noted below shall be paid for as channel excavation.
 5. Access to the work area shall be limited to the articulated block mat as shown on sheet 3.
 6. Sluice gate openings are 8' x 8'.

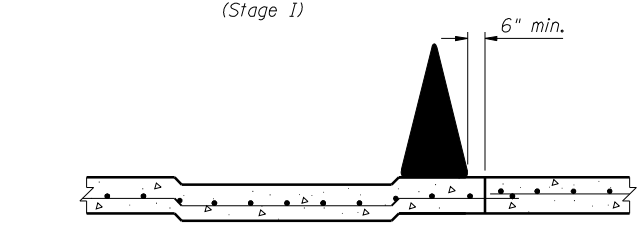
ESTIMATED VOLUMES
(For Information Only)

Aggregate to be Excavated	25 Cu. Yd.
Excavation below existing paving blocks	2 Cu. Yd.
Fill required below proposed filter fabric in scour hole	1 Cu. Yd.
Aggregate required above new filter fabric	5 Cu. Yd.
Approx. volume to be removed from site (from slope wall and aggregate ridge areas)	21 Cu. Yd.
Paving Blocks to be removed from site	53 Sq. Yd.
Channel Excavation (downstream of slope wall)	100 Cu. Yd.

- Cofferdam Notes:**
- The Contractor is responsible for the design and construction of the Temporary Cofferdam System, which shall be approved by the Engineer.
 - The height of the cofferdam shall be sufficient to prevent overtopping by a flood with a recurrence interval selected by the Contractor.
 - The Contractor shall assume all risk of damages to his/her equipment and the work caused by flooding for the cofferdam design.
 - The Contractor shall submit his proposed method of maintaining channel flows, for approval by the Engineer, prior to beginning construction.

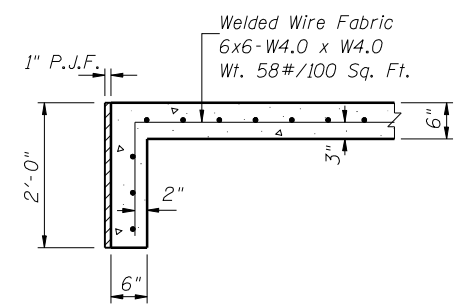


SECTION A-A
(Stage I)

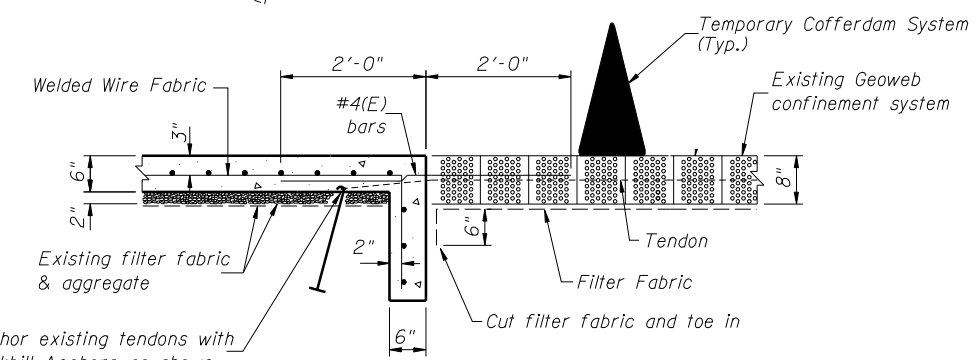


SECTION A-A
(Stage II)

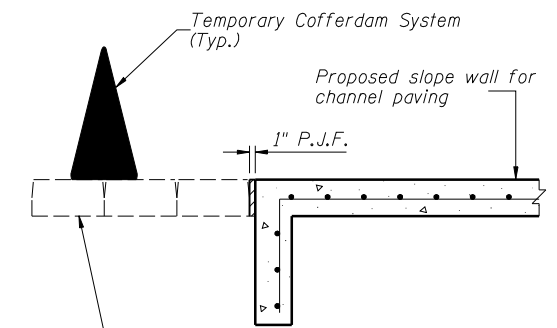
Mounds of silt and vegetation between the pumpstation and the railroad culvert shall be carefully removed down to the surface of the Geoweb and/or as directed by the Engineer and disposed of off site. Estimated 100 Cu. Yds. Channel Excavation. Quantity is a rough estimate and shall be measured for payment in accordance with Art. 202.07(b) of the Std. Specifications.



SECTION B-B
(Typical edges at structures)



SECTION C-C
(Typical at Geoweb interface)



