

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1248	99-00080-00-BR	LAKE	46	1

CONTRACT NO. 63020

FOR INDEX OF SHEETS, SEE SHEET NO. 2

STATE OF ILLINOIS STANDARDS:

NUMBER	DESCRIPTION
000001-05	STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
280001-04	TEMPORARY EROSION CONTROL SYSTEMS
420001-07	PAVEMENT JOINTS
420101-04	24' (7.2m) JOINTED PCC PAVEMENT
420401-06	BRIDGE APPROACH PAVEMENT
420601-05	24' (7.2m) PAVEMENT
421001-02	BAR REINFORCEMENT FOR CRC PAVEMENT
515001-02	NAME PLATE FOR BRIDGES
542401	METAL END SECTION FOR PIPE CULVERTS
604051-02	FRAME AND GRATE TYPE 11
606001-03	CONCRETE CURB TYPE B AND COMBINATION CONCRETE CURB AND GUTTER
630001-07	STEEL PLATE BEAM GUARDRAIL
631026-04	TRAFFIC BARRIER TERMINAL, TYPE 5
664001-01	CHAIN LINK FENCE
667101	PERMANENT SURVEY MARKERS
701901	TRAFFIC CONTROL DEVICES
780001-01	TYPICAL PAVEMENT MARKINGS
720001	

REGULATORY SPEED LIMITS	TRAFFIC DATA (ADT)
30 MPH	2000 6100 2030 8000

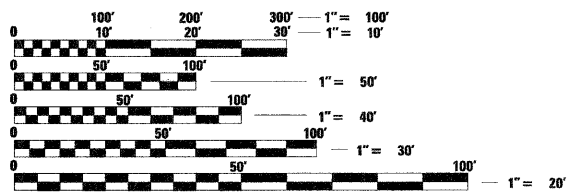
DESIGN DESIGNATION

MINOR ARTERIAL

DESCRIPTION OF BRIDGE REHABILITATION:

OLD ELM ROAD BRIDGE-STRUCTURE NO. 049-6870

REPLACEMENT OF AN EXISTING T-BEAM BRIDGE (049-6863) WITH ASSOCIATED SITE WORK. THE WORK INCLUDES REMOVAL OF THE EXISTING BRIDGE AND FOUNDATION, INSTALLATION OF NEW CONCRETE SHAFTS AND CAP, CONSTRUCTING NEW ABUTMENT AND WINGWALLS INSTALLING A NEW SEMI-INTEGRAL STEEL BEAM BRIDGE, INSTALLING AN AESTHETIC BRIDGE RAILING AND SIDEWALK TEXTURING, INSTALLING STONE RIP-RAP SLOPE PROTECTION, AND RECONSTRUCTING THE ROADWAY AND SIDEWALK APPROACHES TO THE BRIDGE. THE PROJECT ALSO INCLUDES STORM AND SANITARY SEWER WORK.



FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

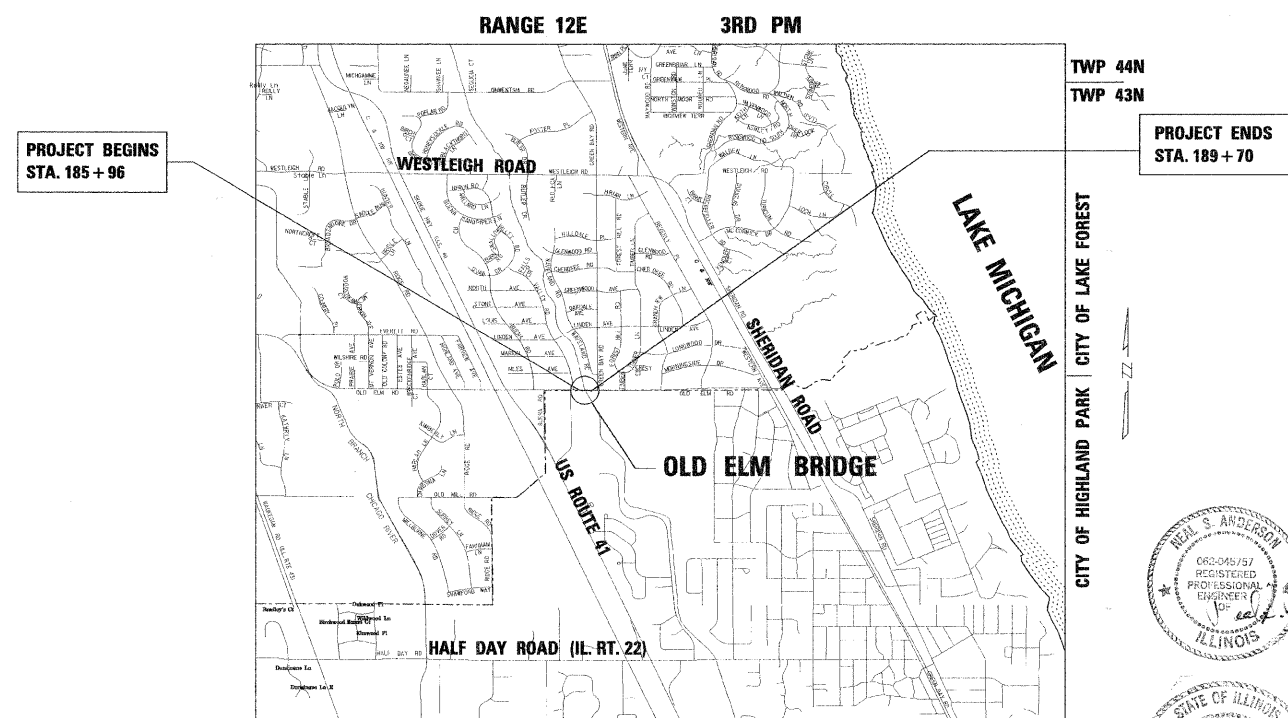
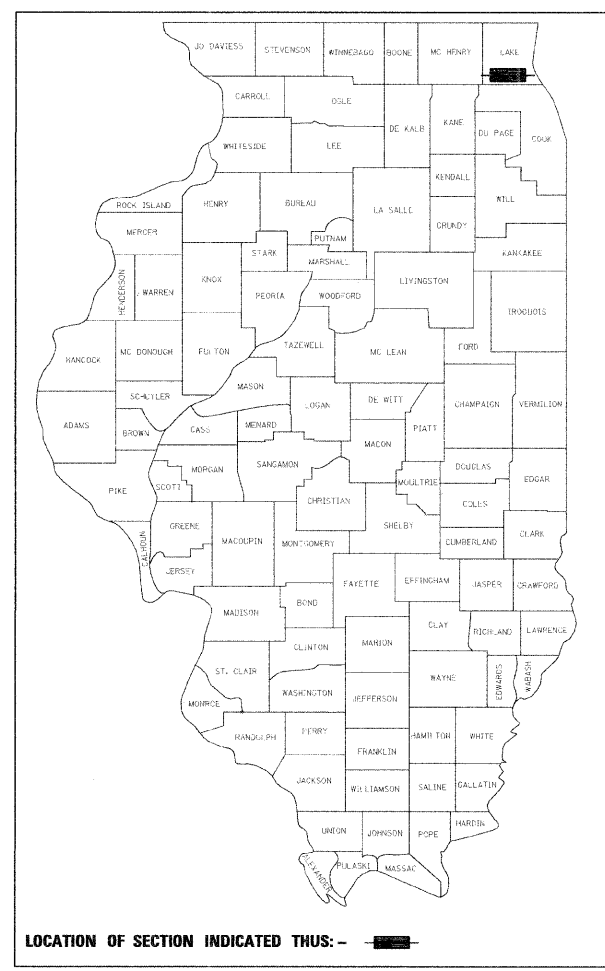
J.U.L.I.E.
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION
1-800-892-0123

CONTRACT NO. 63020

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS**

**PLANS FOR PROPOSED
FEDERAL AID URBAN PROJECT**

**F.A.U. ROUTE 1248
OLD ELM ROAD BRIDGE OVER THE SKOKIE RIVER
SECTION 99-00080-00-BR
PROJECT BRM-8003(103)
CITY OF LAKE FOREST
CITY OF HIGHLAND PARK
LAKE COUNTY
JOB NO. C-91-405-01**



LOCATION MAP

(NOT TO SCALE)
GROSS AND NET LENGTH OF PROJECT = 374 LIN. FT = .071 MILES

LEAD AGENCY



THE CITY OF LAKE FOREST
110 EAST LAUREL
LAKE FOREST, IL. 60045
847-234-2600



Wiss, Janney, Elstner Associates, Inc.
Engineers, Architects, Material Scientists
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WJE No. 2006.2324



NEAL S. ANDERSON, PE, SE
ILLINOIS LICENSED PROFESSIONAL ENGINEER
NO. 062-045757
EXPIRES 11/30/2008

ILLINOIS LICENSED STRUCTURAL ENGINEER
NO. 081-004947
EXPIRES 11/30/2009

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

APPROVED *[Signature]* 7-15 20 08
City of Lake Forest, City Surveyor and Engineer

Passed *[Signature]* FEBRUARY 20 20 08
District #1 Engineer of Local Roads & Streets

Releasing for Bid Based on Limited Review
FEBRUARY 20, 20 08
[Signature]
Deputy Director of Highways Region #1 Engineer

**PRINTED BY THE AUTHORITY
OF THE STATE OF ILLINOIS**

DATE: 01/27/08
FILENAME: F:\2006\2301-2400\2006.2324-NAnderson-Old Elm Design\MICROSTATION-FINAL\C-01.dgn
DOT Associate Field Engineer: Kevin Stallworth, P.E. (847)705-4169

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
124B	99-00080-00-BR	LAKE	46	2
STA. 185+96		TO STA. 189+70		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

63020

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NUMBER DESCRIPTION

- 1 TITLE SHEET
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- 6 DETOUR PLAN AND SIGNAGE
- 7 BENCH MARK AND ALIGNMENT TIES
- 8 PROPOSED PLAN & PROFILE STA. 185+96 TO STA. 189+70
- 9 EXISTING AND PROPOSED TYPICAL SECTIONS
- 10 EXISTING AND PROPOSED DRAINAGE AND UTILITY PLAN
- 11 SIDEWALK PLAN
- 12 SIDEWALK AND PRIVATE ENTRANCE DETAILS
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- 26 BEAM ELEVATION
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- 28 ANCHOR BOLT DETAILS FOR BEARINGS
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- 30 EAST ABUTMENT STEM WALL PLAN
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- 45 EXISTING & PROPOSED CROSS SECTION STA. 185+00 TO STA. 188+50.00
- 46 EXISTING & PROPOSED CROSS SECTION STA. 189+00.00 TO STA. 190+00.00

DATE: 9/5/2008
FILENAME: P:\2006\2301-2400\2006.2324-NAnderson-Old Elm Design\MICROSTATION-FINAL\C-02.dgn

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WJE No. 2006.2324


THE CITY OF LAKE FOREST
CHARTERED 1861

ILLINOIS DEPARTMENT OF TRANSPORTATION
BUREAU OF LOCAL ROADS AND STREETS

PROJECT:
OLD ELM ROAD OVER EAST SKOKIE DITCH

TITLE:
INDEX OF SHEETS

SCALE: N.T.S. DRAWN BY: IMG
DATE: JANUARY 2008 CHECKED BY: NSA

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REV. NO.	DATE	REVISION RECORD	MADE BY	CHECKED BY

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1248	99-00080-00-BR	LAKE	46	3
STA. 185+96		TO STA. 189+70		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	

63020

General Notes

- City of Lake Forest Datum (LF Datum) - Lake Forest Elev. 0.00 ft = U.S.G.S. Elev. 580.16 ft for existing benchmarks.
- It shall be the Contractor's responsibility to verify all dimensions and conditions existing in the field prior to construction and ordering materials.
- Any reference to standards in the plans or special provisions shall be interpreted to be the latest Standard Specifications of the Department listed in the plans with the latest revision numbers.
- Before starting any excavation work, the Contractor shall call "JULIE" at 800-892-0123 for field locations of buried electric, telephone, cable and gas facilities (48 hours notification is required).
- The City of Lake Forest Department of Public Works shall be notified at least 48 hours prior to commencing construction.
- The Contractor shall obtain a construction permit from the Illinois Department of Natural Resources (IDNR), Office of Water Resources for any temporary construction activity placed in the water except cofferdams. This shall include the placement of material for run-arounds, causeways, etc. Any permit application by the Contractor shall refer to the IDNR permit number which was issued for the permanent construction.
- All utilities, school districts, local police and fire departments should be notified by the Contractor prior to the start of the construction.
- The Contractor will be allowed to set up a yard and/or field office at the west end of the project limits on the closed portion of Old Elm Road. The Engineer's field office will be paid for under the contract unit price per calendar month for ENGINEER'S FIELD OFFICE TYPE A.
- The Contractor shall provide traffic control in conformance with the "Manual on Uniform Traffic Control Devices for Streets and Highways," State of Illinois, and Section 107.14 of the Standard Specifications. Barricades and other required traffic control will be paid under the lump sum price for TRAFFIC CONTROL AND PROTECTION.
- No work shall commence until the detour route is established and traffic control requirements are met.
- The Contractor shall limit his construction activities to the work areas designated in the job plans. The Contractor at his own expense shall repair any damage to areas outside of these limits to the satisfaction of the Engineer.
- Special care shall be taken in excavating the grading near utilities and trees to be saved in order to avoid unnecessary damage.
- Silt fence shall be installed at low points adjacent to the river, downslope from areas susceptible to erosion during construction.
- Layout of slope protection system may be varied in the field to suit ground conditions as directed by the Engineer.
- It is the Contractor's responsibility to insure pipe outlets from all catch basins are free from blockages and debris. The storm sewer drainage flow on the east abutment pipe shall be maintained during the project duration.
- During construction operations, loose material deposits that obstruct the flow of water in the river channel shall be removed before the end of each workday. At the conclusion of construction operations, all drainage structures shall be free from all dirt and debris. This work will not be paid for separately but shall be included in the contract.
- All trees with diameters larger than six-inches (6") shall have their trunks protected from construction activity.
- The Contractor shall protect all identified trees during construction. At the Contractor's expense, all broken tree limbs over one-inch (1") in diameter shall be made flush with the next large branch. All limbs, branches, scrub brush and other debris shall be disposed of by the Contractor outside the limits of the project.
- All existing grass areas disturbed by the Contractor shall be reseeded and protected from erosion with erosion control blankets.
- During the construction, the contractor will be required, at his expense, to have available a water truck or similar equipment to control dust. If necessary, the Contractor shall be required to control dust during non-working hours.
- The Contractor shall make all reasonable and necessary attempts to open Old Elm prior to the required completion date. Several work activities can be and are expected to be finished under traffic (notified of reduced speed) using daily shoulder closures or occasional flagmen. Representative work activities include but are not limited to topsoil placement, seeding, finish grading outside the railing walls and miscellaneous site work. Daily traffic control, if used, shall be incidental to the TRAFFIC CONTROL pay item.

Utility Coordination

- Utilities in the vicinity of the project are shown on Sheets 8 and 12 of this plan set. The Contractor shall be responsible for coordinating his construction activities with the appropriate utility company.
- The location and elevation of existing utilities are approximate and are provided by the owners. The exact locations and elevations are to be verified by the Contractor through the owner of the utility.
- The Contractor shall maintain pipe flow throughout the course of removal and replacement of sanitary sewer.
- Existing sanitary shall be removed and replaced using auger pits. No open excavation shall be performed in the channel for the sanitary sewer work.

Demolition Notes

- The Contractor shall exercise extreme care with demolition activities on the existing foundation. Vibrations from demolition of concrete in direct contact with the ground may be too excessive for the buried North Shore Sanitary District line and shall be avoided. Damage to the 42 in. diameter concrete pipe due to demolition or demolition vibrations shall be the Contractor's sole responsibility. Costs for pipe repair and effluent clean-up shall be borne by the Contractor, at his expense.
- The Contractor may elect to sawcut or otherwise partition the existing concrete footings, abutments and wingwalls for removal from the excavation area. Concrete break-up and disposal would be performed away from the existing utilities to avoid damage. The work activity will not be paid for separately but shall be considered incidental to the concrete removal cost.
- The extent of the demolition work is as shown on, and reasonably inferable from, the drawings.
- Provide for off-site disposal of all demolished materials.

Concrete General Notes

- Reinforcing bars shall conform to the requirements of ASTM A706 Gr. 60. See special provisions.
- Reinforcing bars designed (E) shall be epoxy-coated. Damage to the epoxy coating during handling, placement, etc. shall be repaired with a compatible epoxy.
- All accessories including bolsters, chairs, tie wire, etc. used to tie or support the epoxy-coated bars shall be epoxy-coated.
- Structural Concrete: Concrete shall be IDOT Class SI having a minimum compressive strength (fc) of 4,000 psi at 28 days. The concrete mix shall have an air content between 5 and 8 percent of the volume of the concrete. The Contractor shall submit concrete mix designs to the Engineer for approval.
- The concrete for bridge decks finished according to Article 503.16(a) of the Standard Specifications shall be placed and compacted parallel to the skew in uniform increments along centerline of bridge. The machine used for finishing shall be set parallel to the skew for striking off and screeding.
- All construction joints shall be bonded.
- The Contractor shall make allowance for the lateral deflection of forms, shrinkage and settlement of falsework or braces, in addition to allowance for deadlock deflection. Forms for deck slabs shall be removed prior to placement of bridge approach pavement.
- Design and construction of formwork shall be the responsibility of the Contractor and shall be performed with accordance with ACI 347 and the Standard Specifications.
- The Contractor shall use cantilever forming brackets on the exterior beams or girders, and brackets shall be placed at the same locations as required for the hardwood blocks in Article 503.06 of the Standard Specifications. If additional cantilever forming brackets are required, hardwood blocking shall be wedged between the exterior and first interior beam at each of these additional bracket locations.
- The Contractor shall use a form-lined textured surface when casting the walls for this project. The selected textured surface, approved by the Engineer, shall match as close as possible to a random ashlar limestone masonry pattern.
- The form-lined textured surface shall be carried a minimum of 2 ft. below the proposed finished grade elevation or as indicated on the drawings. At vertical wingwall and abutment surfaces facing the river, the form lined textured surface shall be as shown on the drawings.
- The back face of the wingwalls and retaining walls shall be waterproofed according to 503.18 of the Standard Specifications.