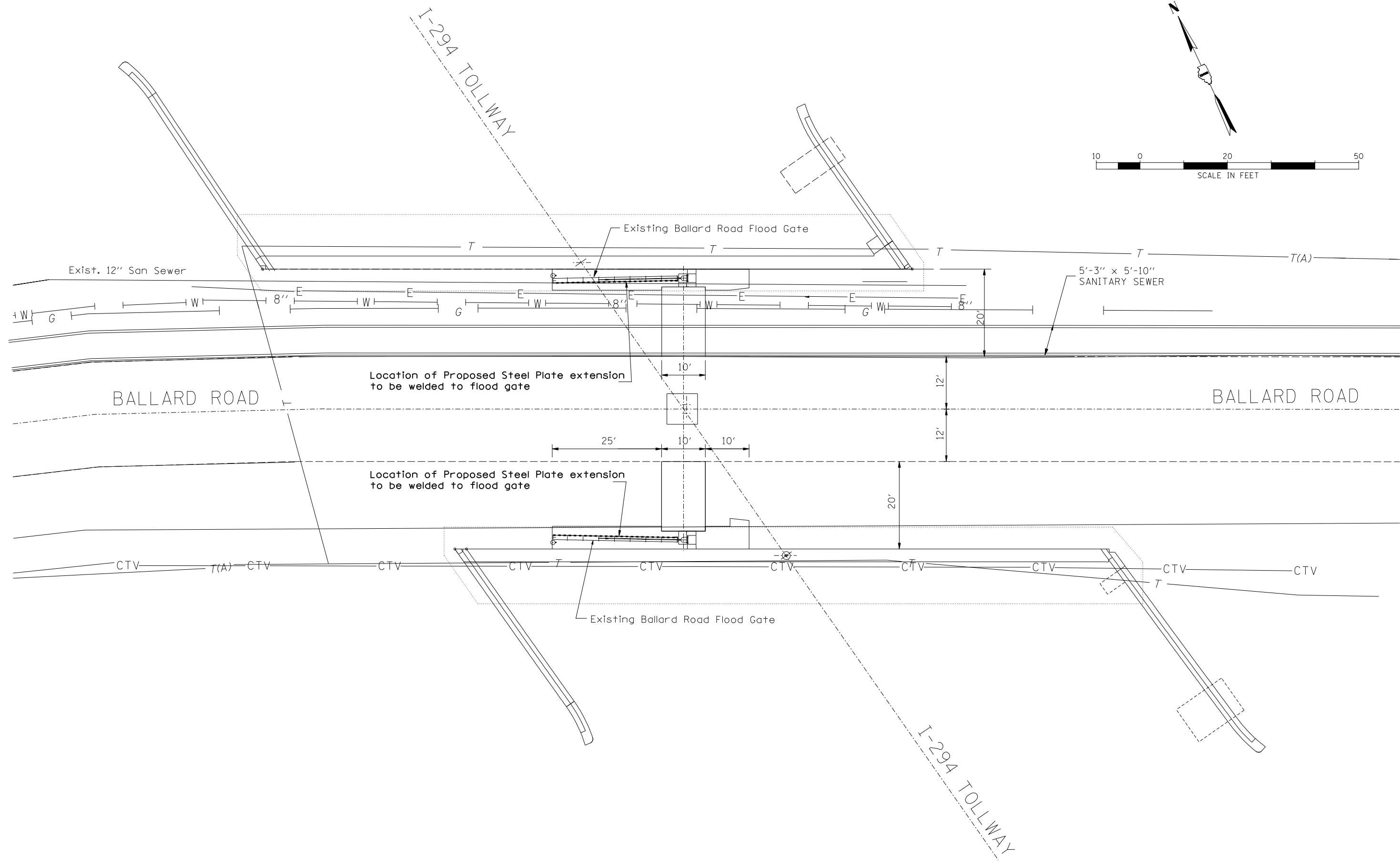
SECTION D-D

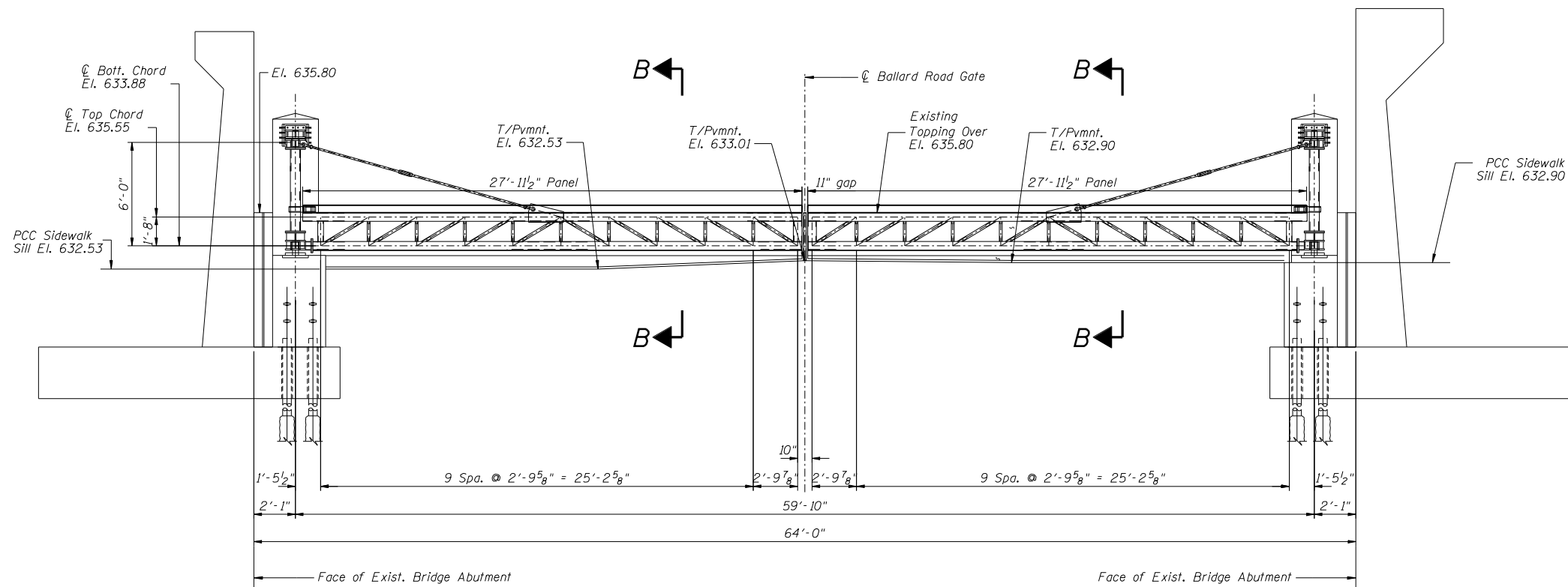
BILL OF MATERIAL

Slope Wall 6 Inch	Sq Yd	207
Filter Fabric	Sq Yd	87
Temporary Cofferdam System	L Sum	1
Channel Excavation	Cu Yd	100

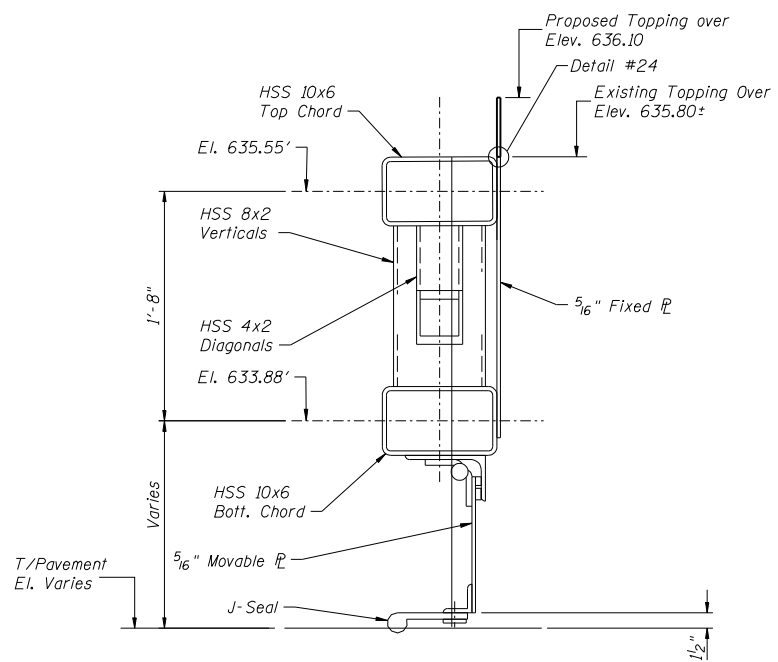
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 9/1/2011
 TMM
 GMS
 JUF
 GMS

DESIGNED BY: TMM
DRAWN BY: JUF
CHECKED BY: GMS
9/1/2011 2:17:09 PM O:\OwrProj\Imp\Projects\Rand Park Pump Station Paving Block Repair\NDGN Plan Sheets\Ballard Road Flood Gate Location Plan - Site 2.dgn

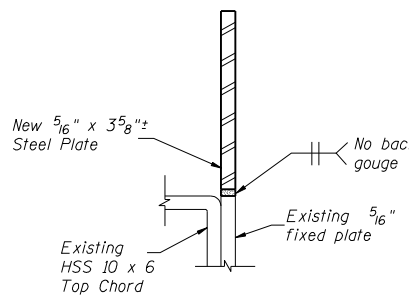




ELEVATION - LOOKING SOUTH EAST



SECTION B-B



DETAIL #24

PAINTING NOTES:

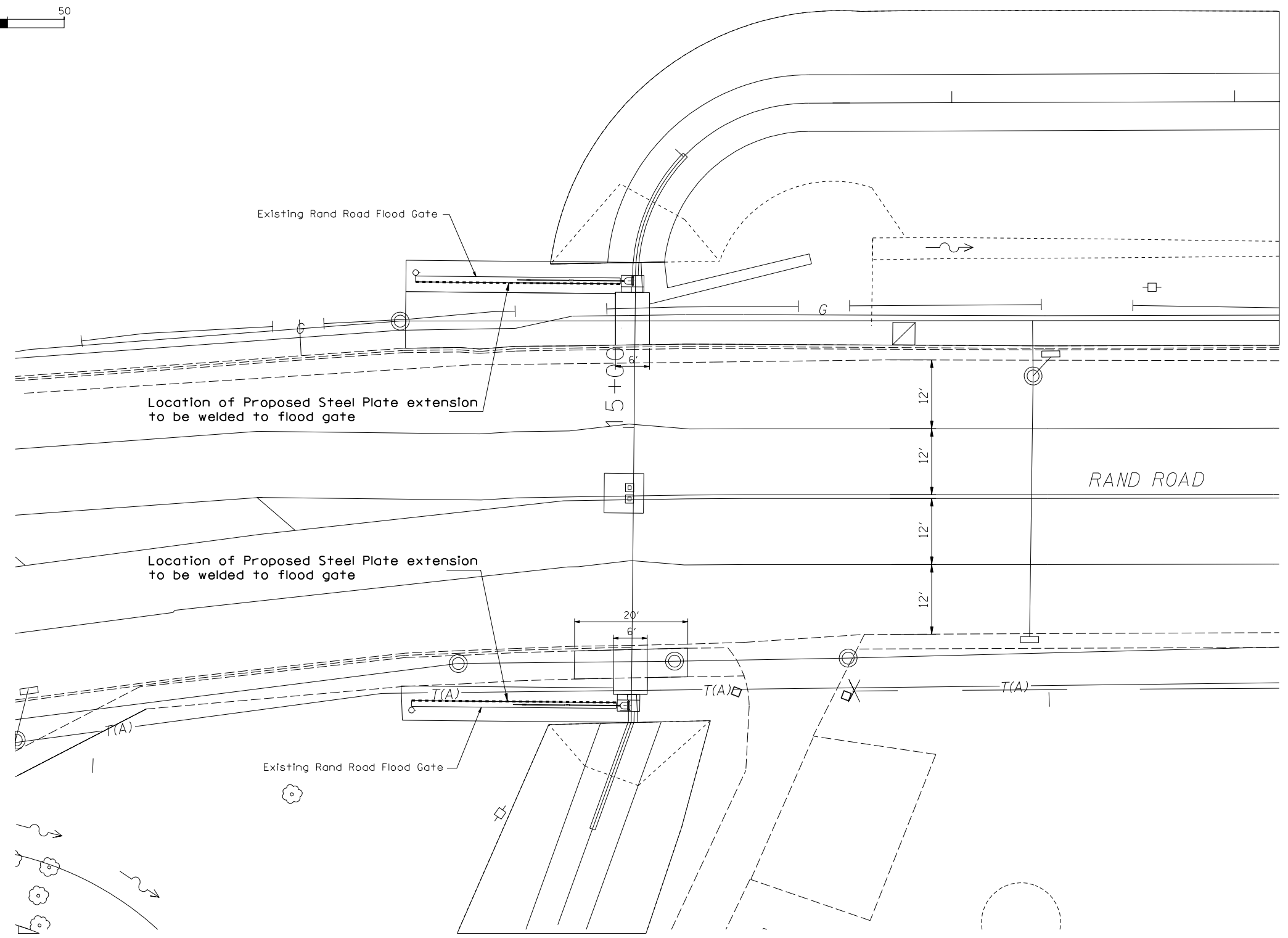
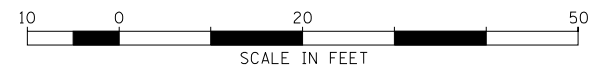
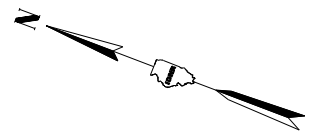
The paint shall match existing gate paint system and color. See Special Provisions. Cost included with Furnishing and Erecting Structural Steel.

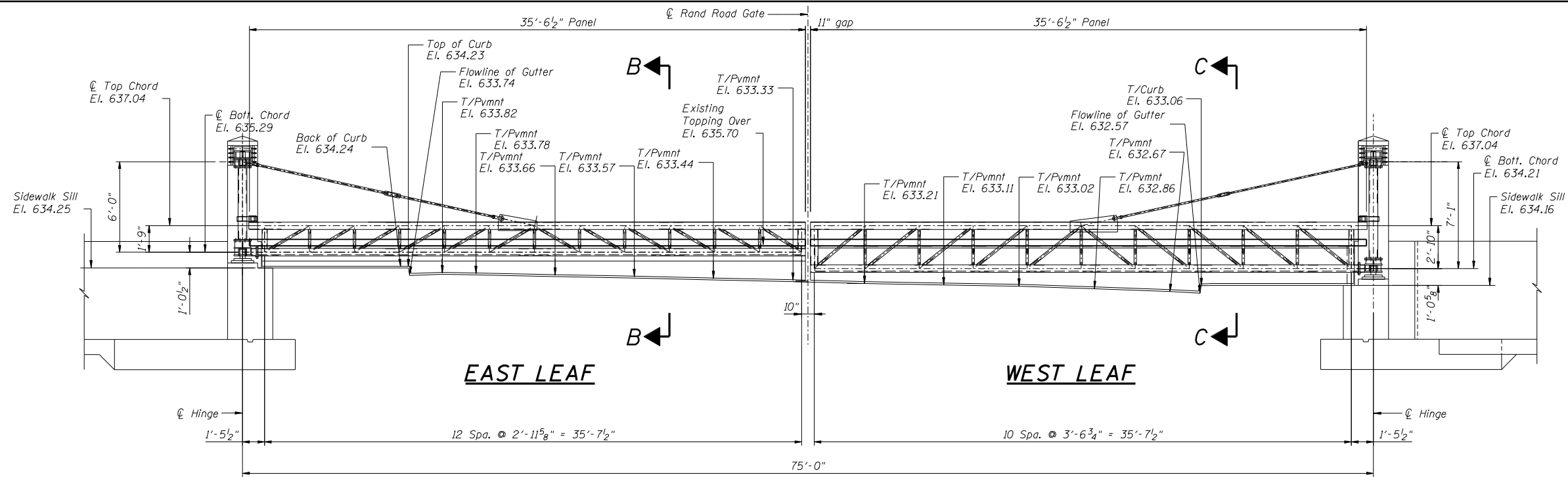
BILL OF MATERIAL

Furnishing and Erecting Structural Steel	Pound	220
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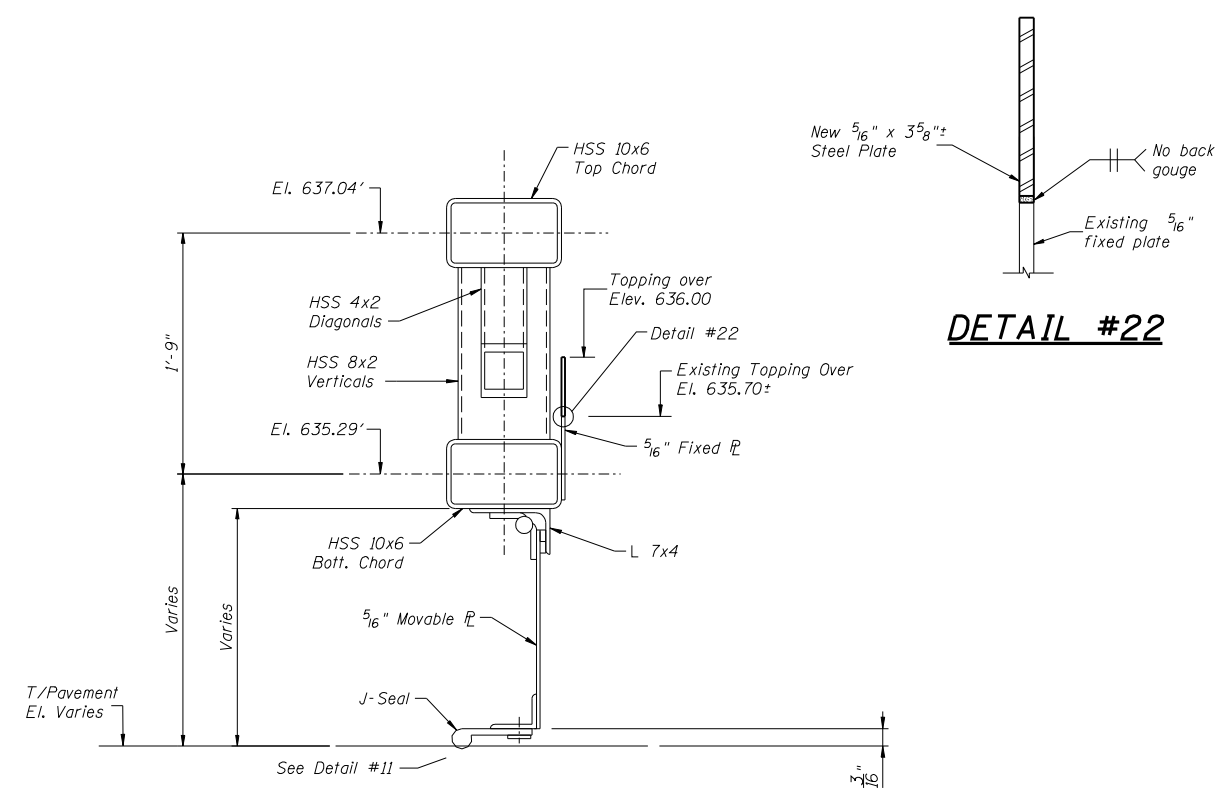
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DRAWN BY: JUF
CHECKED BY: GMS
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DRAWN BY: JJF
CHECKED BY: GMS
CHECKED BY: GMS
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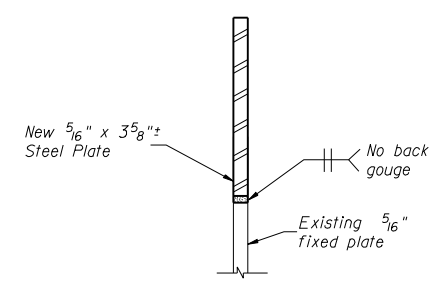