Steel Notes

- All structural steel members shall be AASHTO M270 Grade 50, unless noted otherwise.
- Stainless steel shall conform to ASTM A276 Type 316.
- Load carrying member components designated "NTR" shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.
- The structural steel bearing plates of the Elastomeric Bearing Assembly shall conform to the requirements of AASHTO M 270 Grade 50.
- All fasteners shall be high strength bolts AASHTO M164 Type 3, ASTM A325, unless noted otherwise. All nuts shall be type DH and coated with a visible lubricant.
- Calculated weight of structural steel = 27,500 lbs.
- All welding shall be performed by certified welders and shall comply with the latest edition of the bridge Welding Code ANSI/AASHTO/AWS D1.5.
- Welding electrodes shall be E70XX.
- Field welding of construction accessories will not be permitted to beams or girders, except as specified in the Contract Documents.
- All cross frames and diaphragms shall be installed as steel is erected and secured with erection pins and bolts except as otherwise noted. Individual cross frames or diaphragms at supports may be temporarily disconnected to install bearing anchor rods.

Hot Dip Galvanizing

- All structural steel members, bearing plates, side retainers, bolts, nuts, and washers shall be galvanized according to AASHTO M111 or M232 (as applicable).
- Safeguard products against steel embrittlement in conformance with ASTM 143.
- Handle all articles to be galvanized in such a manner as to avoid any mechanical damage and to avoid distortion.
- Repair of damaged coating:
 - The maximum area to be repaired is defined in accordance with ASTM 123 Section 4.6 current edition.
 - Repair areas damaged by welding, flame cutting or during handling, transport or erection by one of the approved methods in accordance with ASTM A780 whenever damage exceeds 3/16" in width. Minimum thickness requirements for the repair are those described in ASTM A123 Section 4.6 current edition.
 - Cost incurred for touch-up cold galvanizing all new steel shall be incidental to the steel cost.

Moisture Protection

- Construction joints designated on the drawings will be filled with a 2-component sealant supported by closed cell form backer rod. The joint sealant is specified as follows:
 - Silicone Sealant - Use for buried joints or where long term water exposure is anticipated.
 - Polyurethane Sealant - Architectural joint sealant for exposed-to-view surfaces. Color shall match the substrate.
 - Refer to Special Provisions for any additional information on joint sealant.
 - Joint sealant to be used in horizontal, nearly level applications shall be self-leveling (SL) formulation. Joints to receive the self-leveling sealant shall be identified by the Engineer in the field.
 - Joint sealant shall be applied as specified in the construction plans and as determined by the Engineer.
 - Designated concrete surface shall be coated with a silane surface sealer. The sealer shall be isobutyl trimethoxy silane in a 40% solids solution of anhydrous isopropyl alcohol. Surfaces to receive silane include the bridge deck, concrete sidewalk, bridge approach pavement, gutter sections and other Engineer designated surfaces.
 - The silane surface sealer shall be considered an alternate to the Department's protective coat requirements for concrete cast in the fall.

Sedimentation and Erosion Control Notes

- Soil disturbances shall be conducted in such a manner as to minimize erosion. Soil stabilization measures shall consider the time of year, site conditions and the use of temporary or permanent measures.
- Soil erosion and sediment control features shall be constructed prior to the commencement of hydrologic disturbance of upland areas.
- Disturbed areas shall be stabilized with temporary or permanent measures within 14 calendar days of the end of active hydrologic disturbance or redistribution.
- All temporary erosion and sediment control measures shall be removed within 30 days after final site stabilization is achieved or after the temporary measures are no longer needed.
- All temporary and permanent erosion control measures must be maintained and repaired as needed.
- Soil stockpiles shall not be located in a flood prone area or a designated Buffer Protecting Waters of the United States or isolated waters of Lake County.
- The erosion control measures indicated on the plans are the minimum requirements. Additional measures may be required, as directed by the Engineer or Governing Agency.

Expansion Joint Seal

- Perform all shop welding in accordance with the Bridge Welding Code ANSI/AASHTO/AWS D1.5. Do not weld to surfaces in contact with the elastomeric seal or the top surface (riding surface) except as shown in the shop splice detail. Do not weld inside seal cavity.
- Fabricate edge rail assemblies in one piece including upturns, except where the length or configuration prohibits shipping or proper installation or where phase construction requires separate assemblies. Shop splice sections of edge rail to obtain the required length by partial penetration double v-groove welds on prepared beveled edges and seal welds. Weld all around the joint as far as practical to achieve a watertight seal. Do not use short pieces of edge rail less than 6 ft - 0 in. long unless required at curbs, sidewalks or phase construction locations.
- Hot-dip galvanize (HDG) edge rail assemblies after shop fabrication in accordance with the Special Provisions and the manufacturer's recommendations.
- Furnish temporary or sacrificial support brackets, bolts, clamps, etc. that are capable of resisting shipping, handling and construction forces without damage to the edge rail assemblies or galvanized coating and are adjustable to account for variable temperature settings. Do not use temporary or sacrificial support brackets, bolts, clamps, etc. between the faces of the edge rails.
- Clearly match mark corresponding edge rail assemblies with joint location and direction of stationing.

- Submit shop drawings showing all joint materials and project specific details and dimensions. Include name of manufacturer, seal model number, and seal movement range.
- After galvanizing has been completed, do not weld within 2 in. of edge rail surfaces that will be exposed in the completed structure. Do not weld expansion joint components to or electrically ground to reinforcing steel or structural steel. Seal field butt joints and empty shipping and erection holes with caulk before placing deck concrete.
- Protect galvanized edge rail assemblies during screeding operations per the manufacturer's recommendations. Provide temporary blocking material in the edge rail seal cavities to prevent concrete intrusion during approach slab placement and finishing.
- Loosen any temporary or sacrificial support brackets, bolts, clamps, etc. that span across the joint after initial set of concrete, but not later than two hours after conclusion of concrete placement.
- Install elastomeric seal after completion of approach slab casting. Remove all joint form material and blocking material prior to installing elastomeric seal. Field install elastomeric seal in accordance with manufacturer's recommendations. Thoroughly coat all contact surfaces between the elastomeric seal and the edge rail seal cavities with an adhesive lubricant before setting elastomeric seal in place.

Reference Standards

- Illinois Department of Transportation (IDOT)
 - Standard Specifications for Road and Bridge Construction (Adopted January 1, 2007)
 - Supplemental Specifications and Recurring Special Provisions (Adopted January 1, 2008)
 - Highway Standards
- American Association of State Highway and Transportation Officials (AASHTO)
 - Standard Specifications for Highway Bridges (LRFD)
 - Standard Specifications for Transportation Materials and Methods of Sampling and Testing
 - Bridge Welding Code (ANSI/AASHTO/AWS D1.5)
 - M111 Standard Specifications for Zinc (Hot Dip Galvanized) Coating on Iron and Steel Products
 - M232 Standard Specification for Zinc Coating (Hot Dip) on Iron and Steel Hardware
- American Society for Testing and Materials (ASTM)
 - A123 Standard Specifications for Zinc (Hot Dip Galvanized) Coating on Iron and Steel Products.
 - A143 Standard Practice for Safeguarding Against Embrittlement of Hot Dip Galvanized Structural Steel Products and Procedure for Detecting Embrittlement
 - A153 Standard Specification for Zinc Coating (Hot Dip) on Iron and Steel Hardware
 - A384 Standard Recommended Practice for Safeguarding Against Warpage and Distortion During Hot Dip Galvanizing of Steel Assemblies
 - A385 Standard practice for Providing High Quality Zinc Coatings (Hot Dip)
 - A780 Standard Practice for Repair of Damaged Hot Dip Galvanized Coatings
- City of Lake Forest
 - Engineering and Construction Standards

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 WJE No. 2008.2324

THE CITY OF LAKE FOREST
 CHARTERED 1861

ILLINOIS DEPARTMENT OF TRANSPORTATION
 BUREAU OF LOCAL ROADS AND STREETS

PROJECT:
 OLD ELM ROAD OVER EAST SKOKIE DITCH

TITLE:
 GENERAL NOTES

SCALE: N.T.S. DRAWN BY: IMG
 DATE: JANUARY 2008 CHECKED BY: NSA

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REL. NO.	DATE	REVISION RECORD	MADE BY	CHECKED BY	

DATE: 2/2/2008
 FILENAME: p:\2008\2301-2400\2006.2324-manderson-old elm design\microstation-final\c-03.dgn

SUMMARY OF QUANTITIES

CODE NUMBER	PAY ITEM	UNIT	1000-2A X071-2A		TOTAL
			ROADWAY	BRIDGE	
20100110	TREE REMOVAL (6 TO 15 UNITS DIAMETER)	Unit	110	--	110
20101100	TREE TRUNK PROTECTION	Each	20	--	20
20201200	REMOVAL AND DISPOSAL OF UNSUITABLE MATERIAL	Cu. Yd.	--	1180	1180
20300100	CHANNEL EXCAVATION	Cu.Yd.	180	--	180
20700400	POROUS GRANULAR EMBANKMENT (SPECIAL)	Cu. Yd.	--	110	110
21001000	GEOTECHNICAL FABRIC FOR GROUND STABILIZATION	Sq. Yd.	250	--	250
21101615	TOPSOIL FURNISH AND PLACE, 4"	Sq. Yd.	750	--	750
25000210	SEEDING, CLASS 2A	Acre	0.2	--	0.2
25100630	EROSION CONTROL BLANKET	Sq. Yd.	1000	--	1000
25200200	SUPPLEMENTAL WATERING	Unit	10	--	10
28000900	FENCE (EROSION CONTROL)	Foot	150	--	150
28100107	STONE RIPRAP, CLASS A4	Sq. Yd.	--	425	425
28200200	FILTER FABRIC	Sq. Yd.	--	425	425
31200100	STABILIZED SUB-BASE 4"	Sq. Yd.	405	--	405
40600100	BITUMINOUS MATERIALS (PRIME COAT)	Gal	220	--	220
40603335	HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N50	Ton	100	--	100
42001400	BRIDGE APPROACH PAVEMENT (SPECIAL)	Sq. Yd.	245	--	245
42100100	CONT. REINF. PORTLAND CEMENT CONC. PAVEMENT 8"	Sq. Yd.	135	--	135
42100700	PAVEMENT REINFORCEMENT 8"	Sq. Yd.	135	--	135
42300400	PORTLAND CEMENT CONCRETE DRIVEWAY PAVEMENT, 8"	Sq. Yd.	40	--	40
42400430	PORTLAND CEMENT CONCRETE SIDEWALK, 5" (SPECIAL)	Sq. Ft.	520	--	520
44000100	PAVEMENT REMOVAL	Sq. Yd.	330	--	330
44000161	HOT MIX ASPHALT REMOVAL 3"	Sq. Yd.	725	--	725
44000200	DRIVEWAY PAVEMENT REMOVAL	Sq. Yd.	40	--	40
44000500	COMBINATION CURB AND GUTTER REMOVAL	Foot	680	--	680
44000600	SIDEWALK REMOVAL	Sq. Ft.	660	--	660
50100100	REMOVAL OF EXISTING STRUCTURES	Each	--	1	1
50200100	STRUCTURE EXCAVATION	Cu.Yd.	--	125	125
50300100	FLOOR DRAINS	Each	--	4	4
50300225	CONCRETE STRUCTURES	Cu. Yd.	--	205	205
50300255	CONCRETE SUPERSTRUCTURES	Cu. Yd.	--	90	90
50401205	PRECAST CONCRETE CAPS	Foot	--	82	82
XX007358	FURNISHING AND ERECTING STRUCTURAL STEEL (GALVANIZED)	L Sum	--	1	1
50500505	STUD SHEAR CONNECTORS	Each	--	880	880
50800105	REINFORCEMENT BARS	Pound	--	24785	24785
50800205	REINFORCEMENT BARS, EPOXY COATED	Pound	--	63640	63640
51500100	NAME PLATES	Each	--	1	1
51603000	DRILLED SHAFT IN SOIL	Cu. Yd.	--	130	130
52100010	ELASTOMERIC BEARING ASSEMBLY TYPE 1	Each	--	16	16
52100520	ANCHOR BOLTS, 1"	Each	--	32	32
54200457	PIPE CULVERTS, TYPE 1 RCCP 42"	Foot	15	--	15
5421A036	PIPE CULVERTS, CLASS A, TYPE 1 36" (TEMPORARY)"	Foot	159	--	159
54213891	STEEL END SECTIONS 36"	Each	6	--	6
55101800	STORM SEWER REMOVAL 42"	Foot	15	--	15
59100100	GEOCOMPOSITE WALL DRAIN	Sq. Yd.	--	175	175
60109582	PIPE UNDERDRAINS FOR STRUCTURES 6"	Foot	--	140	140
60236800	INLETS, TYPE A, TYPE 11 FRAME AND GRATE	Each	2	--	2
60255600	MANHOLES TO BE ADJUSTED (SPECIAL)	Each	2	--	2
60260200	INLETS TO BE ADJUSTED (SPECIAL)	Each	2	--	2
60603800	COMBINATION CONCRETE CURB AND GUTTER (TYPE B-6.12)	Foot	460	--	460
60606200	COMBINATION CONCRETE CURB AND GUTTER (TYPE B-9.12)	Foot	100	--	100
* 63000000	STEEL PLATE BEAM GUARD RAIL, TYPE A	Foot	160	--	160
* 63100070	TRAFFIC BARRIER TERMINAL, TYPE 5	Each	4	--	4
63200310	GUARDRAIL REMOVAL	Foot	160	--	160
66411900	TEMPORARY FENCE	Foot	200	--	200
66700105	PERMANENT SURVEY MARKERS (SPECIAL)	Each	1	--	1
67000400	ENGINEER'S FIELD OFFICE - TYPE A	Col. Mo.	5	--	5
67100100	MOBILIZATION	L Sum	1	--	1
70102550	TRAFFIC CONTROL AND PROTECTION FOR TEMPORARY DETOUR	Each	1	--	1
* 78000200	THERMOPLASTIC PAVEMENT MARKING - LINE 4"	Foot	375	--	375
* 78006110	PREFORMED THERMOPLASTIC PAVEMENT MARKING - LINE 4"	Foot	375	--	375
* 78100105	RAISED REFLECTIVE PAVEMENT MARKER (BRIDGE)	Each	4	--	4
XX007300	PORTLAND CEMENT CONCRETE PAD (SPECIAL)	Sq. Yd.	55	--	55
Δ Z0076600	TRAINEES	Hour	500	--	500

SUMMARY OF QUANTITIES

CODE NUMBER	PAY ITEM	UNIT	1000-2A X071-2A		TOTAL
			ROADWAY	BRIDGE	
XX000503	SPLIT RAIL FENCE (SPECIAL)	Foot	110	--	110
XX001429	FORM LINER TEXTURED SURFACE (SPECIAL)	Sq. Yd.	--	290	290
XX007289	JOINT SEALANT (SPECIAL)	Foot	600	--	600
XX007290	SILANE SURFACE SEALER (SPECIAL)	Sq. Yd.	465	--	465
* XX004699	SANITARY SEWER REMOVAL AND REPLACEMENT, 12" (SPECIAL)	Foot	80	--	80
XX005128	STRIP SEAL EXPANSION JOINT ASSEMBLY	Foot	75	--	75
XX007359	STAINING CONCRETE STRUCTURES (SPECIAL)	Sq. Yd.	--	290	290
XX007287	STAINLESS STEEL RUB PLATE ASSEMBLY (SPECIAL)	Each	--	4	4
XX007288	LIGHT WEIGHT AGGREGATE GRANULAR BACKFILL (SPECIAL)	Cu. Yd.	--	880	880

* SPECIALTY ITEMS
Δ Y080

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1248	99-00080-00-BR	LAKE	46	4
STA. 185+96		TO STA. 189+70		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	

63020

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THE CITY OF LAKE FOREST
CHARTERED 1861

ILLINOIS DEPARTMENT OF TRANSPORTATION
BUREAU OF LOCAL ROADS AND STREETS

PROJECT:
OLD ELM ROAD OVER EAST SKOKIE DITCH

TITLE:
SUMMARY OF QUANTITIES

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REV. NO.	DATE	REVISION RECORD	MADE BY	CHECKED BY	SCALE: N.T.S	DRAWN BY: IMG	
					DATE: JANUARY 2008	CHECKED BY: NSA	