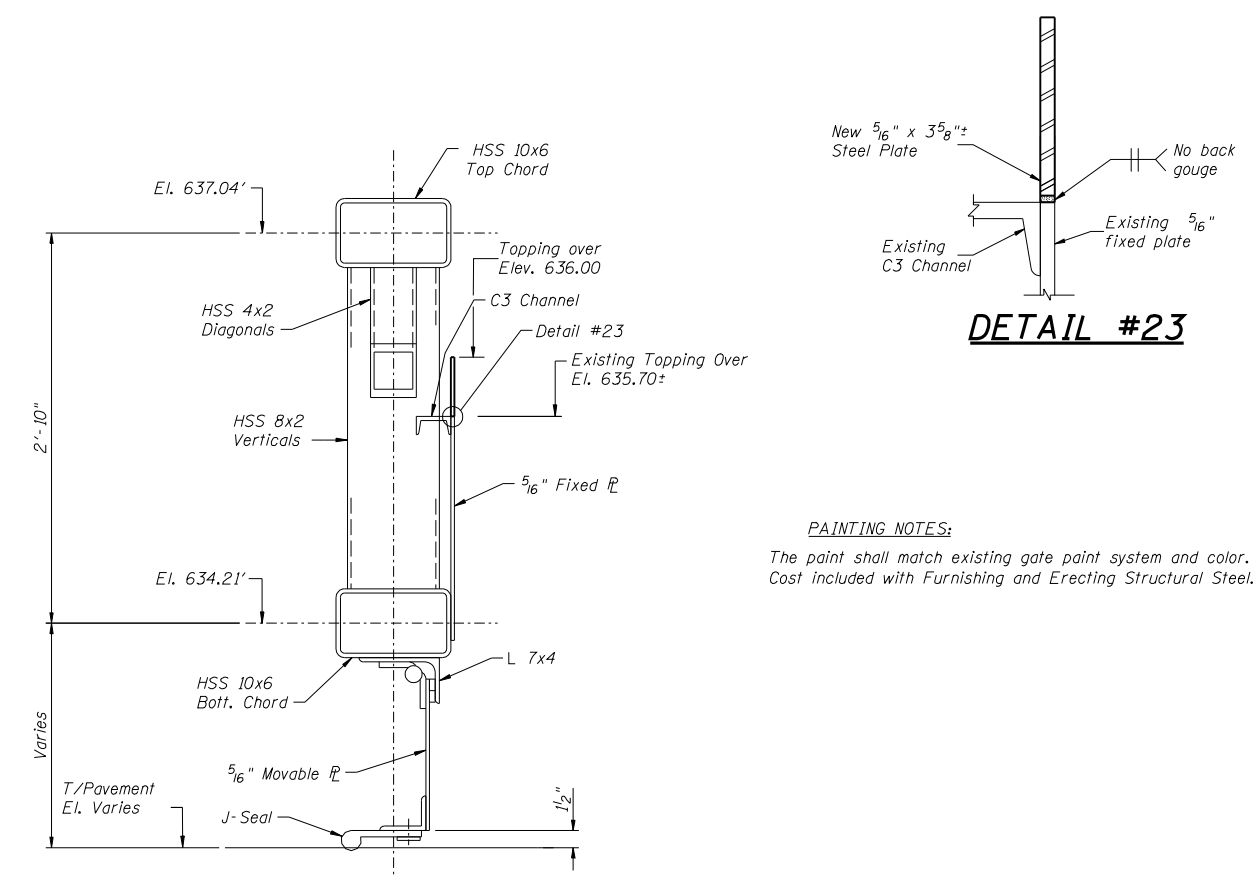
ELEVATION A-A - LOOKING SOUTH



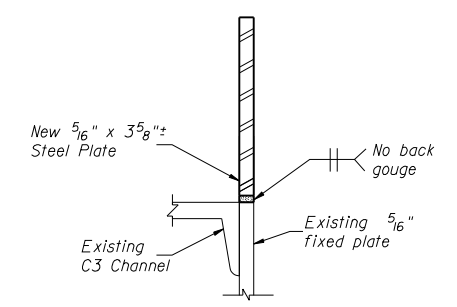
SECTION B-B - EAST LEAF NEAR CENTER OF RAND ROAD



DETAIL #22



SECTION C-C - WEST LEAF AT GUTTER LINE



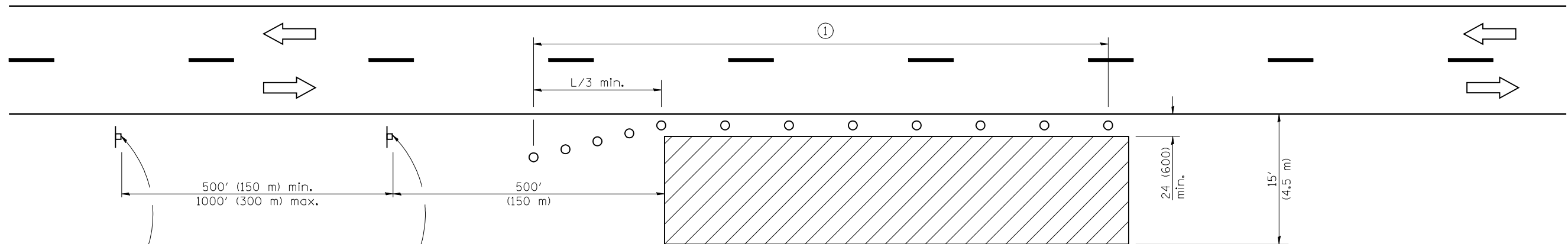
DETAIL #23

PAINTING NOTES:
The paint shall match existing gate paint system and color. See Special Provisions. Cost included with Furnishing and Erecting Structural Steel.

BILL OF MATERIAL

Furnishing and Erecting Structural Steel	Pound	280
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CHECKED BY: GMS
CHECKED BY: GMS
9/1/2011
2:25:37 PM
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For contract construction projects

ROAD CONSTRUCTION AHEAD

W20-I103(0)-48

For maintenance and utility projects

ROAD WORK AHEAD

W20-1(0)-48

W21-1a(0)-48 OR

WORKERS

W21-I110(0)-48

TYPICAL APPLICATIONS

- Utility operations
- Culvert extensions
- Side slope changes
- Guardrail installation and maintenance
- Delineator installation
- Landscaping operations
- Shoulder repair
- Sign installation and maintenance

SYMBOLS

- Work area
- Sign
- Cone, drum or barricade

① When the work operation exceeds one hour, cones, drums or barricades shall be placed at 25' (8 m) centers for L/3 distance, and at 50' (15 m) centers through the remainder of the work area.