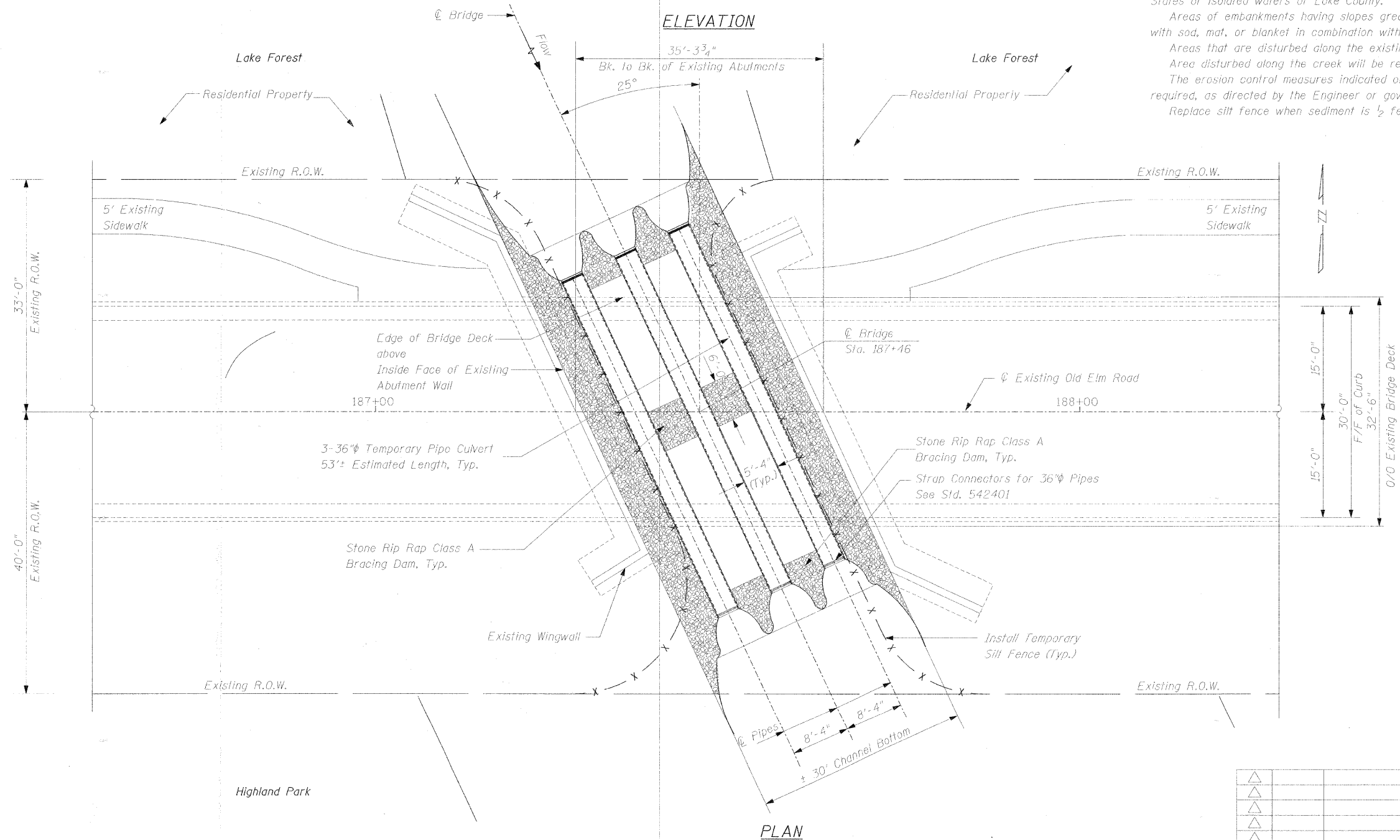
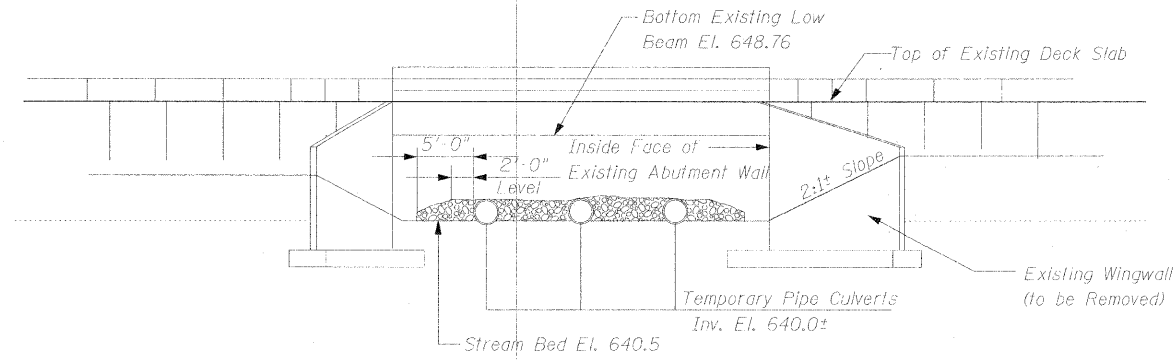
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F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1248	99-00080-00-BR	LAKE	46	5
STA. 185+96		TO STA. 189+70		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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Notes

- Field variation of pipe location permitted based on existing conditions, upon approval by the Engineer.
- Contractor to leave Temporary Stream Diversion Method in-place until Bridge Deck and Final Rip Rap below Bridge is installed.
- Soil disturbance shall be conducted in such a manner as to minimize erosion. Soil stabilization measures shall consider the time of year, site conditions and the use of temporary or permanent measures.
- Soil erosion and sediment control features shall be constructed prior to the commencement of hydrologic disturbance of upland areas.
- Disturbed areas shall be stabilized with temporary or permanent measures within 14 calendar days of the end of active hydrologic disturbance, or redistribution.
- All temporary erosion and sediment control measures shall be removed within 30 days after final site stabilization is achieved or after the temporary measures are no longer needed.
- All temporary erosion and sediment control measures must be maintained and repaired as needed.
- Soil stockpiles shall not be located in a flood prone area or designated buffer protecting waters of the United States or isolated waters of Lake County.
- Areas of embankments having slopes greater than 3H: 1W or as required by the enforcement officer shall be stabilized with sod, mat, or blanket in combination with seeding.
- Areas that are disturbed along the existing roadway will be reseeded with IDOT Class 2 or 2A seed mixture.
- Area disturbed along the creek will be restored with IDOT Class 4 seed mixture and rag SC150BN or approved equal.
- The erosion control measures indicated on the plans are the minimum requirements. Additional measures may be required, as directed by the Engineer or governing agency.
- Replace silt fence when sediment is 1/2 fence height, fabric decomposes or if fence is no longer set in place.



PLAN

ELEVATION

BILL OF MATERIAL

Item	Unit	Quantity
36" Pipe Culverts (Temporary)	Lin. Ft.	159
36" End Sections	Each	6
Stone Rip Rap, Class A4	Sq. Yds.	165
Fence (Erosion Control)	Lin. Ft.	150

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THE CITY OF LAKE FOREST
 CHARTERED 1861

ILLINOIS DEPARTMENT OF TRANSPORTATION
 BUREAU OF LOCAL ROADS AND STREETS

PROJECT: **OLD ELM ROAD OVER EAST SKOKIE DITCH**

TITLE: **TEMPORARY STREAM DIVERSION PLAN AND ELEVATION**

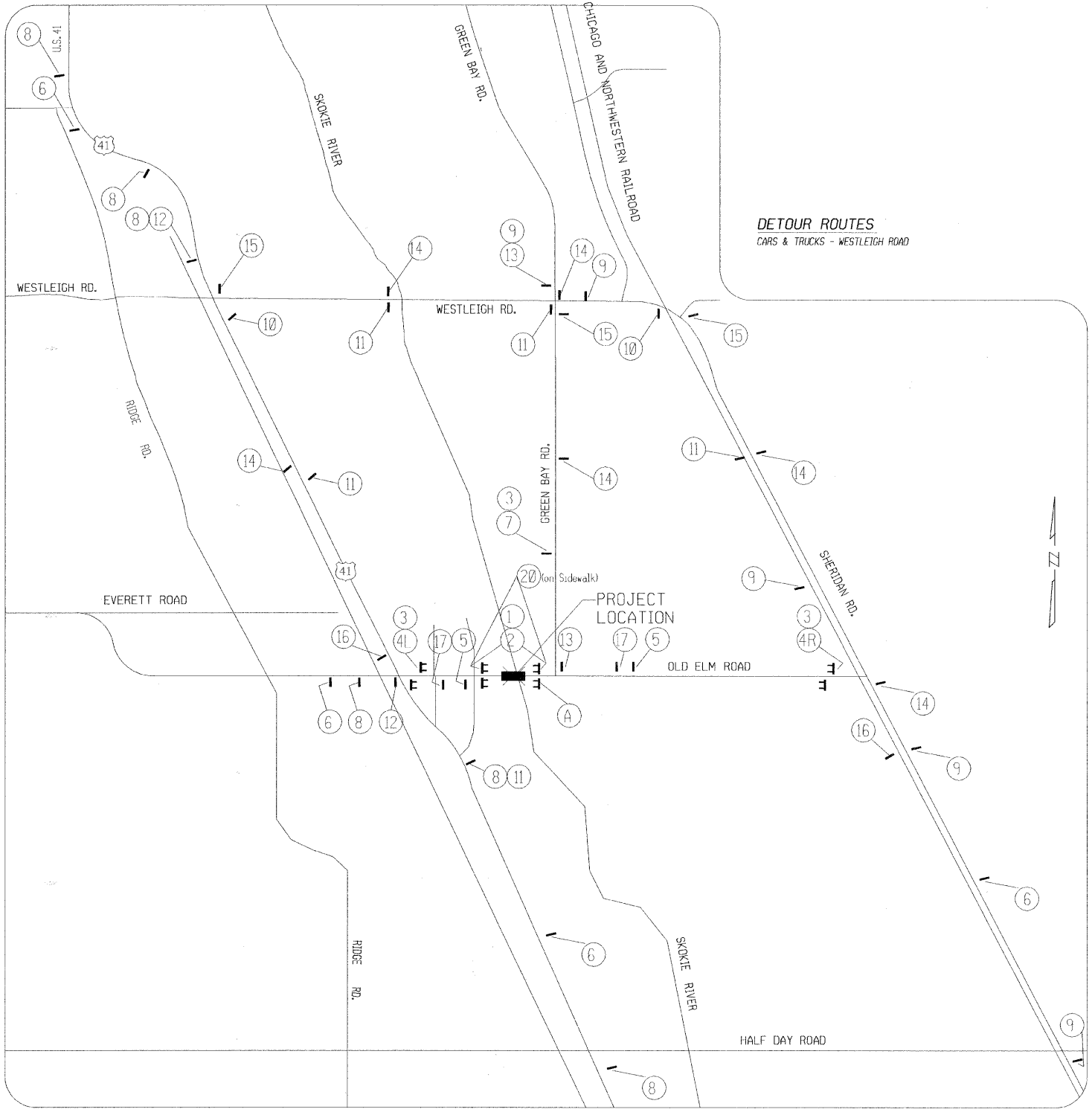
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SCALE: N.T.S. DRAWN BY: IMG
 DATE: JANUARY 2008 CHECKED BY: NSA

DATE: 2/1/2008 FILENAME: P:\2006\2301-2400\2006.2324-NAnderson-Old Elm Design\MICROSTATION-FINAL\C-06.dgn

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1248	99-00080-00-BR	LAKE	46	6
STA. 185+96		TO STA. 189+70		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	

63020



(A) MAINTAIN DRIVEWAY ACCESS IN THE PROJECT LIMITS FOR 2 RESIDENCES

LOCATION PLAN OF DETOUR
N.T.S.

DETOUR SIGNAGE LEGEND

①	ROAD CLOSED	R11-2, 48" x 30"	⑫	EAST OLD ELM ROAD DETOUR	M3-1, 24" x 12" (BLACK ON WHITE) W17-1100, VAR x 6" M4-9L, 30" x 24"
②	BRIDGE OUT	R11-2, 48" x 30"	⑬	WEST OLD ELM ROAD DETOUR	M3-1, 24" x 12" (BLACK ON WHITE) W17-1100, VAR x 6" M4-9R, 30" x 24"
③	ROAD CLOSED TO THRU TRAFFIC	R11-4, 60" x 30"	⑭	WEST OLD ELM ROAD DETOUR	M3-1, 24" x 12" (BLACK ON WHITE) W17-1100, VAR x 6" M4-9, 30" x 24"
④R	DETOUR	M4-10R-4818	⑮	WEST OLD ELM ROAD DETOUR	M3-1, 24" x 12" (BLACK ON WHITE) W17-1100, VAR x 6" M4-9L, 30" x 24"
④I	DETOUR	M4-10L-4818	⑯	END OLD ELM ROAD DETOUR	M4-6, 24" x 12" (BLACK ON WHITE) W17-1100, VAR x 6" M4-8, 24" x 12"
⑤	ROAD CLOSED AHEAD	W20-3, 48" x 48" WITH AMBER FLASHING LIGHT AND FLAG	⑰	OLD ELM ROAD BRIDGE CLOSED APRIL 1, 2006	R11-3, 60" x 36" (SIGN TO BE POSTED 21 DAYS PRIOR TO CLOSURE, VARY DATE AS REQUIRED, REMOVE WHEN ROAD IS CLOSED).
⑥	DETOUR AHEAD	W20-2 (0), 48" x 48" WITH AMBER FLASHING LIGHT	⑱	TRUCKS USE WESTLEIGH	(BLACK ON ORANGE) 30" x 30"
⑦	OLD ELM ROAD WEST CLOSED WEST TO U.S. 41		⑲	TRUCK	M4-4 24" x 12"
⑧	OLD ELM ROAD EAST CLOSED EAST OF U.S. 41		⑳	SIDEWALK CLOSED	R11-1101-2418
⑨	OLD ELM ROAD WEST CLOSED WEST OF SHERIDAN ROAD			TYPE III BARRICADES STAGGERED 60 TO 100 FEET (18.3m to 30.5m) APART WITH TWO AMBER FLASHING LIGHTS EACH AND ONE FLAG	
⑩	EAST OLD ELM ROAD DETOUR	M3-1, 24" x 12" (BLACK ON WHITE) W17-1100, VAR x 6" M4-9R, 30" x 24"		TYPE III BARRICADES WITH TWO AMBER FLASHING LIGHTS EACH AND ONE FLAG (AT ENDS OF CONSTRUCTION AREA)	
⑪	EAST OLD ELM ROAD DETOUR	M3-1, 24" x 12" (BLACK ON WHITE) W17-1100, VAR x 6" M4-9, 30" x 24"			

CURRENTLY NOT USED

GENERAL NOTES - DETOUR PLAN

- TYPE III BARRICADES SHALL BE POSITIONED AS SHOWN IN IDOT HIGHWAY STANDARD 702801.
- ALL WARNING SIGNS (W-) SHALL BE POST MOUNTED.
- LONGITUDINAL DIMENSIONS MAY BE ADJUSTED SLIGHTLY TO FIT FIELD CONDITIONS.
- ALL WARNING SIGNS SHALL HAVE MINIMUM DIMENSIONS OF 48 INCHES BY 48 INCHES AND HAVE BLACK LEGEND ON AN ORANGE HIGH INTENSITY REFLECTORIZED BACKGROUND.
- HIGH INTENSITY FLASHING LIGHTS SHALL BE USED ON EACH APPROACH IN ADVANCE OF THE WORK AREA DURING HOURS OF DARKNESS AND INSTALLED ABOVE THE FIRST TWO ADVANCE SIGNS.
- BARRICADES SHALL BE TO THE EDGE OF PAVEMENT, EXCEPT WHEN OTHERWISE DIRECTED BY THE ENGINEER OR SHOWN ON THE DETAILED CONSTRUCTION PLANS.
- ALL SIGNS SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).

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THE CITY OF LAKE FOREST
CHARTERED 1861

ILLINOIS DEPARTMENT OF TRANSPORTATION
BUREAU OF LOCAL ROADS AND STREETS

PROJECT:
OLD ELM ROAD OVER EAST SKOKIE DITCH

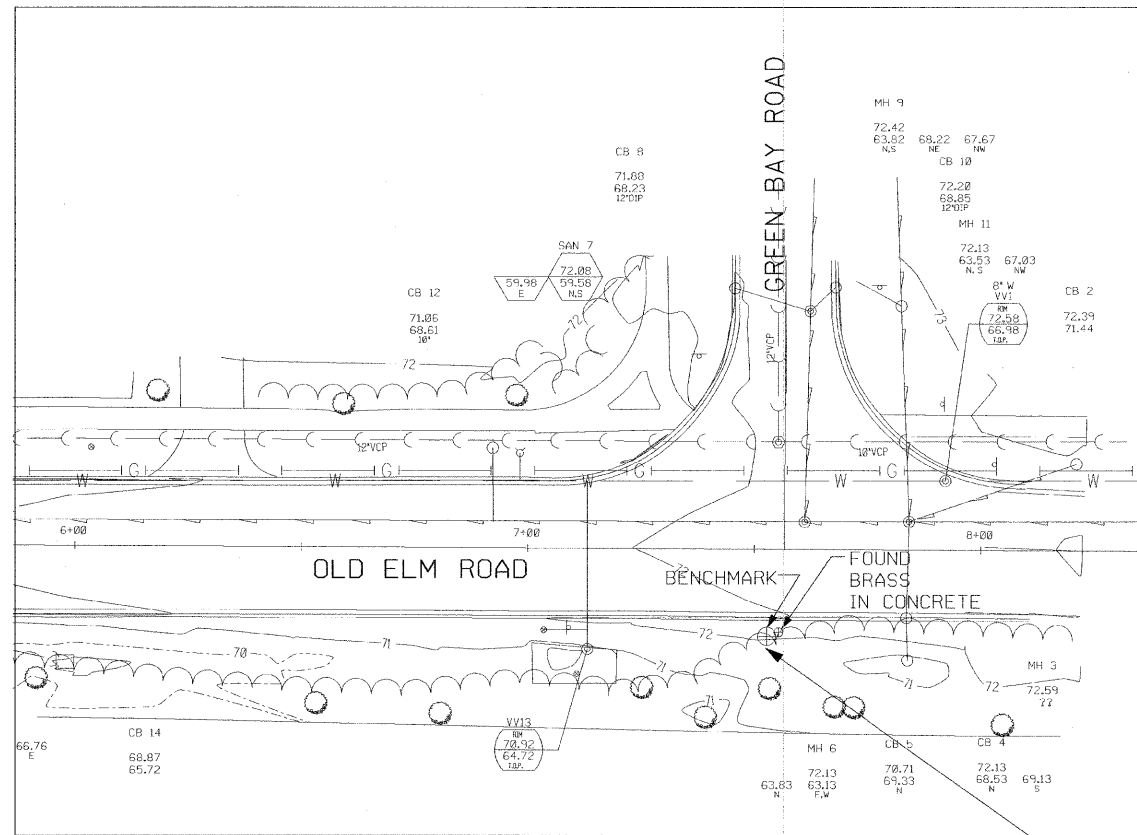
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DETOUR PLAN AND SIGNAGE

SCALE: N.T.S. DRAWN BY: IMG
DATE: JANUARY 2008 CHECKED BY: NSA

DATE: 2/2/2008
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F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1248	99-00080-00-BR	LAKE	46	7
STA. 185+96		TO STA. 189+70		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

63020



BENCHMARK:
 BRASS DISK IN CONCRETE SOUTH OF THE INTERSECTION OF
 OLD ELM RD. AND GREEN BAY RD. IN LINE WITH THE
 CENTER LINE OF GREEN BAY RD. EXTENDES SOUTH
 APPROXIMATE 3.5 FT. OF SOUTH BACK OF CURB.
 NOTE, A SMALLER DISK IS SET *.5 FT. NE OF BENCHMARK.
 ELEV. = 72.17, MSL = 652.33