GENERAL NOTES

This Standard is used where any vehicles, equipment, workers or their activities will encroach in the area 15' (4.5 m) to 24' (600) from the edge of pavement.

Calculate L as follows:

SPEED LIMIT	FORMULAS	
	English	(Metric)
40 mph (70 km/h) or less:	$L = \frac{WS^2}{60}$	$L = \frac{WS^2}{150}$
45 mph (80 km/h) or greater:	$L = (W)(S)$	$L = 0.65(W)(S)$

W = Width of offset in feet (meters).

S = Normal posted speed mph (km/h).

All dimensions are in inches (millimeters) unless otherwise shown.

DATE	REVISIONS
1-1-09	Switched units to English (metric).
	Corrected sign No.'s.
1-1-05	Revised title, notes, and sign spacing.

OFF-RD OPERATIONS, 2L, 2W, 15' (4.5 m) TO 24" (600 mm) FROM PAVEMENT EDGE

STANDARD 701006-03

Illinois Department of Transportation

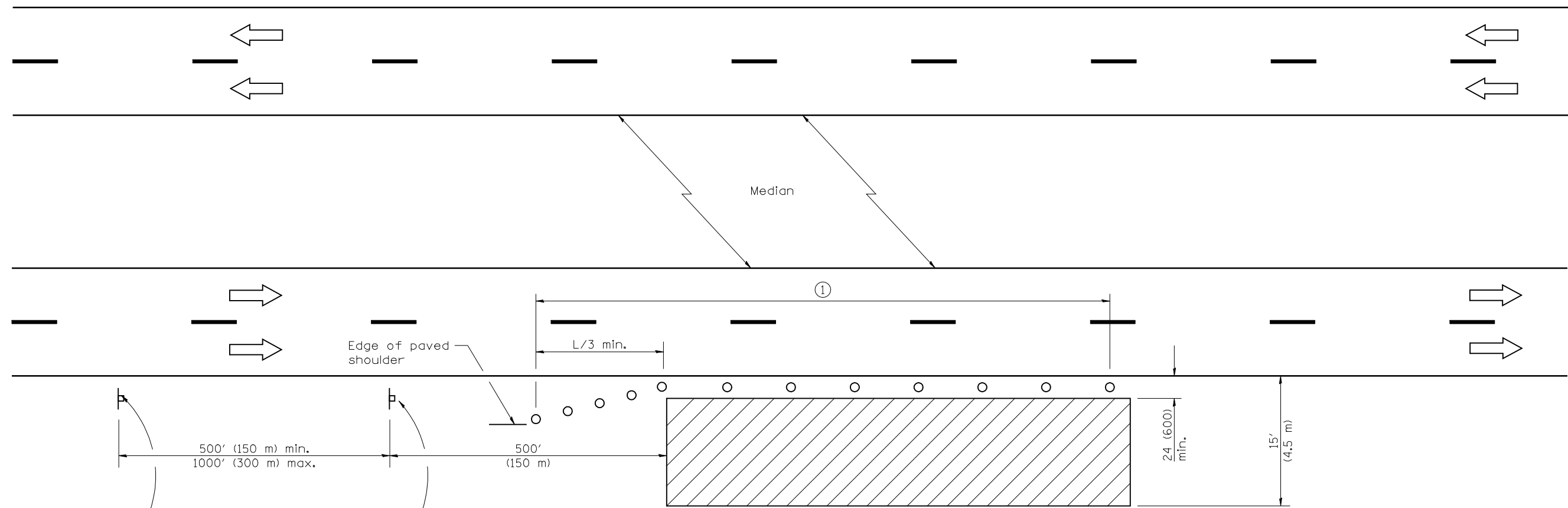
APPROVED January 1, 2009

ENGINEER OF OPERATIONS

APPROVED January 1, 2009

ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97



For contract construction projects

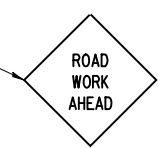


W20-I103(0)-48



W21-1a(0)-48
Or

For maintenance and utility projects



W20-1(0)-48



W21-I110(0)-48

TYPICAL APPLICATIONS

- Utility operations
- Culvert extensions
- Side slope changes
- Guardrail installation and maintenance
- Delineator installation
- Landscaping operations
- Shoulder repair
- Sign installation and maintenance

① When the work operation exceeds one hour, cones, drums or barricades shall be placed at 8 m (25') centers for L/3 distance, and at 15 m (50') centers through the remainder of the work area.

SYMBOLS

- Work area
- Sign
- Cone, drum or barricade

GENERAL NOTES

This Standard is used where any vehicles, equipment, workers or their activities will encroach in the area 15' (4.5 m) to 24' (600) from the edge of pavement.

Calculate L as follows:

SPEED LIMIT	FORMULAS	
	English	(Metric)
40 mph (70 km/h) or less:	$L = \frac{WS^2}{60}$	$L = \frac{WS^2}{150}$
45 mph (80 km/h) or greater:	$L = (W)(S)$	$L = 0.65(W)(S)$

W = Width of offset in feet (meters).

S = Normal posted speed mph (km/h).

All dimensions are in inches (millimeters) unless otherwise shown.

DATE	REVISIONS
1-1-09	Switched units to English (metric).
	Corrected sign No.'s.
1-1-05	Revised title, notes, and sign spacing.

OFF-RD OPERATIONS, MULTILANE, 15' (4.5 m) TO 24" (600 mm) FROM PAVEMENT EDGE

STANDARD 701101-02

Illinois Department of Transportation

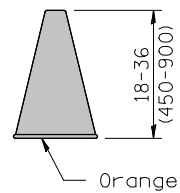
APPROVED January 1, 2009

 ENGINEER OF OPERATIONS

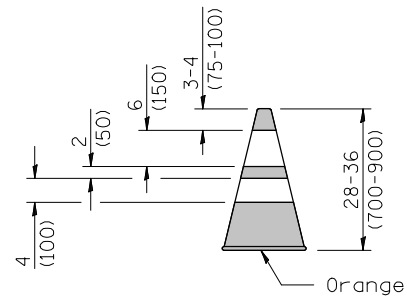
APPROVED January 1, 2009

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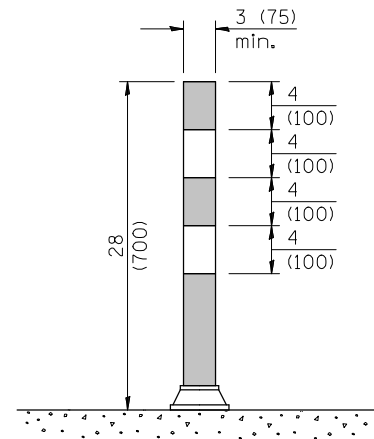
ISSUED 1-1-97



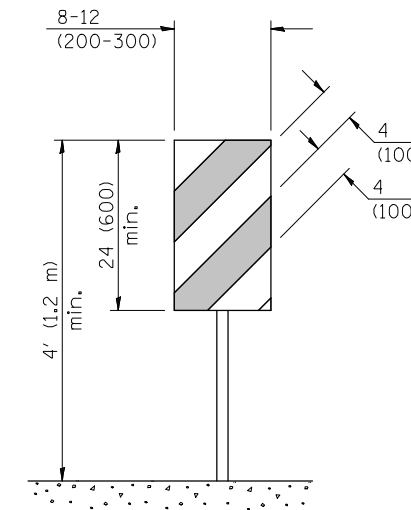
CONE



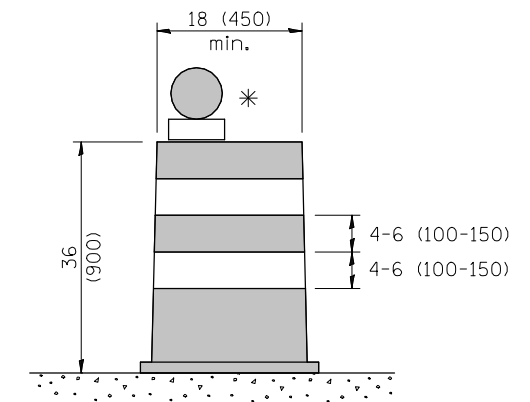
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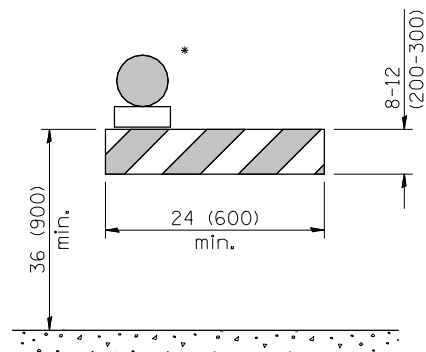
FLEXIBLE DELINEATOR