"CONTROL STATION RECORD"
 OF

MONUMENT SITUATED IN SECTION 9 TOWNSHIP 43 NORTH, RANGE 12
 EAST OF THE 3RD PRINCIPAL MERIDIAN, CITY OF LAKE FOREST, LAKE COUNTY, ILLINOIS
 MONUMENT DESCRIPTION AND REMARKS
 STANDARD CITY OF LAKE FOREST CONTROL MONUMENT-BRASS DISK IN CONCRETE
 ELEVATION 72.169 FEET, REFERRED TO THE CITY OF LAKE FOREST DATUM PLANE
 ILLINOIS STATE PLANE COORDINATES-EAST ZONE: NAO27
 NORTHING (Y)=2022360.9188 EASTING(X)=634374.2731
 GRID AZIMUTH MARKS:
 MARK DESCRIPTION AZIMUTH FROM NORTH
 (1) MON NO. 16 89 34 17
 (2) MON NO. 24 0 06 10

DATE: 2/6/2008
 FILENAME: F:\2006\2801-2400\2006.2324-NAnderson-Old Elm Design\MICROSTATION-FINAL\C-07.dgn

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THE CITY OF LAKE FOREST
 CHARTERED 1861

ILLINOIS DEPARTMENT OF TRANSPORTATION
 BUREAU OF LOCAL ROADS AND STREETS

PROJECT:
OLD ELM ROAD OVER EAST SKOKIE DITCH

TITLE:
BENCHMARK AND ALIGNMENT TIES

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REV. NO.	DATE	REVISION RECORD	MADE BY	CHECKED BY	SCALE: N.T.S.
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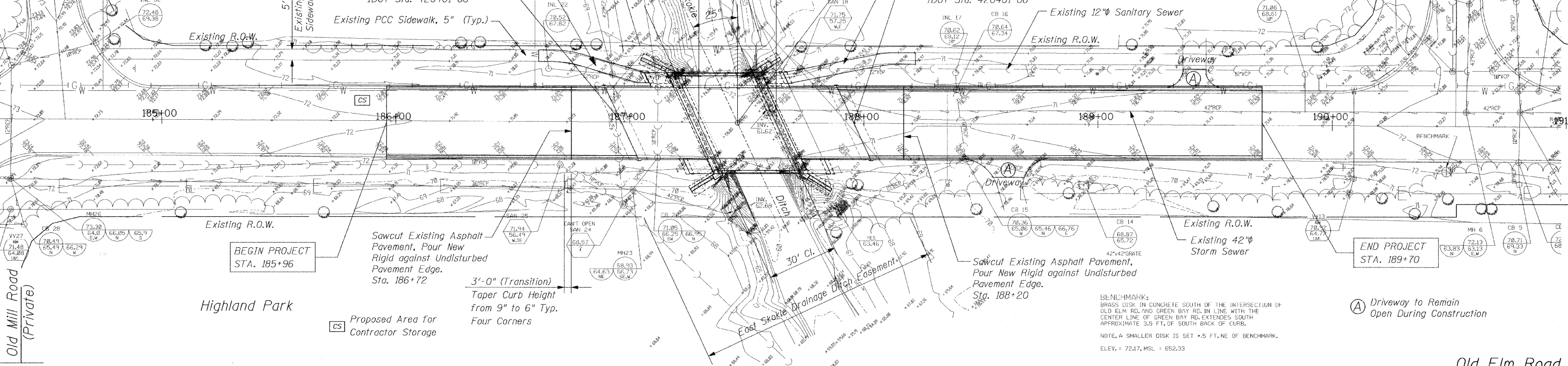
Benchmark # 17:
Standard City of Lake Forest Control
Monument-Brass Disk in Concrete.
Elevation 652.329 (USGS)

F-A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
124B	99-00080-00-BR	LAKE	42	8
STA. 185+96		TO STA. 189+70		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	

Valley Road

Lake Forest

63020
Green Bay Road

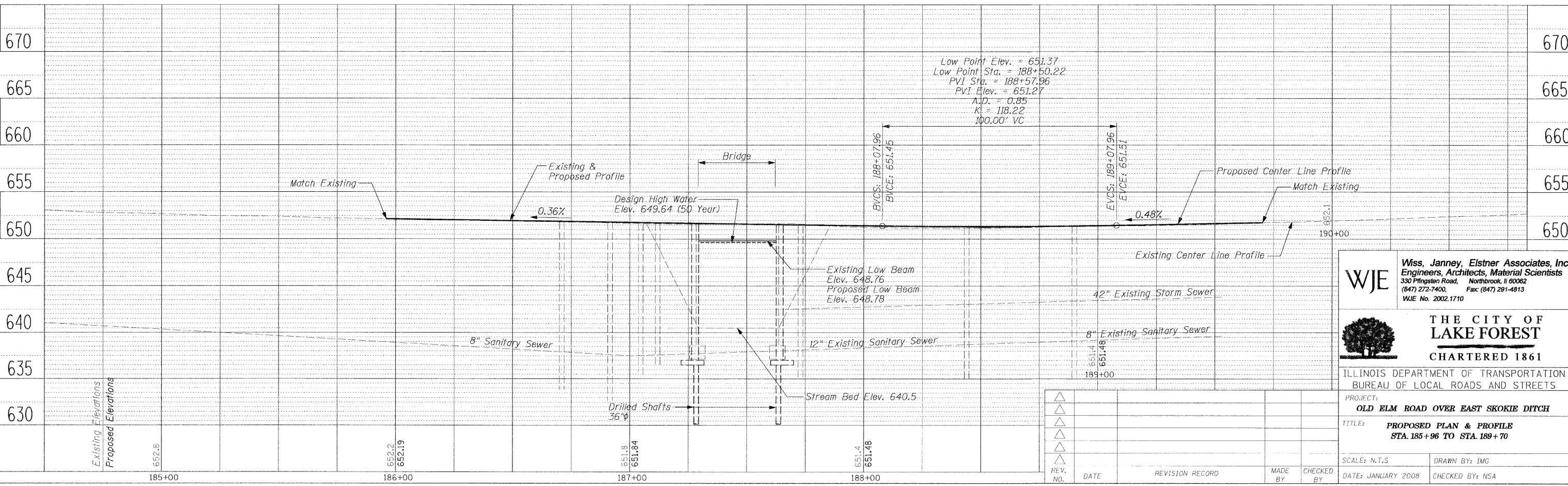


BEGIN PROJECT
STA. 185+96

END PROJECT
STA. 189+70

BENCHMARK:
BRASS DISK IN CONCRETE SOUTH OF THE INTERSECTION OF
OLD ELM RD. AND GREEN BAY RD. IN LINE WITH THE
CENTER LINE OF GREEN BAY RD. EXTENDS SOUTH
APPROXIMATE 3.5 FT. OF SOUTH BACK OF CURB.
NOTE, A SMALLER DISK IS SET .5 FT. NE OF BENCHMARK.
ELEV. = 72.17, MSL = 652.33

(A) Driveway to Remain
Open During Construction



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THE CITY OF LAKE FOREST
CHARTERED 1861

ILLINOIS DEPARTMENT OF TRANSPORTATION
BUREAU OF LOCAL ROADS AND STREETS

PROJECT:
OLD ELM ROAD OVER EAST SKOKIE DITCH

TITLE:
**PROPOSED PLAN & PROFILE
STA. 185+96 TO STA. 189+70**

SCALE: N.T.S. DRAWN BY: IMG
DATE: JANUARY 2008 CHECKED BY: NSA

REV. NO.	DATE	REVISION RECORD	MADE BY	CHECKED BY

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F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1248	99-00080-00-BR	LAKE	46	9
STA. 185+96		TO STA. 189+70		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

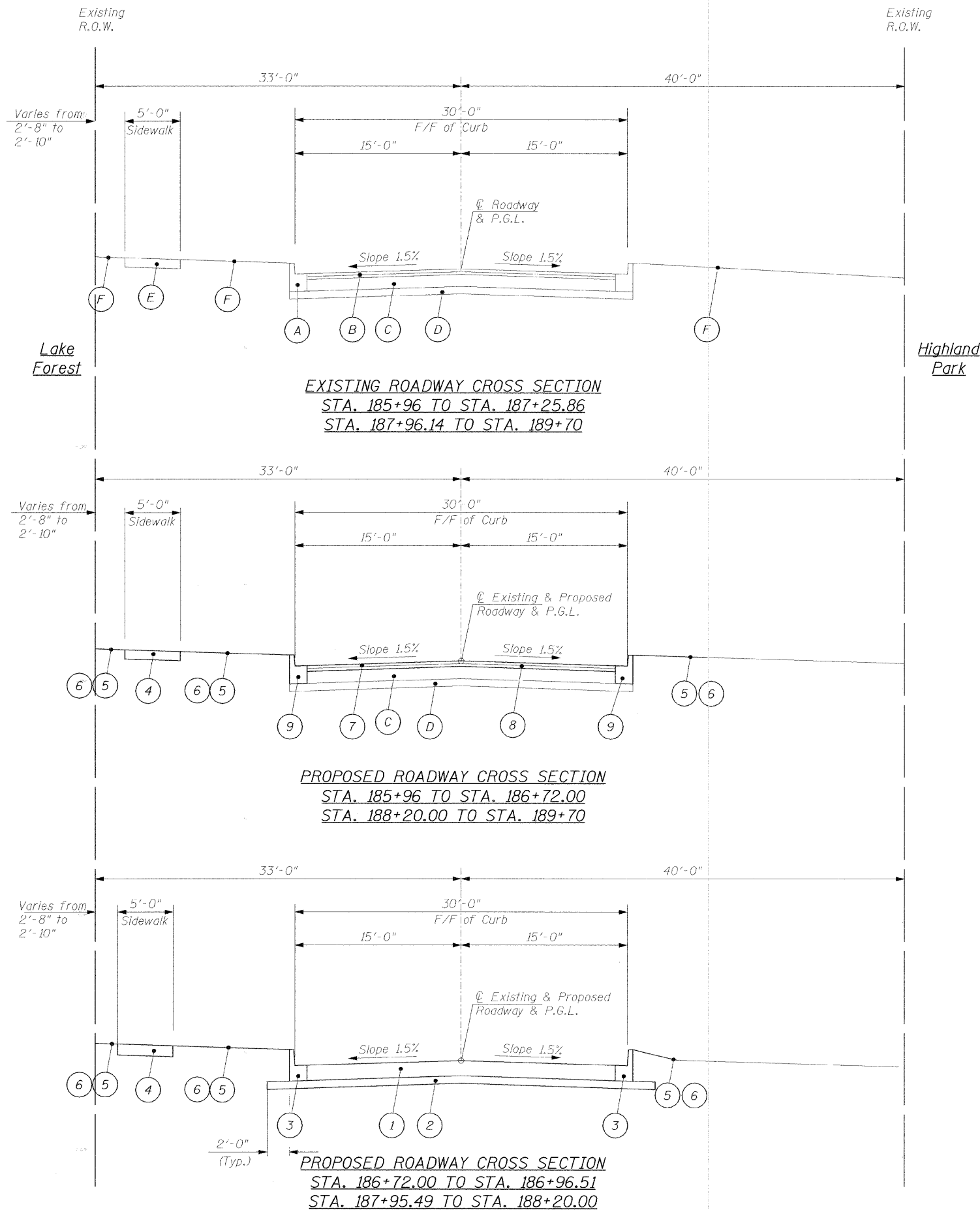
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EXISTING LEGEND

- (A) Combination Concrete Curb & Gutter, Type B-6.12 (Typ.)
- (B) 3"± Existing Bituminous Resurfacing
- (C) Bituminous Aggregate Mixture Base Course-(6½")
- (D) Sub-Base Granular Material-Type B (4")
- (E) Existing P.C.C. Sidewalk
- (F) Existing Ground Line

PROPOSED LEGEND

- (1) Continuously Reinforced Concrete Pavement, 8"
- (2) Stabilized Sub-Base, 4"
- (3) Combination Concrete Curb and Gutter, Type B-9.12
- (4) P.C.C. Sidewalk, 5" (for Limits of Sidewalk Removal and Replacement See Sheet No. 11)
- (5) Topsoil Excavation and Placement, 4"
- (6) Seeding, Class 2A
- (7) Removal (Milling) of Existing Surface, 3"
- (8) Proposed Hot-Mix Asphalt Surface Course, Mix "D", N50
- (9) Combination Concrete Curb and Gutter, Type B-6.12



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THE CITY OF LAKE FOREST
 CHARTERED 1861

ILLINOIS DEPARTMENT OF TRANSPORTATION BUREAU OF LOCAL ROADS AND STREETS	
PROJECT:	OLD ELM ROAD OVER EAST SKOKIE DITCH
TITLE:	EXISTING & PROPOSED TYPICAL SECTIONS STA. 185 + 96.00 TO STA. 189 + 70.00
SCALE: N.T.S.	DRAWN BY: JMG
DATE: JANUARY 2008	CHECKED BY: NSA

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DATE: 2/5/2008
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F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1248	99-00080-00-BR	LAKE	46	10
STA. 185+96		TO STA. 189+70		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	

63020

Benchmark # 17:
Standard City of Lake Forest Control
Monument-Brass Disk in Concrete.
Elevation 652.329 (USGS)

City of Lake Forest Datum (LF Datum)-Lake Forest
Elevation 72.169 Ft. = 580.16 Ft. for Existing Benchmarks.

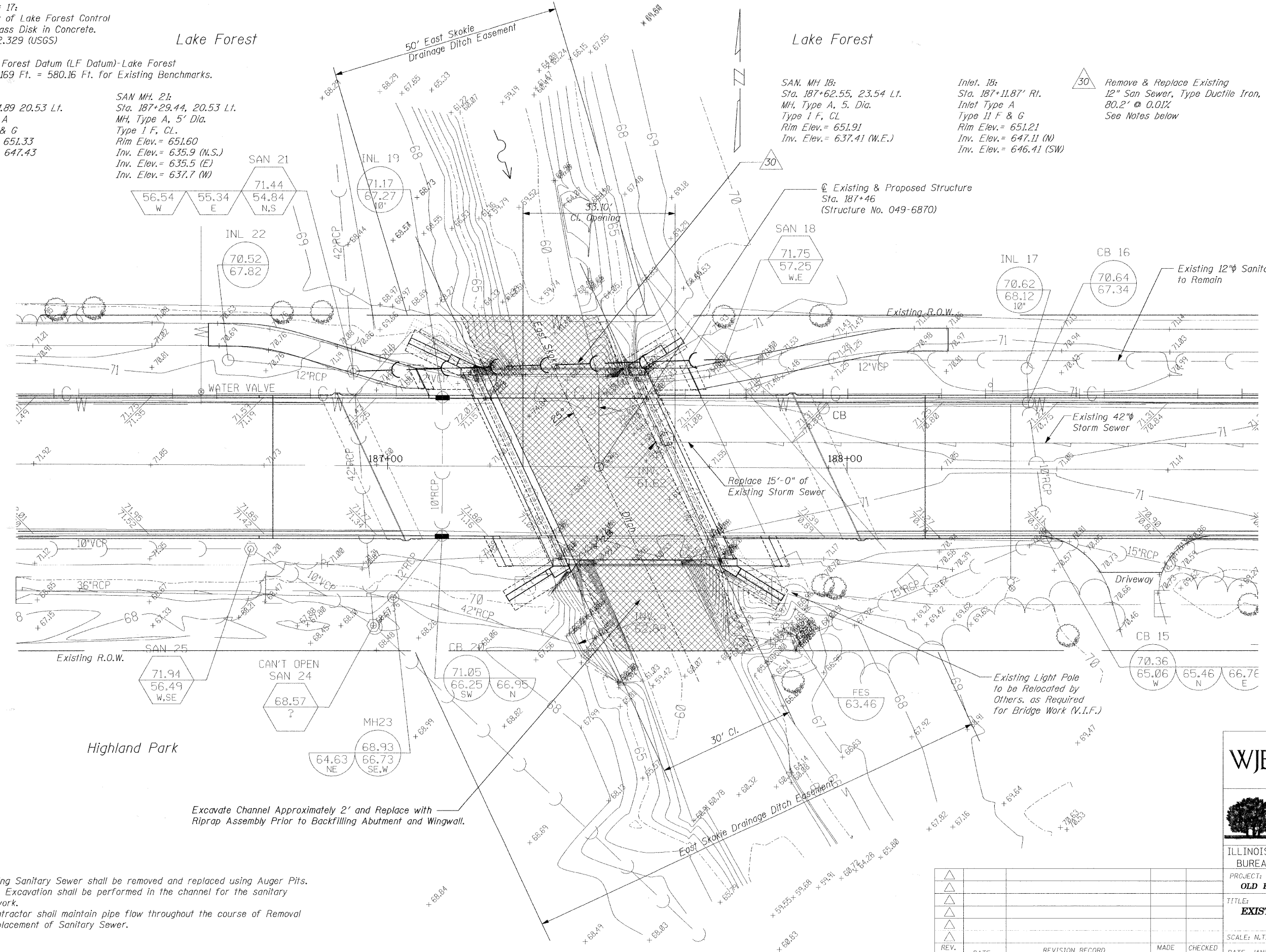
INLET 19:
Sta. 187+11.89 20.53 Lt.
Inlet Type A
Type 11 F & G
Rim Elev. = 651.33
Inv. Elev. = 647.43

SAN MH. 21:
Sta. 187+29.44, 20.53 Lt.
MH, Type A, 5' Dia.
Type 1 F, CL.
Rim Elev. = 651.60
Inv. Elev. = 635.9 (N.S.)
Inv. Elev. = 635.5 (E)
Inv. Elev. = 637.7 (W)

SAN. MH 18:
Sta. 187+62.55, 23.54 Lt.
MH, Type A, 5' Dia.
Type 1 F, CL
Rim Elev. = 651.91
Inv. Elev. = 637.41 (W.E.)

Inlet 18:
Sta. 187+11.87' Rt.
Inlet Type A
Type 11 F & G
Rim Elev. = 651.21
Inv. Elev. = 647.11 (N)
Inv. Elev. = 646.41 (SW)

30 Remove & Replace Existing
12" San Sewer, Type Ductile Iron, CL. 52
80.2' @ 0.01%
See Notes below



Notes:
Existing Sanitary Sewer shall be removed and replaced using Auger Pits.
No open Excavation shall be performed in the channel for the sanitary sewer work.
The Contractor shall maintain pipe flow throughout the course of Removal and Replacement of Sanitary Sewer.

Excavate Channel Approximately 2' and Replace with Riprap Assembly Prior to Backfilling Abutment and Wingwall.

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THE CITY OF LAKE FOREST
CHARTERED 1861

ILLINOIS DEPARTMENT OF TRANSPORTATION
BUREAU OF LOCAL ROADS AND STREETS

PROJECT: **OLD ELM ROAD OVER EAST SKOKIE DITCH**

TITLE: **EXISTING AND PROPOSED DRAINAGE AND UTILITY PLAN**

SCALE: N.T.S. DRAWN BY: IMG
DATE: JANUARY 2008 CHECKED BY: NSA

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F.A.U. R.T.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1248	99-00080-00-BR	LAKE	46	11
STA. 185+96		TO STA. 189+70		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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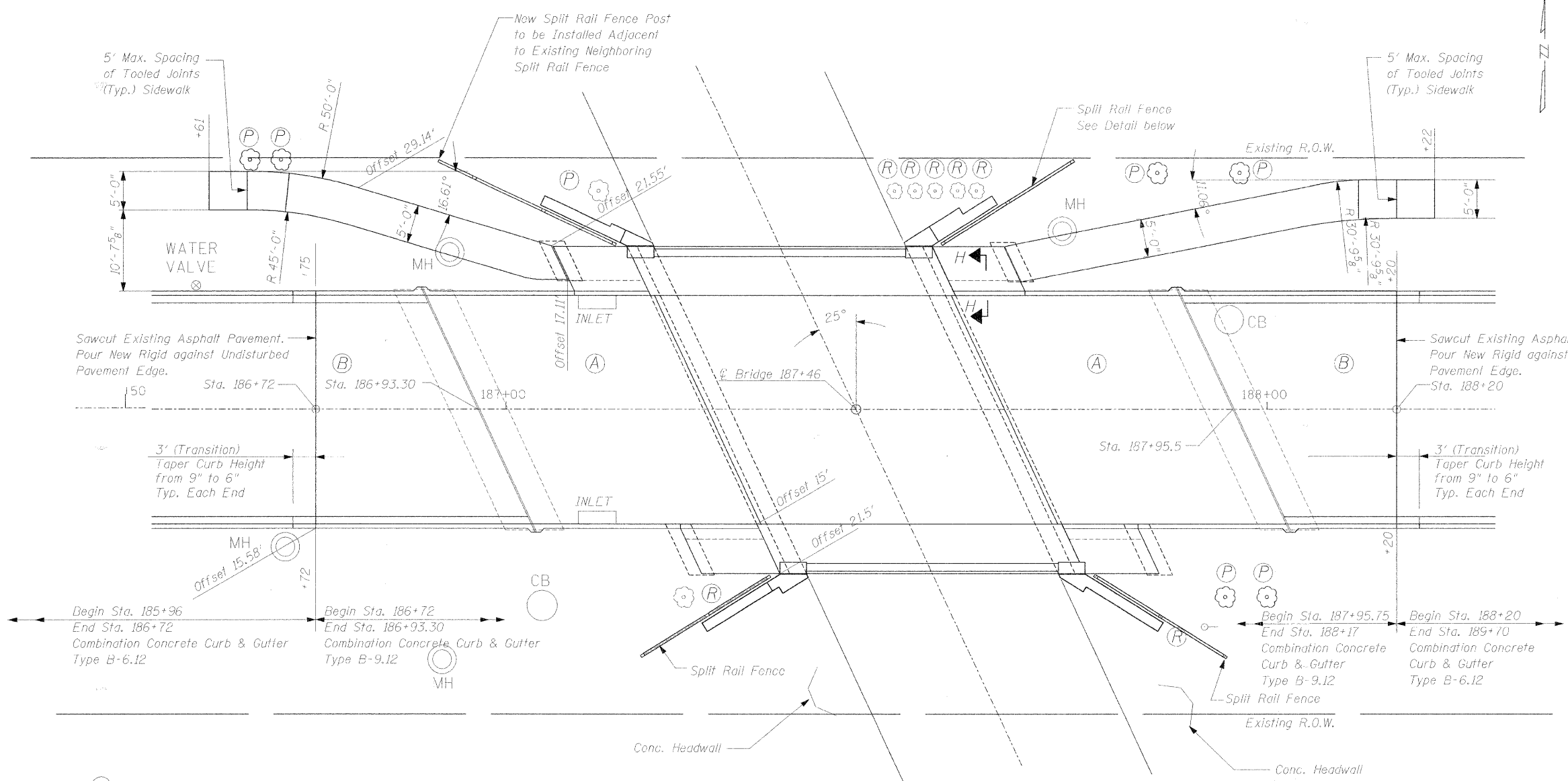
PAVEMENT TYPES

- (A) Bridge Approach Pavement (Special)-Concrete Pavement Connected to Bridge Structure for Semi-Integral Abutment behavior. Slab Cast over Polyethylene Sheet to Reduce Friction with Compacted Sub-grade.
- (B) Rigid Pavement-Conventional IDOT CRC Pavement. Similar to Standard 421101-07 or 421106-07

Note:
See Section H-H Sheet No. 12

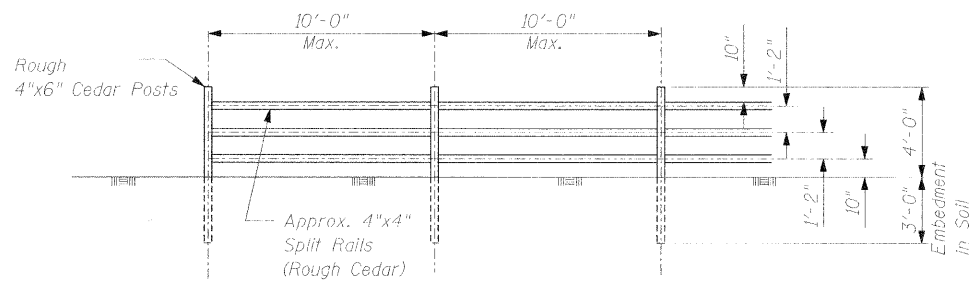
BILL OF MATERIAL

Item	Unit	Quantity
Tree Trunk Protection	Each	20
Tree Removal (6 to 15 Inches Dia.)	Unit	110
Split Rail Fence	Lin. Ft.	110



SIDEWALK PLAN

- (P) Tree to be Protected
- (R) Tree to be Removed



TYPICAL SPLIT RAIL FENCE SECTION

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BUREAU OF LOCAL ROADS AND STREETS

PROJECT:
OLD ELM ROAD OVER EAST SKOKIE DITCH

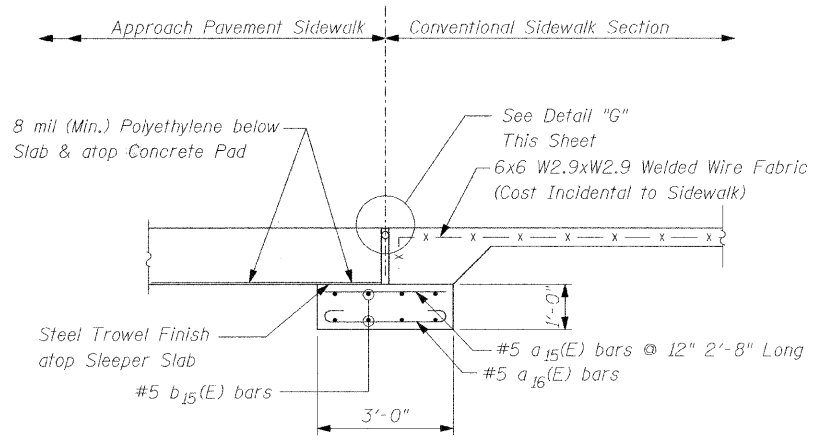
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SIDEWALK PLAN

SCALE: N.T.S. DRAWN BY: IMG
DATE: JANUARY 2008 CHECKED BY: NSA

DATE: 2/1/2008
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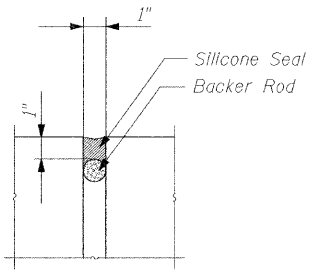
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STA. 185+96	TO STA. 189+70			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

63020

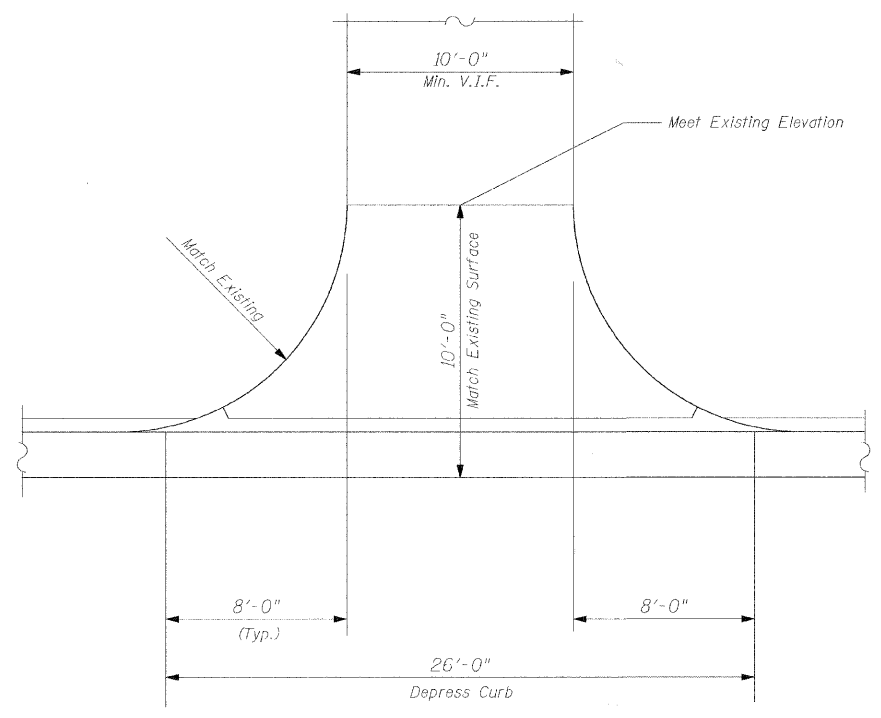


SIDEWALK CONCRETE PAD

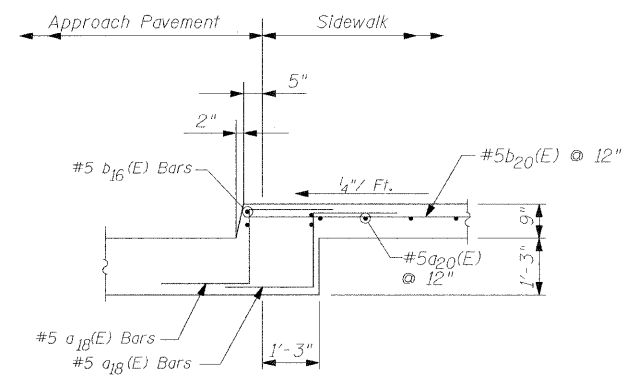
Cost of Sidewalk Concrete Pad Included with Bridge Approach Pavement (Special)



DETAIL "G"



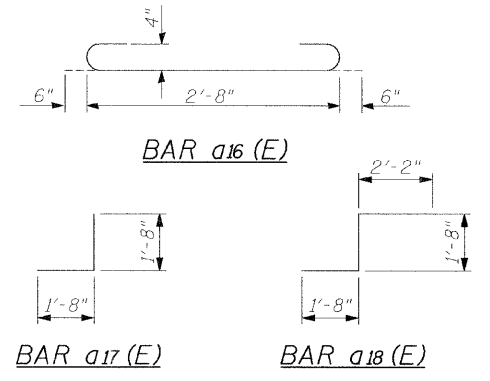
TYPICAL PRIVATE ENTRANCE



SECTION H-H

SIDEWALK AT APPROACH PAVEMENT

For Location of Section H-H See Sheet No. 11.
Cost of 9" Sidewalk and Curb at Approach Slab Included with Bridge Approach Pavement (Special)



BILL OF MATERIAL

Item	Unit	Total
P.C.C Sidewalk, 5" (Special)	Sq. Yd.	520
P.C.C Driveway Pavement, 8"	Sq. Yd.	40

WJE
Wiss, Janney, Elstner Associates, Inc.
Engineers, Architects, Material Scientists
330 Pfingsten Road, Northbrook, IL 60062
(847) 272-7400, Fax: (847) 291-4813
WJE No. 2006.2324

THE CITY OF LAKE FOREST
CHARTERED 1861

ILLINOIS DEPARTMENT OF TRANSPORTATION
BUREAU OF LOCAL ROADS AND STREETS

PROJECT:
OLD ELM ROAD OVER EAST SKOKIE DITCH

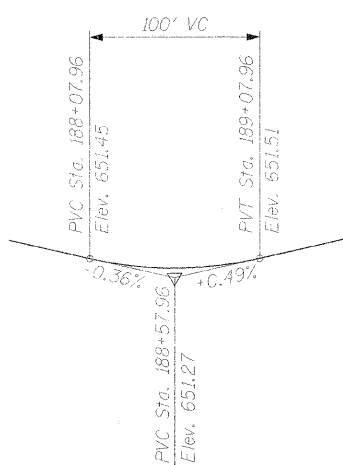
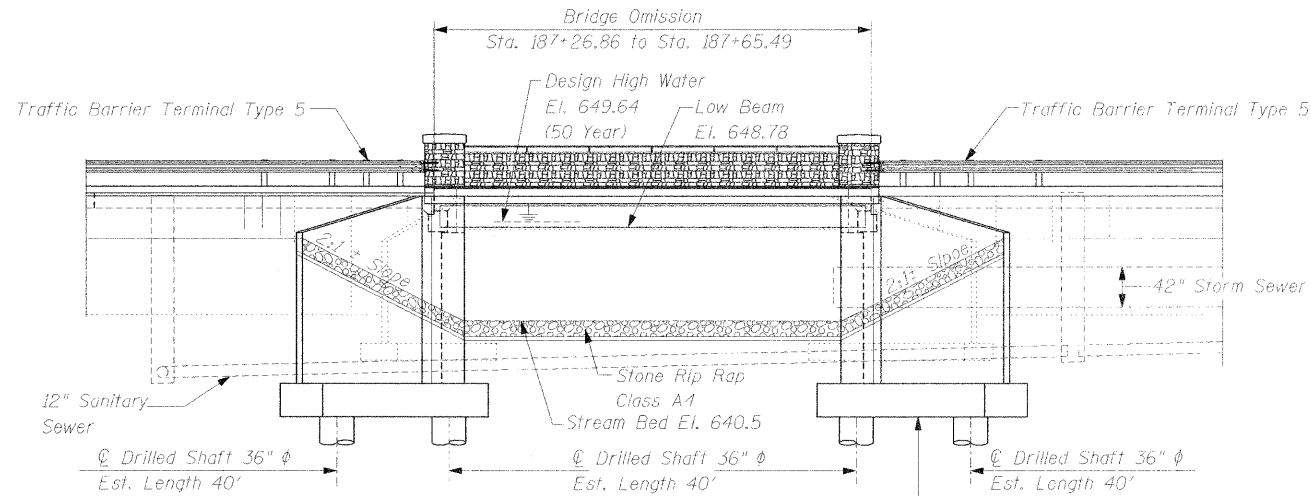
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DATE: JANUARY 2008	CHECKED BY: NSA

DATE: 2/6/2008 FILENAME: p:\2006\2801-2400\2006.2324-manderson-old elm design\microstation-final\c-12.dgn

Benchmark # 17:
Standard City of Lake Forest Control
Monument-Brass Disk in Concrete,
Elevation 652.329 (USGS)

Existing Structure:
Structure Number 049-6863 (Existing)
049-6870 (Proposed) single span
35'-3 3/4"± back to back of abutment,
40'-0" out to out reinforced concrete
slab and beams on closed abutments.
Construction date 1925, widened and
resurfaced 1967.
Existing structure to be removed.
Traffic will be detoured during construction
No Salvage

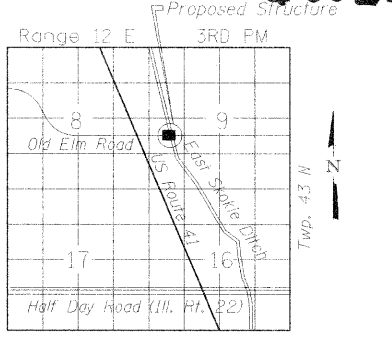


**FAST SKOKIE DITCH
BUILT 200_ BY
THE CITY OF LAKE FOREST
SEC. 99-00080-00-BR
STATION 187+46
STR. NO. 049-6870 LOADING HL-93**

NAME PLATE
See Std. 515001

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1248	99-00080-00-BR	LAKE	46	13
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

Sheet S-1 of S-29



LOADING HL-93
Allow 50#/sq. ft. for future wearing surface.

DESIGN SPECIFICATIONS
2004 AASHTO LRFD Bridge Design Specifications
with 2005 and 2006 Interims.

DESIGN STRESSES

FIELD UNITS
f_c = 4,000 psi
f_y = 60,000 psi (reinforcement)
f_y = 50,000 psi (structural steel)

SEISMIC DATA
Seismic Performance Zone (SPZ) = A
Bedrock Acceleration Coefficient (A) = 0.04 g
Site Coefficient (S) = 1.2

I CERTIFY THAT TO THE BEST OF MY KNOWLEDGE,
INFORMATION AND BELIEF, THIS BRIDGE DESIGN IS
STRUCTURALLY ADEQUATE FOR THE DESIGN LOADING
SHOWN ON THE PLANS. THE DESIGN IS AN ECONOMIC
ONE FOR THE STYLE OF STRUCTURE AND COMPLIES
WITH REQUIREMENTS OF THE CURRENT "AASHTO
STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES".