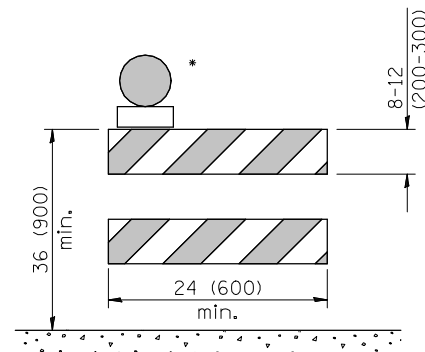
VERTICAL PANEL
POST MOUNTED



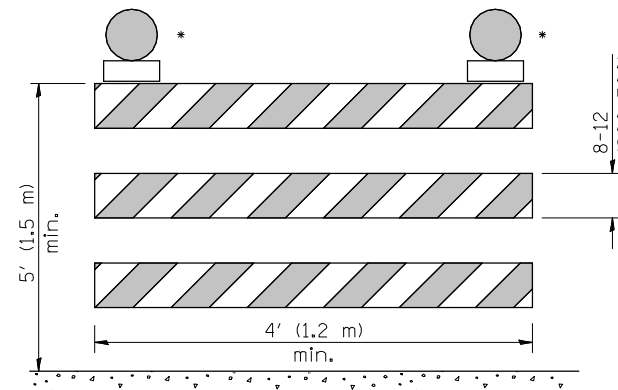
DRUM



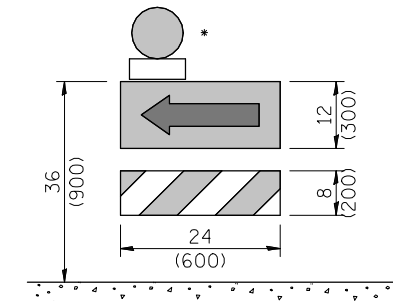
TYPE I BARRICADE



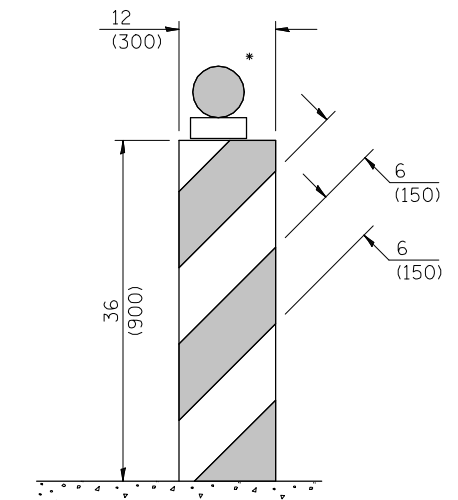
TYPE II BARRICADE



TYPE III BARRICADE



DIRECTION INDICATOR
BARRICADE



VERTICAL BARRICADE

* Warning lights (if required)

GENERAL NOTES

All heights shown shall be measured above the pavement surface.

All dimensions are in inches (millimeters) unless otherwise shown.

Illinois Department of Transportation

APPROVED January 1, 2009
ENGINEER OF OPERATIONS

APPROVED January 1, 2009
ENGINEER OF DESIGN AND ENVIRONMENT

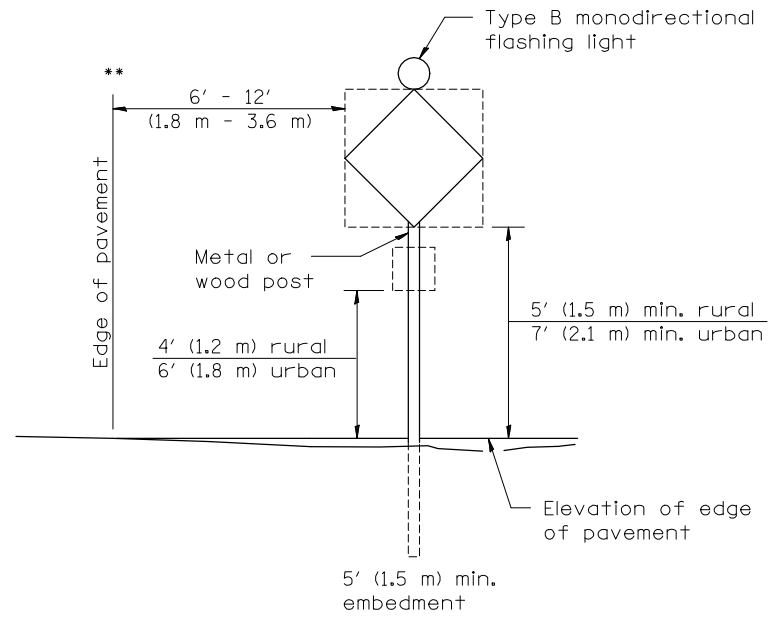
ISSUED 1-1-09

DATE	REVISIONS
1-1-09	Switched units to English (metric). Omitted light on vertical panel.
1-1-08	Renumbered Standard 702001-06. Rev. note for temp. signs on Sheet 2.

TRAFFIC CONTROL DEVICES

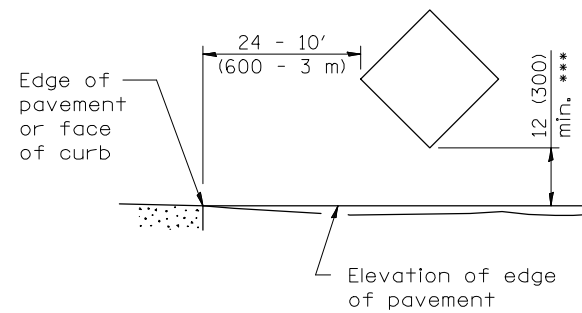
(Sheet 1 of 3)

STANDARD 701901-01



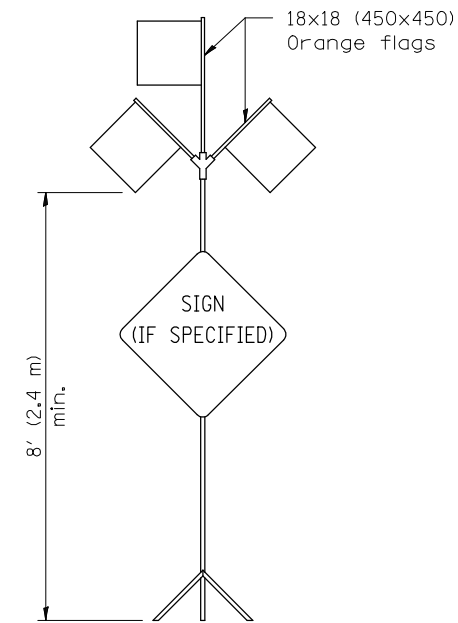
POST MOUNTED SIGNS

** When curb or paved shoulder are present this dimension shall be 24 (600) to the face of curb or 6' (1.8 m) to the outside edge of the paved shoulder.



SIGNS ON TEMPORARY SUPPORTS

*** When work operations exceed four days, this dimension shall be 5' (1.5 m) min. If located behind other devices, the height shall be sufficient to be seen by motorists.