11/30/08
3/11/08
SIGNATURE: *Neil S. Anderson* EXPIRATION DATE

WJE Wiss, Janney, Elstner Associates, Inc.
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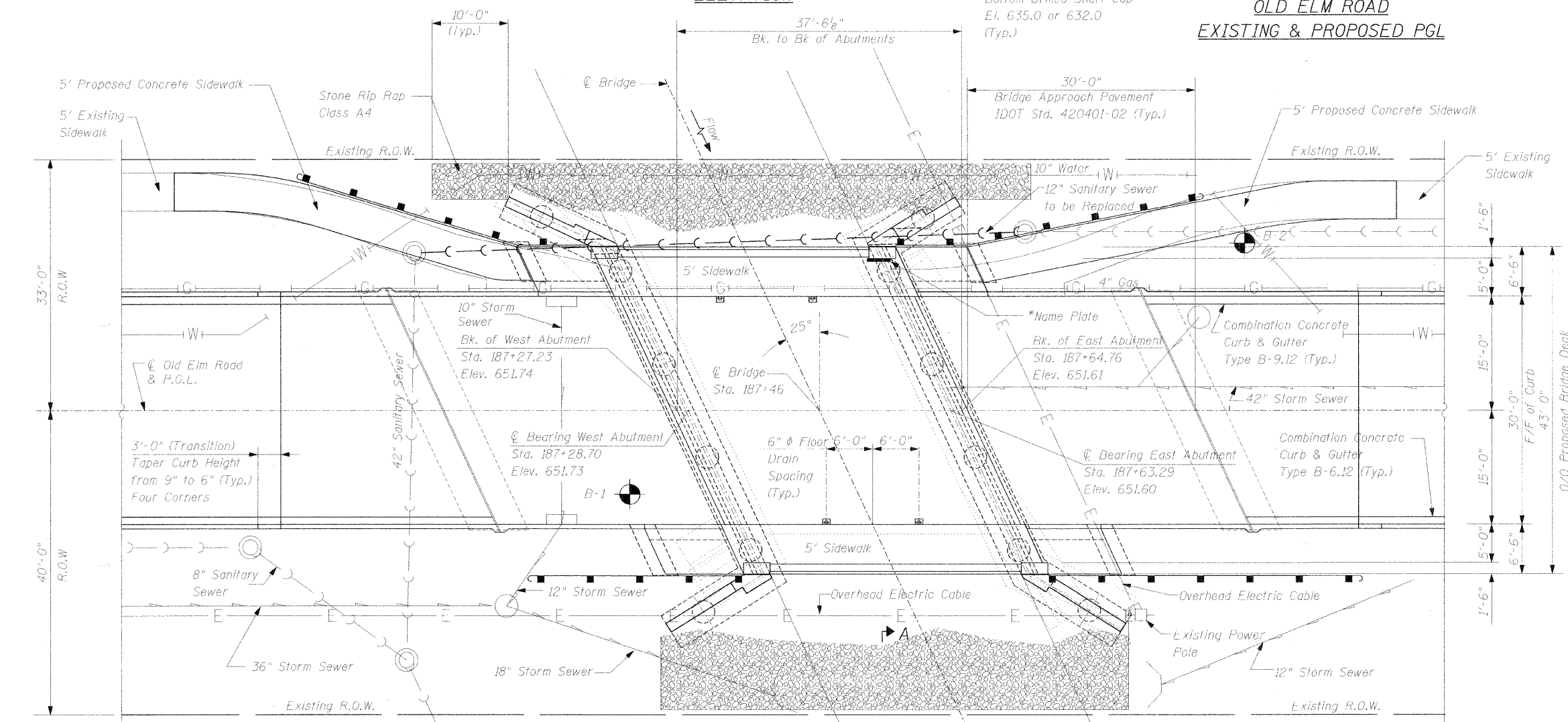
THE CITY OF LAKE FOREST
CHARTERED 1861

ILLINOIS DEPARTMENT OF TRANSPORTATION
BUREAU OF LOCAL ROADS AND STREETS

PROJECT:
**OLD ELM ROAD OVER EAST SKOKIE DITCH
STA. 187+46 LAKE COUNTY
STRUCTURE NO. 049-6870**

TITLE:
GENERAL PLAN AND ELEVATION

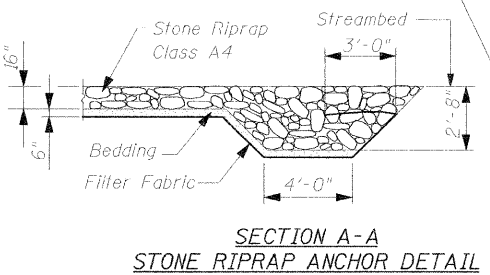
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DATE: JANUARY 2006 CHECKED BY: NSA



WATERWAY INFORMATION

Drainage Area = 14.1 Sq. Mi. Low Grade Elev. 651.45 @ Sta. 1+05

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		H.W.L.	Head - Ft.		Headwater El.	
			Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
Design	50	1200	212.3	212.3	649.64	0.30	0.30	649.94	649.94
Base	100	1410	212.3	212.3	650.06	0.55	0.55	650.61	650.61
Overtopping	Est. 1800	212.3	212.3	-	-	-	-	651.45	651.45
Max. Calc.	500	2385	212.3	212.3	651.43	1.24	1.24	652.67	652.67

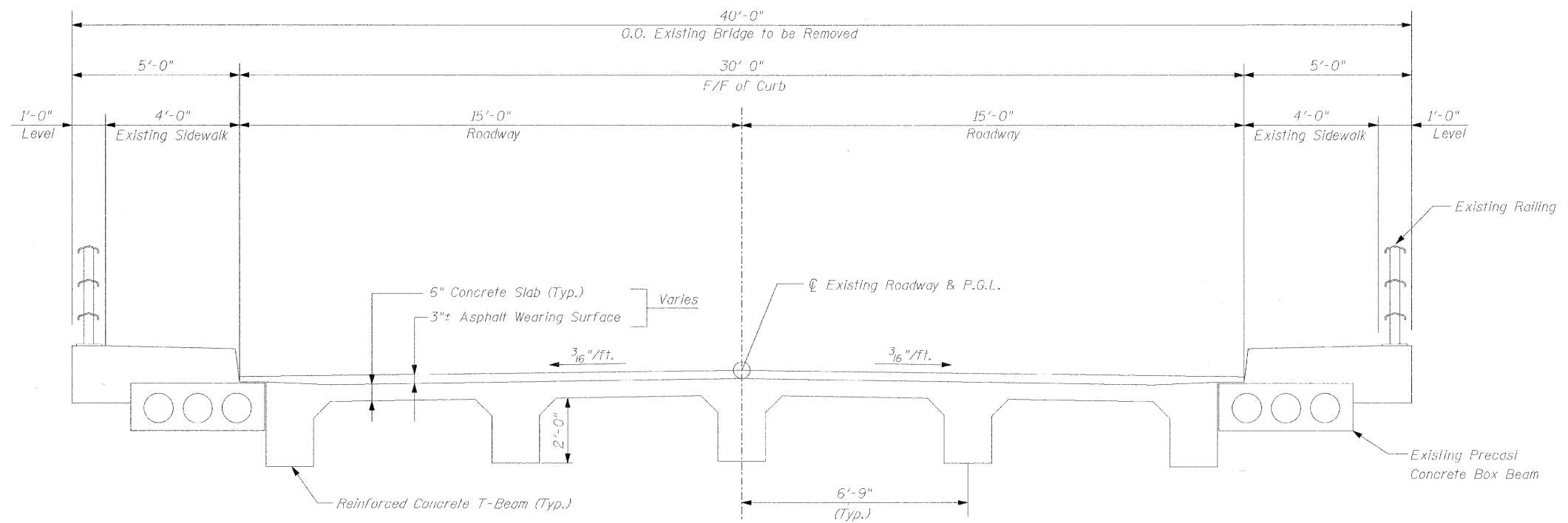


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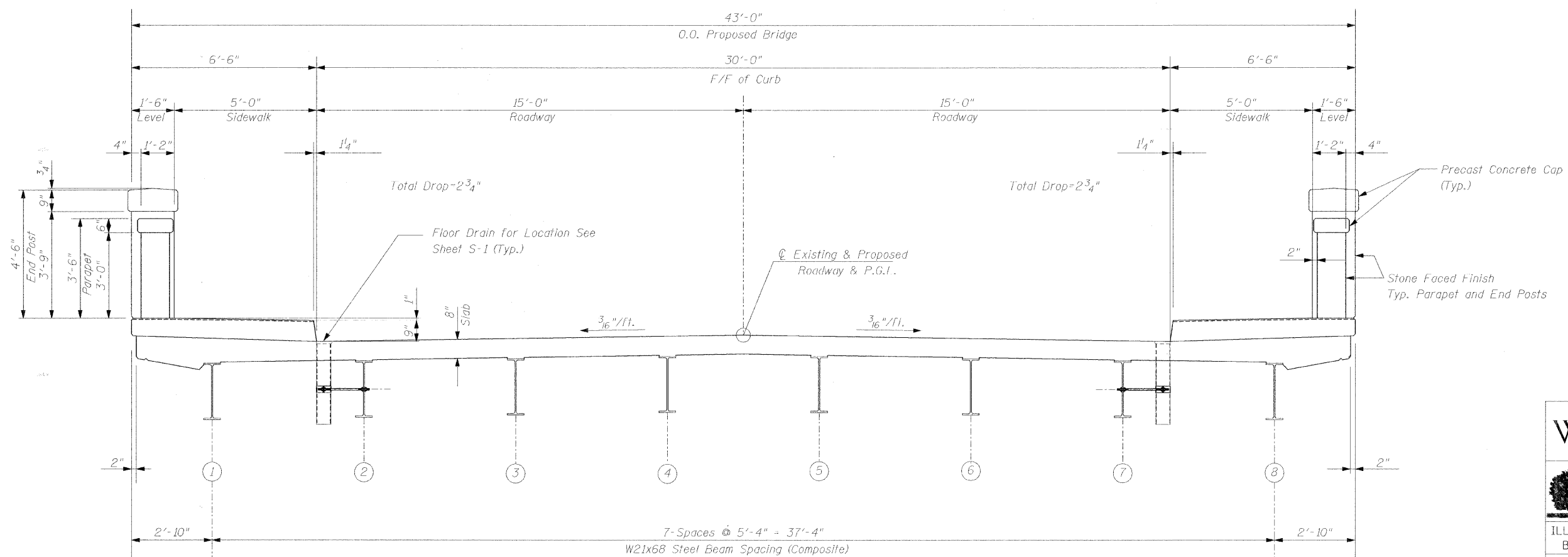
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F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1248	99-00080-00-BR	LAKE	46	15
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

Sheet S-3 of S-29 **63020**



EXISTING CROSS SECTION
(Looking East)



PROPOSED CROSS SECTION
(Looking East)

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△					
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THE CITY OF LAKE FOREST
CHARTERED 1861

ILLINOIS DEPARTMENT OF TRANSPORTATION
BUREAU OF LOCAL ROADS AND STREETS

PROJECT:
OLD ELM ROAD OVER EAST SKOKIE DITCH
STA. 187+46 LAKE COUNTY
STRUCTURE NO. 049-6870

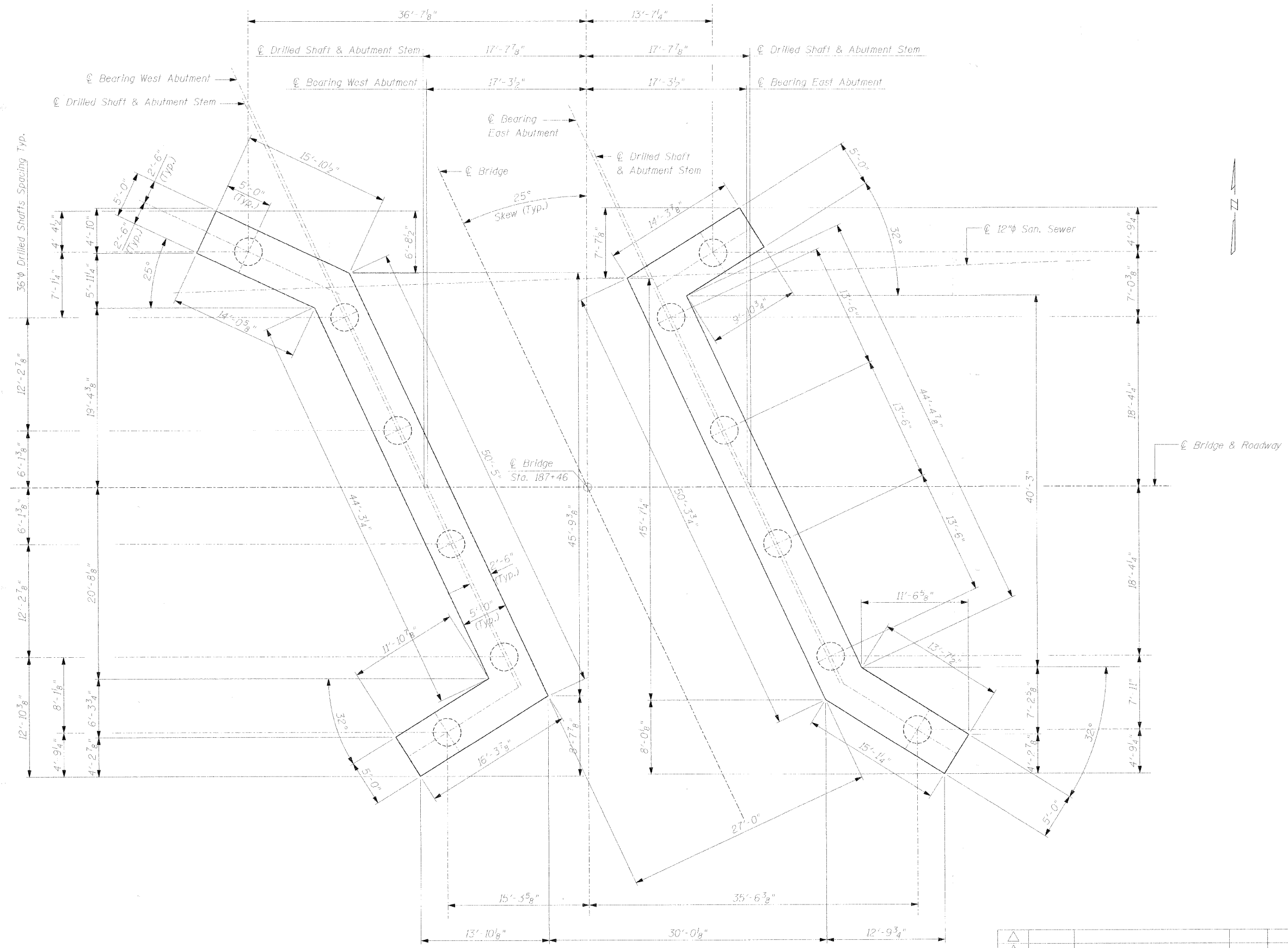
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F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1248	99-00080-00-BR	LAKE	46	16
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

Sheet S-4 of S-29 **63020**



DRILLED SHAFT CAP LAYOUT

Notes:
See S-25 for Drilled Shaft and Cap Details

DATE: 2/2/08
FILENAME: P:\2006\2301-2400\20062324-NAAnderson-Old Elm Design\MICROSTATION-FINAL\S-04.dgn

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ILLINOIS DEPARTMENT OF TRANSPORTATION
BUREAU OF LOCAL ROADS AND STREETS

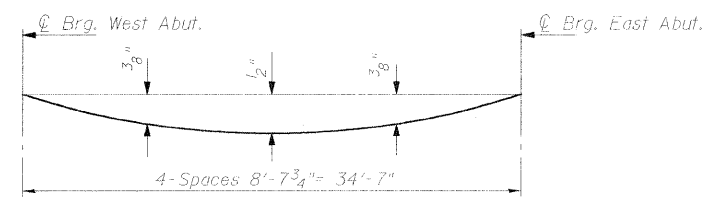
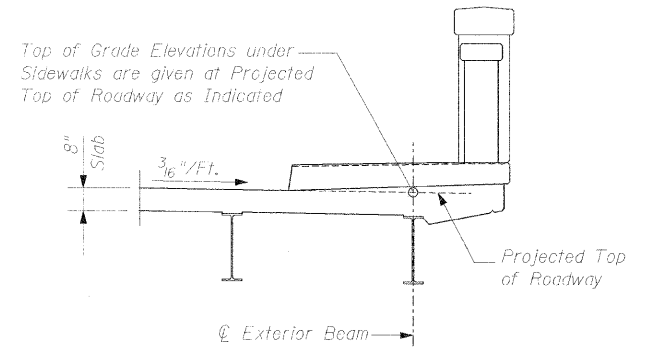
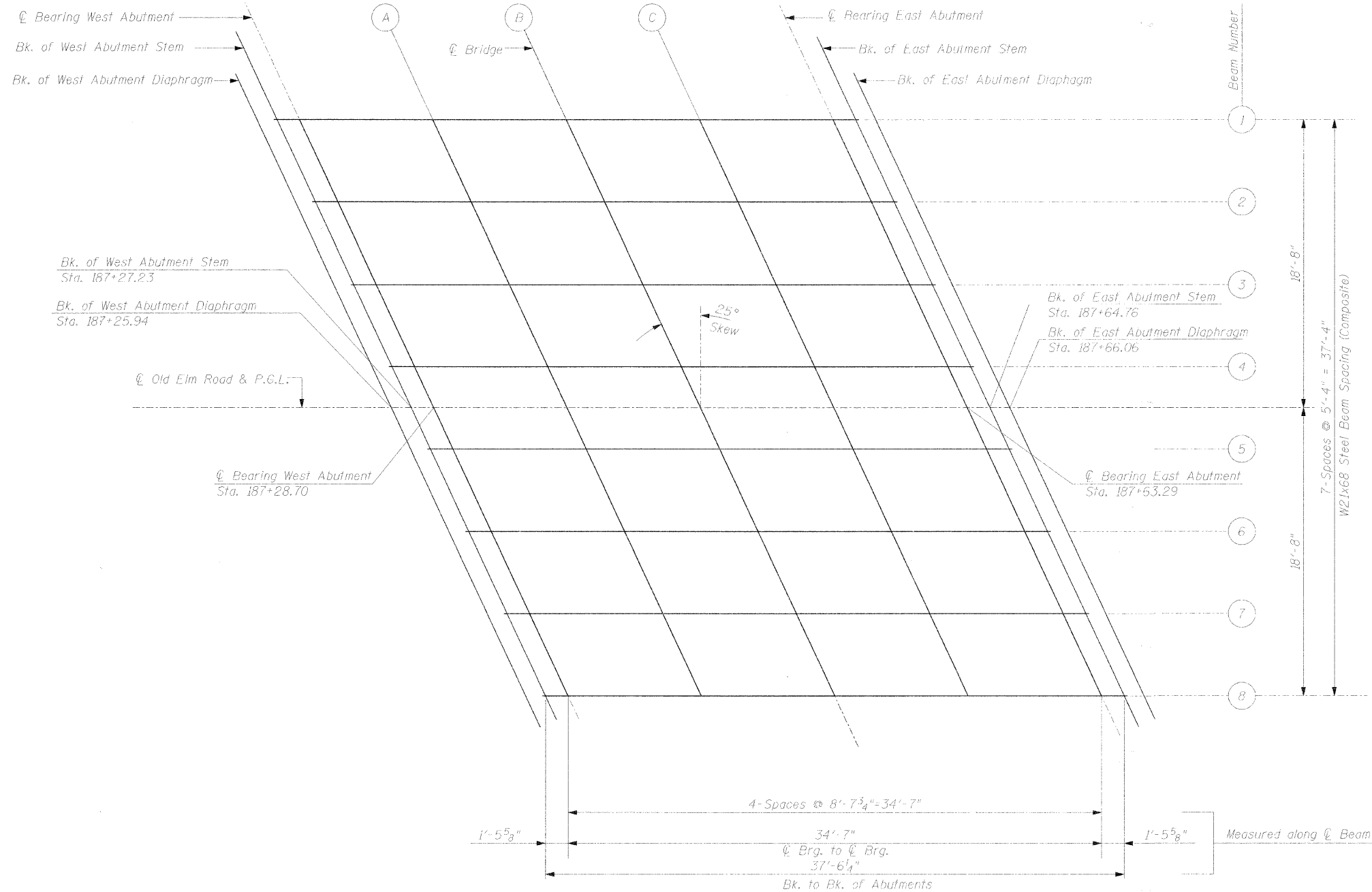
PROJECT:
OLD ELM ROAD OVER EAST SKOKIE DITCH
STA. 187+46 LAKE COUNTY
STRUCTURE NO. 049-6870

TITLE:
DRILLED SHAFT CAP LAYOUT

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REV. NO.	DATE	REVISION RECORD	MADE BY	CHECKED BY	

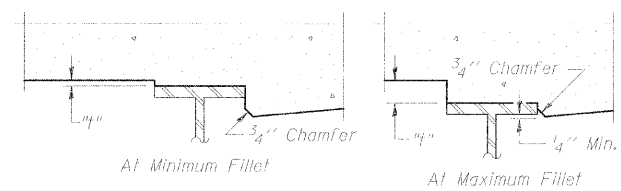
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DATE: JANUARY 2008 CHECKED BY: NSA

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STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
Sheet S-5 of S-29			63020	



DEAD LOAD DEFLECTION DIAGRAM
(Includes weight of concrete only.)