HIGH LEVEL WARNING DEVICE



G20-1(0)-6036



G20-2a(0)-6024

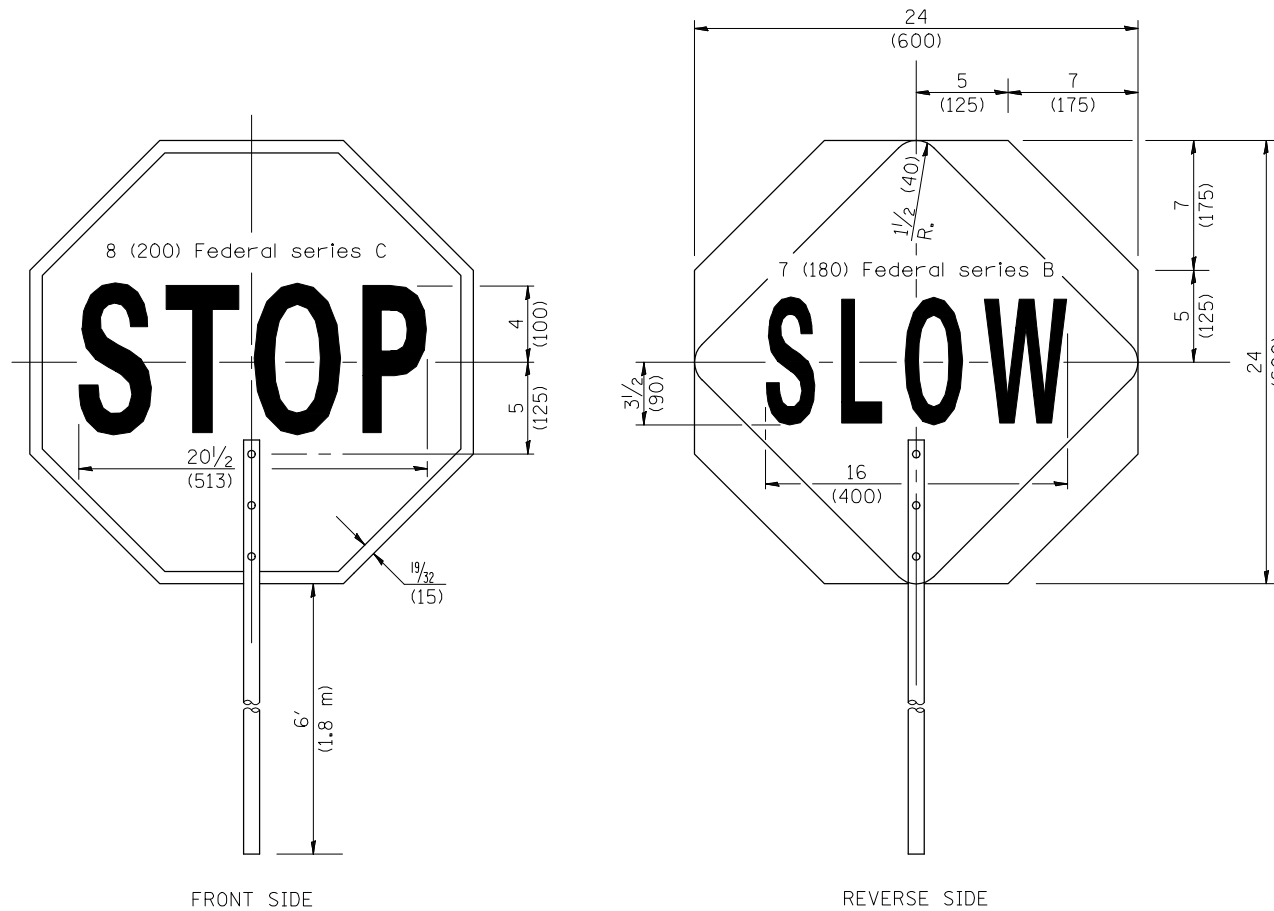
This signing is required for all projects 2 miles (3200 m) or more in length.

ROAD CONSTRUCTION NEXT X MILES sign shall be placed 500' (150 m) in advance of project limits.

END CONSTRUCTION sign shall be erected at the end of the job unless another job is within 2 miles (3200 m).

Dual sign displays shall be utilized on multi-lane highways.

WORK LIMIT SIGNING



FLAGGER TRAFFIC CONTROL SIGN

All dimensions are in inches (millimeters) unless otherwise shown.

Illinois Department of Transportation

APPROVED January 1, 2009
[Signature]
 ENGINEER OF OPERATIONS

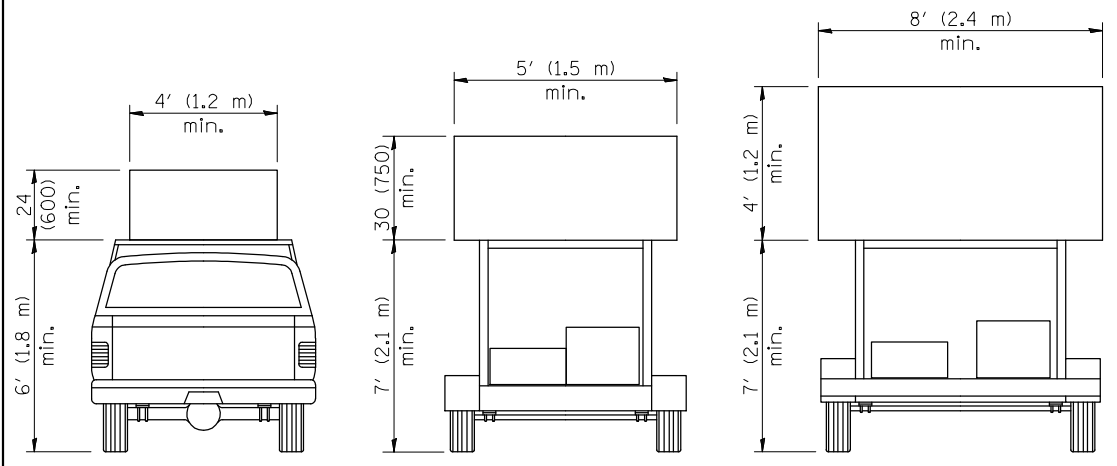
APPROVED January 1, 2009
[Signature]
 ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97

TRAFFIC CONTROL DEVICES

(Sheet 2 of 3)