Note: The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown on Sheet S-6.



To determine "t": After all structural steel has been erected, elevations of the top flanges of the beams shall be taken at intervals shown above. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown on Sheet S-6, minus slab thickness, equals the fillet heights "t" above top flange of beams.

FILLET HEIGHTS

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△					
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WJE No. 2006.2324

THE CITY OF LAKE FOREST
CHARTERED 1861

ILLINOIS DEPARTMENT OF TRANSPORTATION
BUREAU OF LOCAL ROADS AND STREETS

PROJECT: **OLD ELM ROAD OVER EAST SKOKIE DITCH**
STA. 187+46 LAKE COUNTY
STRUCTURE NO. 049-6870

TITLE: **TOP OF SLAB ELEVATION LOCATIONS**

SCALE: N.T.S. DRAWN BY: IMG
DATE: JANUARY 2008 CHECKED BY: NSA

DATE: 2/2/2008 FILENAME: P:\2006\2301-2400\2006.2324-Anderson-Old Elm Design\MICROSTATION-FINAL\S-06.dgn

BEAM NO. 1

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. of West Diaphragm	187+17.24	-18.67	651.47	651.47
☉ Bearing West Abutment	187+20.01	-18.67	651.46	651.46
A	187+28.65	-18.67	651.43	651.46
B	187+37.30	-18.67	651.40	651.44
C	187+45.95	-18.67	651.37	651.40
☉ Bearing East Abutment	187+54.59	-18.67	651.34	651.34
Bk. of East Diaphragm	187+57.36	-18.67	651.33	651.33

BEAM NO. 2

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. of West Diaphragm	187+19.72	-13.34	651.55	651.55
☉ Bearing West Abutment	187+22.49	-13.34	651.54	651.54
A	187+31.13	-13.34	651.51	651.54
B	187+39.78	-13.34	651.47	651.52
C	187+48.43	-13.34	651.44	651.47
☉ Bearing East Abutment	187+57.07	-13.34	651.41	651.41
Bk. of East Diaphragm	187+59.84	-13.34	651.40	651.40

BEAM NO. 3

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. of West Diaphragm	187+22.21	-8.00	651.62	651.62
☉ Bearing West Abutment	187+24.98	-8.00	651.61	651.61
A	187+33.62	-8.00	651.61	651.61
B	187+42.27	-8.00	651.59	651.59
C	187+50.92	-8.00	651.55	651.55
☉ Bearing East Abutment	187+59.56	-8.00	651.49	651.49
Bk. of East Diaphragm	187+62.33	-8.00	651.48	651.48

BEAM NO. 4

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. of West Diaphragm	187+24.70	-2.67	651.70	651.70
☉ Bearing West Abutment	187+27.47	-2.67	651.69	651.69
A	187+36.11	-2.67	651.65	651.69
B	187+44.76	-2.67	651.62	651.66
C	187+53.41	-2.67	651.59	651.62
☉ Bearing East Abutment	187+62.05	-2.67	651.56	651.56
Bk. of East Diaphragm	187+64.82	-2.67	651.55	651.55

☉ BRIDGE & P.G.L.

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. of West Diaphragm	187+25.94	0.00	651.73	651.73
☉ Bearing West Abutment	187+28.71	0.00	651.72	651.72
A	187+37.35	0.00	651.69	651.72
B	187+46.00	0.00	651.66	651.70
C	187+54.65	0.00	651.63	651.66
☉ Bearing East Abutment	187+63.29	0.00	651.60	651.60
Bk. of East Diaphragm	187+66.06	0.00	651.59	651.59

BEAM NO. 5

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. of West Diaphragm	187+27.18	+2.67	651.69	651.69
☉ Bearing West Abutment	187+29.95	+2.67	651.68	651.68
A	187+38.59	+2.67	651.65	651.68
B	187+47.24	+2.67	651.61	651.66
C	187+55.89	+2.67	651.58	651.61
☉ Bearing East Abutment	187+64.53	+2.67	651.55	651.55
Bk. of East Diaphragm	187+67.30	+2.67	651.54	651.54

BEAM NO. 6

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. of West Diaphragm	187+29.67	+8.00	651.59	651.59
☉ Bearing West Abutment	187+32.44	+8.00	651.58	651.58
A	187+41.08	+8.00	651.55	651.58
B	187+49.73	+8.00	651.52	651.56
C	187+58.38	+8.00	651.49	651.52
☉ Bearing East Abutment	187+67.02	+8.00	651.46	651.46
Bk. of East Diaphragm	187+69.79	+8.00	651.45	651.45

BEAM NO. 7

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. of West Diaphragm	187+32.16	+13.34	651.50	651.50
☉ Bearing West Abutment	187+34.93	+13.34	651.49	651.49
A	187+43.57	+13.34	651.46	651.49
B	187+52.22	+13.34	651.43	651.47
C	187+60.87	+13.34	651.40	651.43
☉ Bearing East Abutment	187+69.51	+13.34	651.37	651.37
Bk. of East Diaphragm	187+72.28	+13.34	651.36	651.36

BEAM NO. 8

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. of West Diaphragm	187+34.64	+18.67	651.41	651.41
☉ Bearing West Abutment	187+37.41	+18.67	651.40	651.40
A	187+46.05	+18.67	651.37	651.40
B	187+54.70	+18.67	651.34	651.38
C	187+63.35	+18.67	651.31	651.34
☉ Bearing East Abutment	187+71.99	+18.67	651.28	651.28
Bk. of East Diaphragm	187+74.76	+18.67	651.27	651.27

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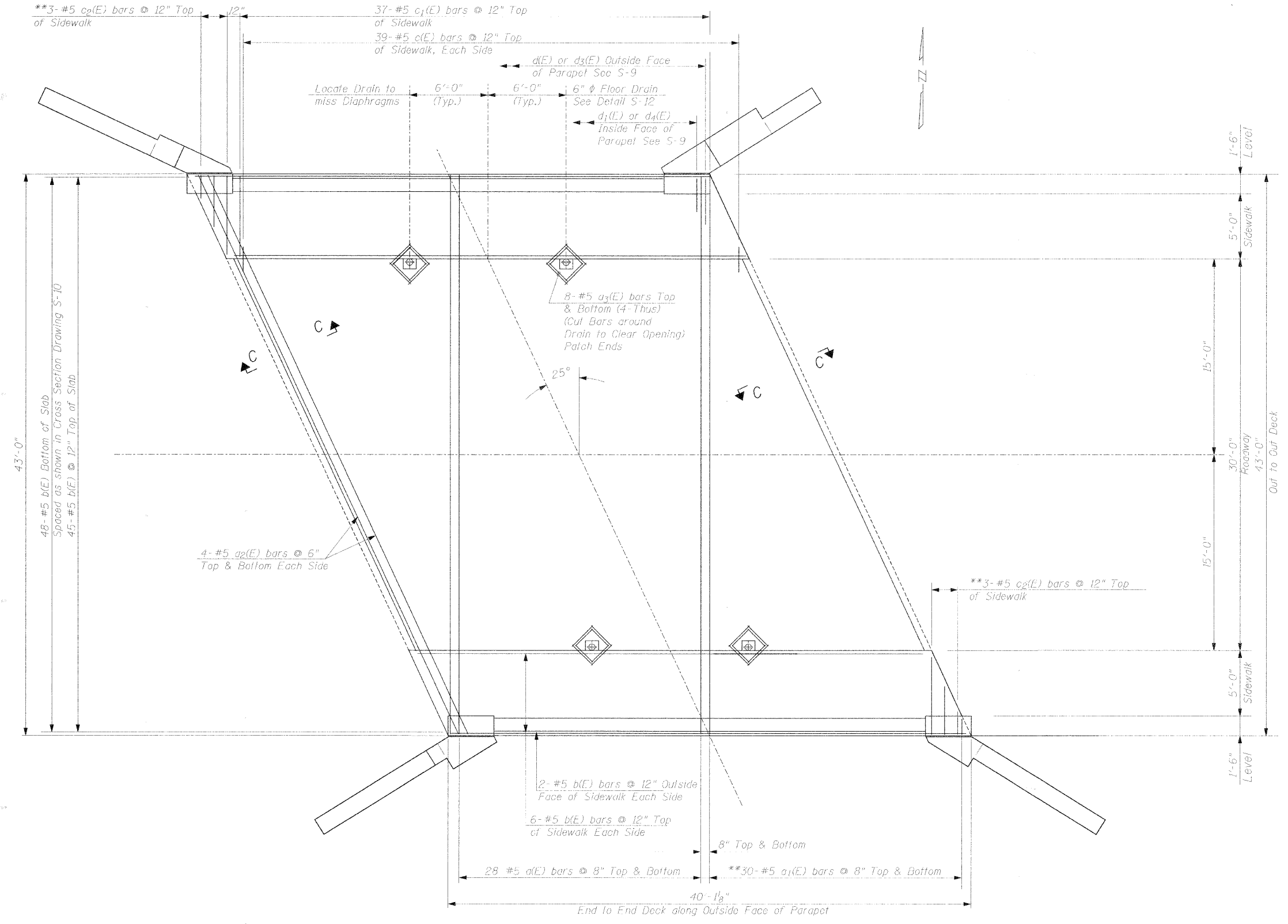
Notes:
See S-5 for Elevation Locations

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THE CITY OF LAKE FOREST CHARTERED 1861	
ILLINOIS DEPARTMENT OF TRANSPORTATION BUREAU OF LOCAL ROADS AND STREETS	
PROJECT: OLD ELM ROAD OVER EAST SKOKIE DITCH STA. 187+46 LAKE COUNTY STRUCTURE NO. 049-6870	
TITLE: TOP OF SLAB ELEVATION	
SCALE: N.T.S. DATE: JANUARY 2008	DRAWN BY: IMG CHECKED BY: NSA

F.A.J. RE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

Sheet S-7 of S-29 **63020**



DECK PLAN

** Order a1(E) & c2(E) bars full length. Cut to fit skew and use remainder of bars in opposite end. Patch Ends with Epoxy Patching

Notes:
See Sheet S-12 for Superstructure Details, Section C-C, and Bill of Material
See Sheet S-9 & S-10 for Parapet Details.
Reinforcement bars designated (E) shall be epoxy coated.
See S-11 for Diaphragm Details

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THE CITY OF LAKE FOREST
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ILLINOIS DEPARTMENT OF TRANSPORTATION
BUREAU OF LOCAL ROADS AND STREETS

PROJECT:
OLD ELM ROAD OVER EAST SKOKIE DITCH
STA. 187+46 LAKE COUNTY
STRUCTURE NO. 049-6870

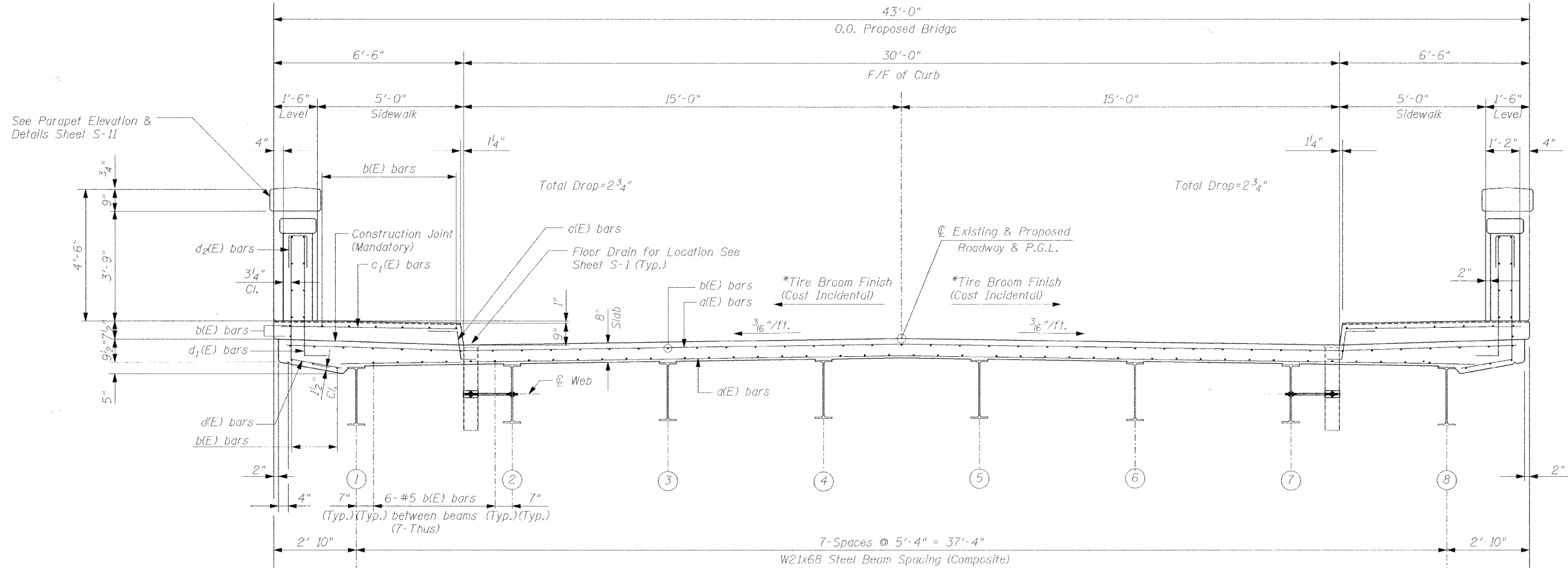
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DECK SLAB DETAILS

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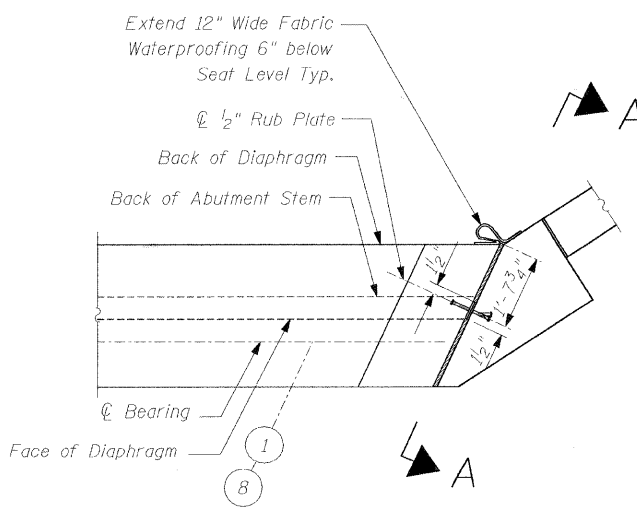
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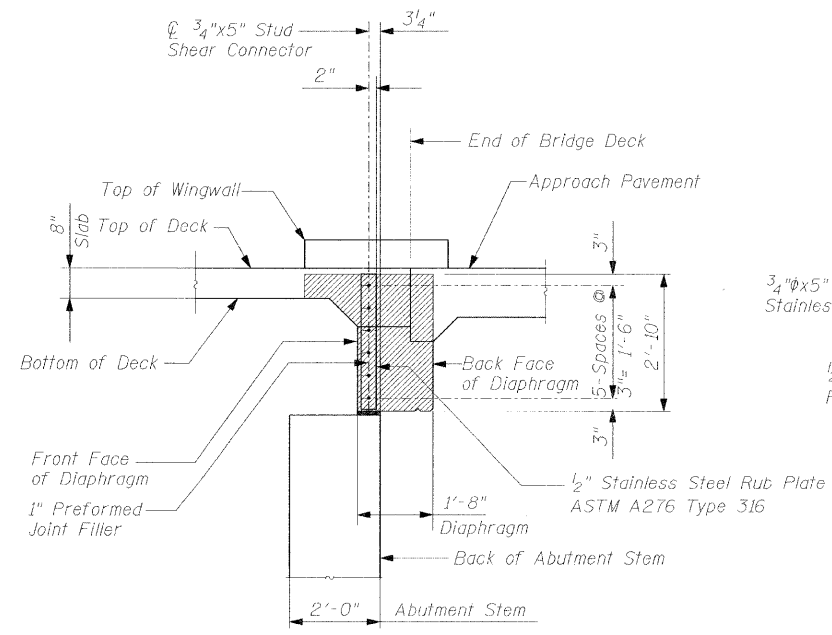
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1248	99-00080-00-BR	LAKE	46	20
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
			Sheet S-8 of S-29 63020	



PROPOSED CROSS SECTION
(Looking East)

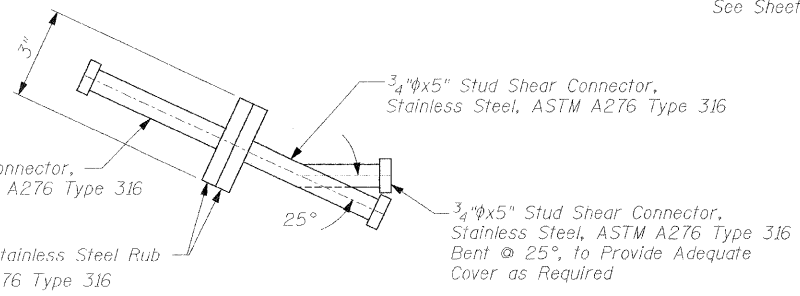


DETAIL "F"



DETAIL A-A

Dimensions at right angles to abutment
*Cost included with Concrete Superstructure



RUB PLATE DETAILS

Notes:
Reinforcement bars in designated (E) shall be epoxy coated.
All exposed edges shall have 3/4" chamfer.
See Sheet S-12 for Superstructure Details, Bill of Material and Parapet Joint Details
See Sheet S-9 & S-10 for parapet reinforcement Details.