STANDARD 701901-01

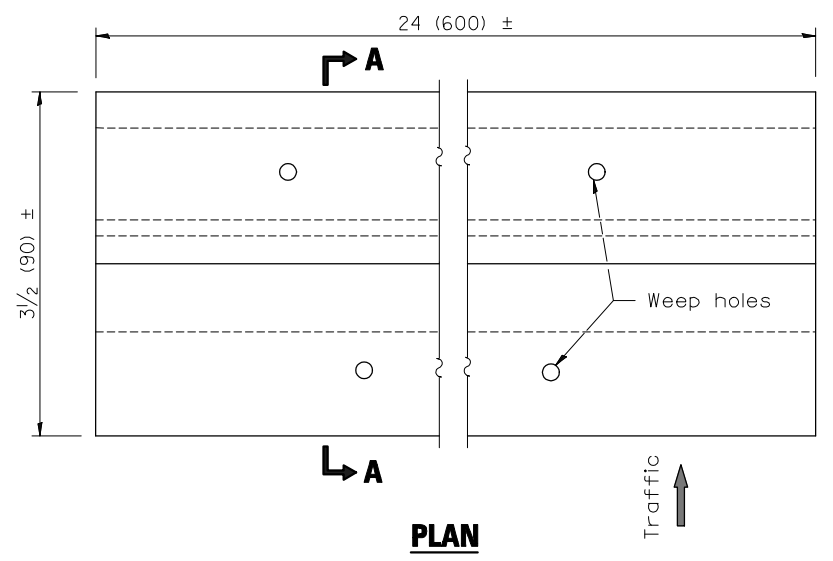


**TYPE A
ROOF
MOUNTED**

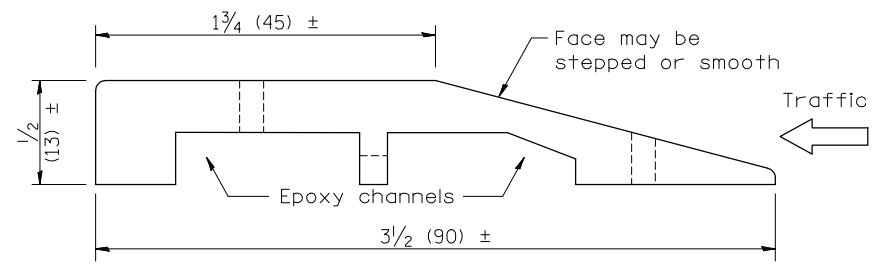
**TYPE B
ROOF OR TRAILER
MOUNTED**

**TYPE C
TRAILER
MOUNTED**

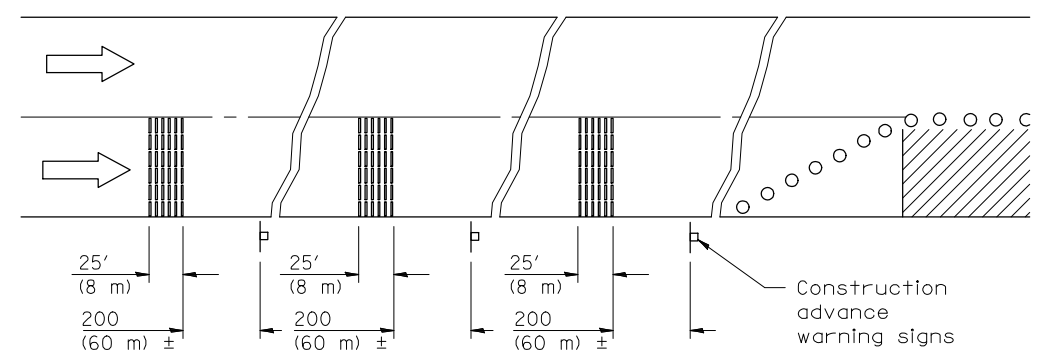
ARROW BOARDS



PLAN

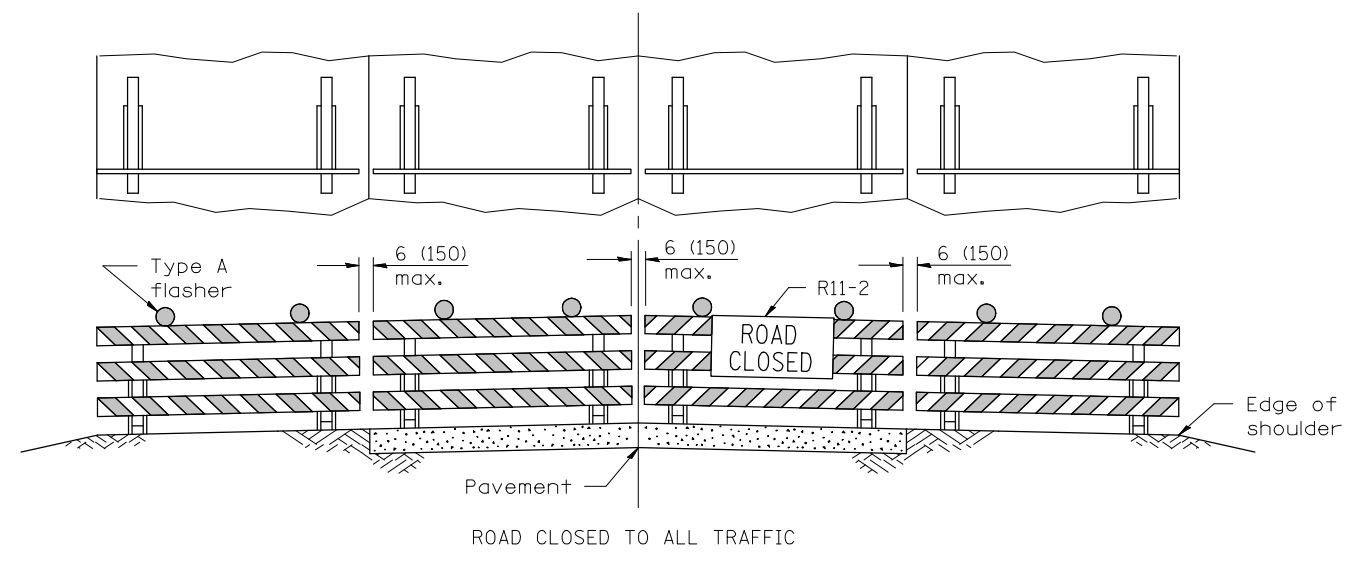


SECTION A-A



TYPICAL INSTALLATION

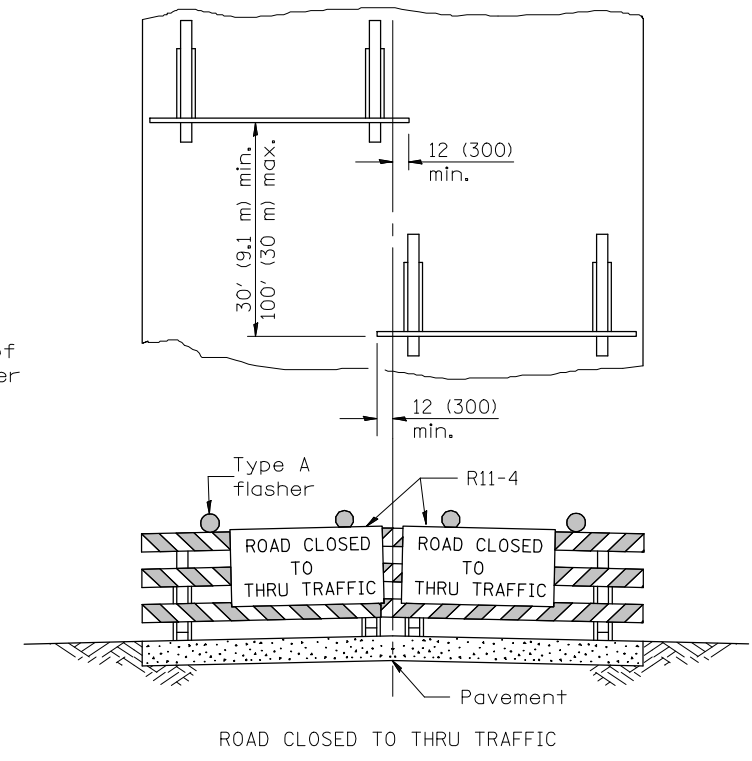
TEMPORARY RUMBLE STRIPS



ROAD CLOSED TO ALL TRAFFIC

Reflectorized striping may be omitted on the back side of the barricades. If a Type III barricade with an attached sign panel which meets NCHRP 350 is not available, the sign may be mounted on an NCHRP 350 temporary sign support directly in front of the barricade.

**TYPICAL APPLICATIONS OF
TYPE III BARRICADES CLOSING A ROAD**



ROAD CLOSED TO THRU TRAFFIC

Reflectorized striping shall appear on both sides of the barricades. If a Type III barricade with an attached sign panel which meets NCHRP 350 is not available, the signs may be mounted on NCHRP 350 temporary sign supports directly in front of the barricade.

All dimensions are in inches (millimeters) unless otherwise shown.

Illinois Department of Transportation

APPROVED January 1, 2009
ENGINEER OF OPERATIONS

APPROVED January 1, 2009
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97

**TRAFFIC CONTROL
DEVICES**

(Sheet 3 of 3)

STANDARD 701901-01