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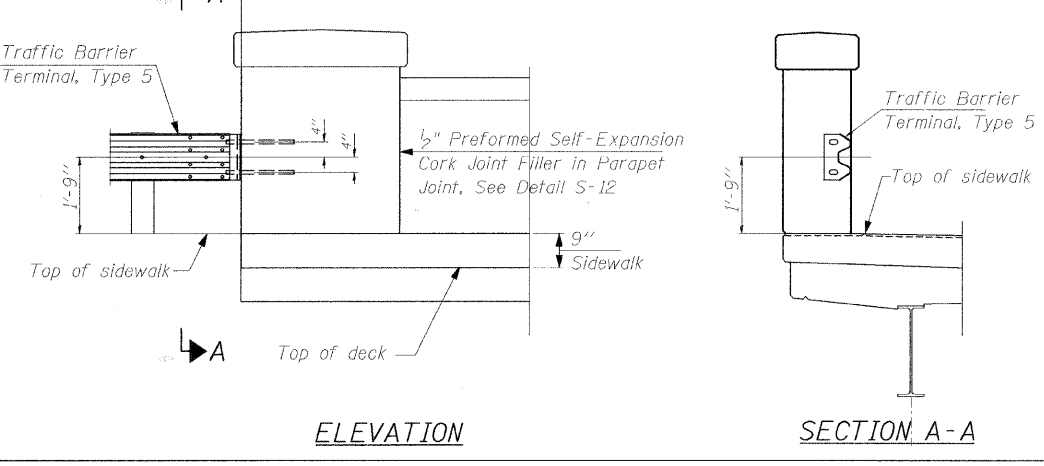
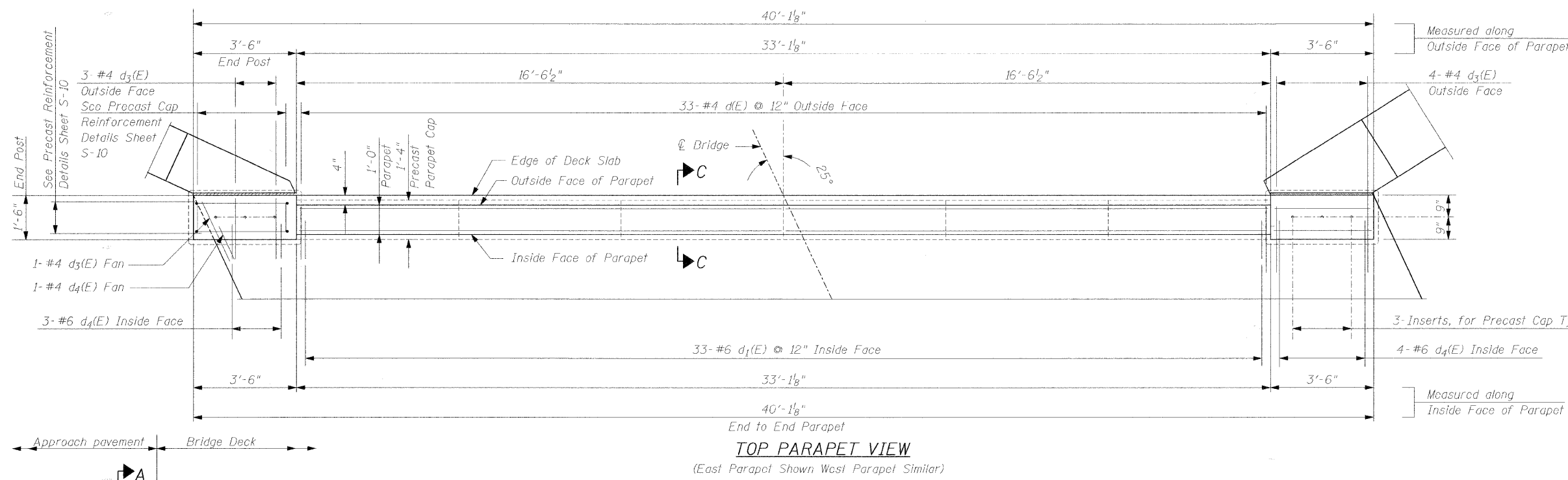
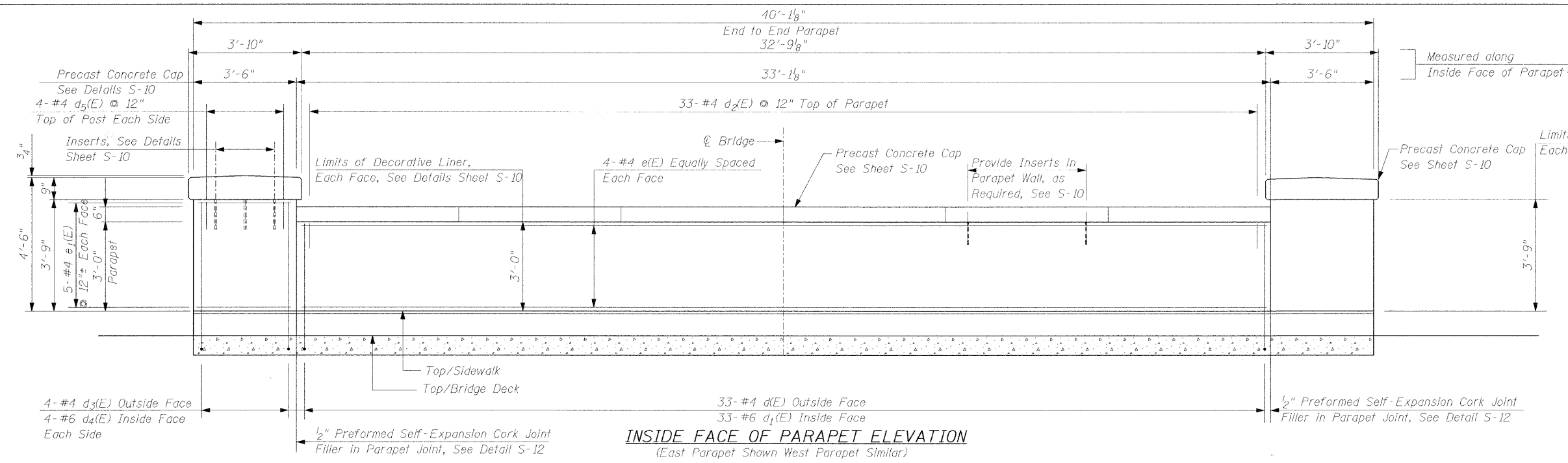
PROJECT:
OLD ELM ROAD OVER EAST SKOKIE DITCH
STA. 187+46 LAKE COUNTY
STRUCTURE NO. 049-6870

TITLE:
TYPICAL CROSS SECTION

SCALE: N.T.S. DRAWN BY: IMG
DATE: JANUARY 2008 CHECKED BY: NSA

DATE: 2/5/2008
FILENAME: P:\2006\2501-2400\2006.2324-NAnderson-Old Elm Design\MICROSTATION-FINAL\S-06.dgn

F.A.J. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1248	99-00080-00-BR	LAKE	46	21
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
Sheet S-9 of S-29			63020	



Notes:
See S-12 for Superstructure Details and Bill of Material
See S-10 for Precast Concrete Cap Details

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	THE CITY OF LAKE FOREST CHARTERED 1861
ILLINOIS DEPARTMENT OF TRANSPORTATION BUREAU OF LOCAL ROADS AND STREETS	
PROJECT: OLD ELM ROAD OVER EAST SKOKIE DITCH STA. 187+46 LAKE COUNTY STRUCTURE NO. 049-6870	
TITLE: PARAPET PLAN & ELEVATION	
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DATE: JANUARY 2008	CHECKED BY: NSA

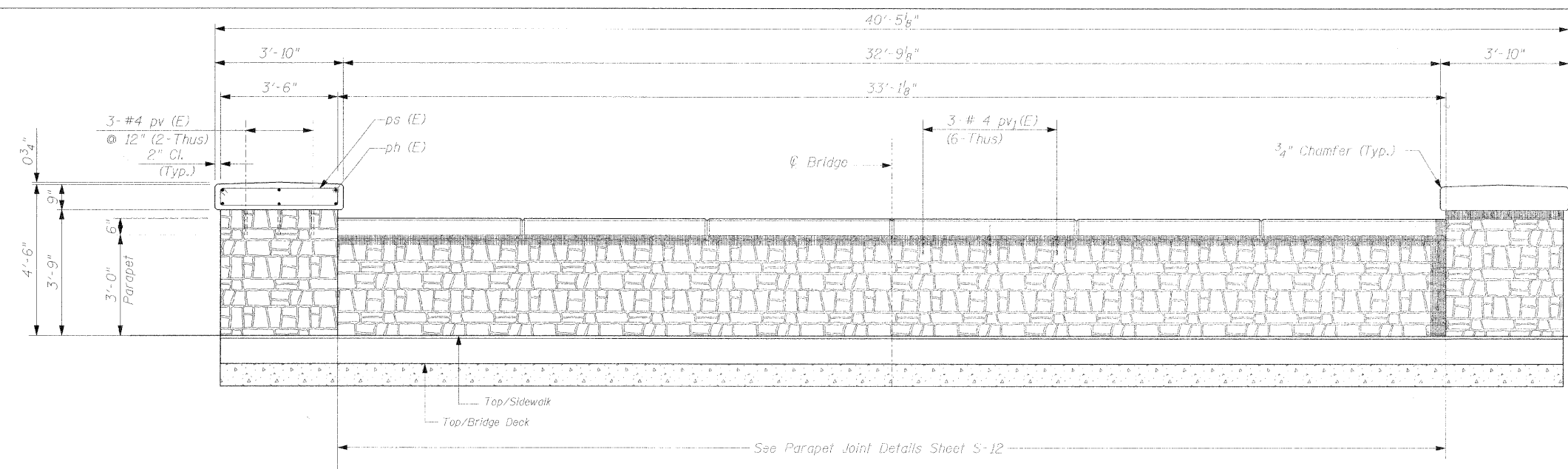
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DATE: 2/5/2008
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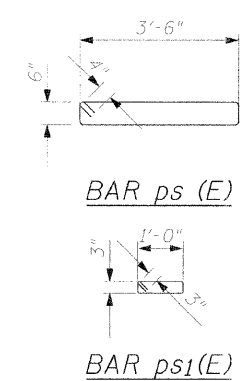
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STA.	TO STA.		FED. ROAD DIST. NO. ILLINOIS	
FED. AID PROJECT			63020	
Sheet S-10 of S-29				

Measured along Inside Face of Parapet

Note: All edges shall have 3/4" Chamfer



INSIDE FACE OF PARAPET ELEVATION
(North Parapet Shown South Parapet Similar)

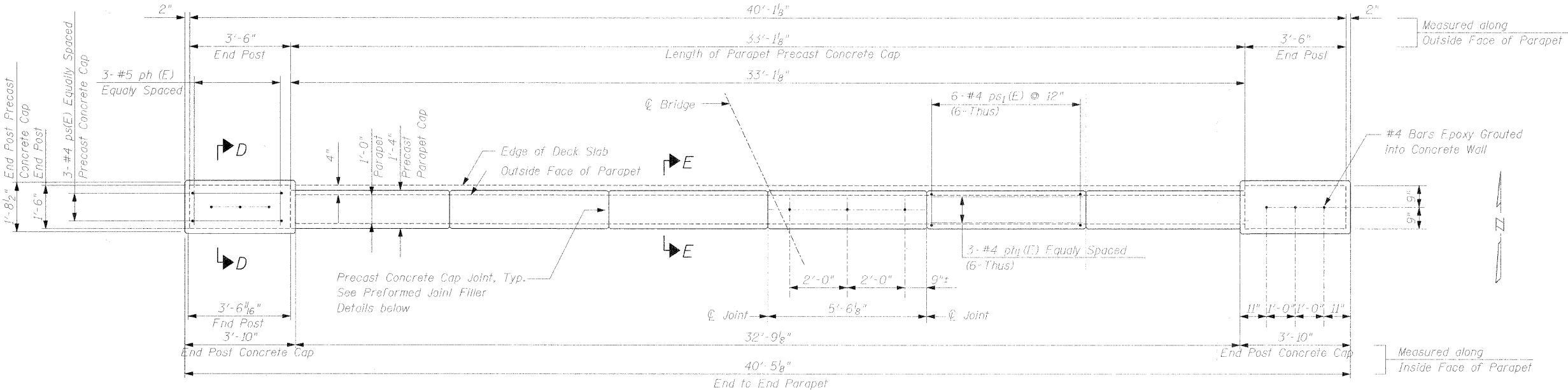


****PRECAST CONCRETE CAP BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
ps(E)	12	#4	8'-8"	
ps1(E)	36	#4	3'-0"	
ph(E)	12	#5	1'-4"	
ph1(E)	36	#5	5'-2"	
pv(E)	12	#4	1'-3"	
pv1(E)	36	#4	1'-0"	
Precast Concrete Caps Foot				82

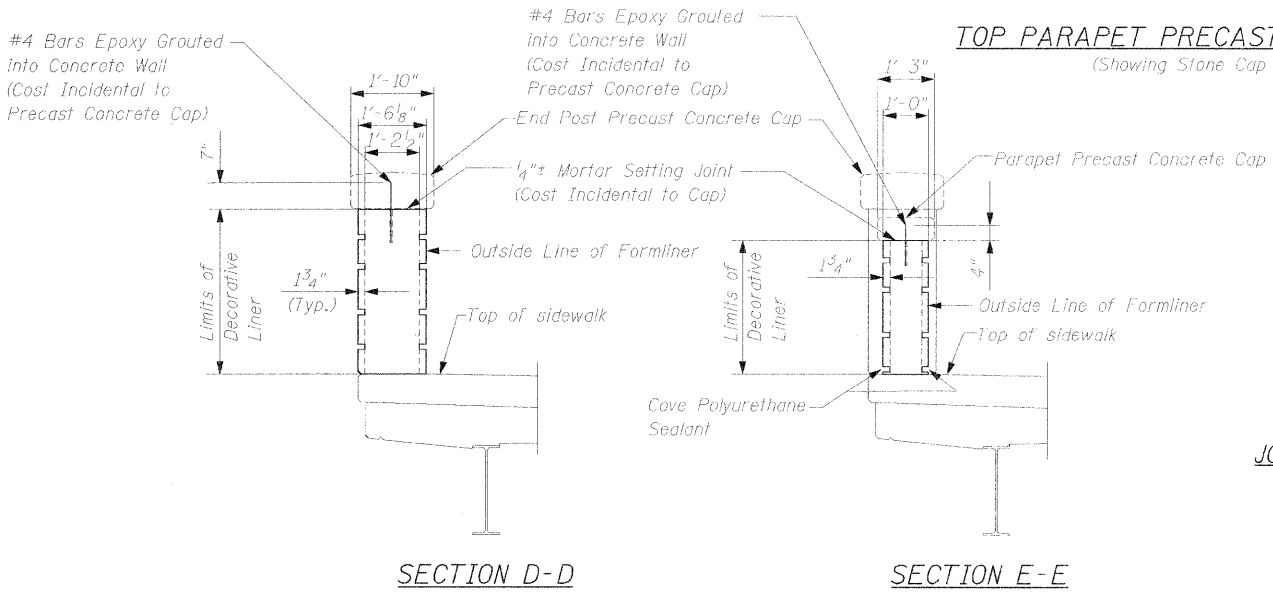
Reinforcement bars designated (E) shall be epoxy coated.

** Precast Concrete Cap Reinforcement bars Included in the Cost of Precast Concrete Caps (Per Foot).



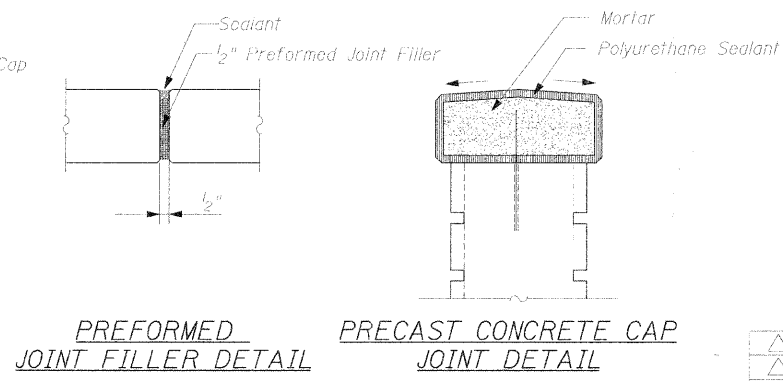
TOP PARAPET PRECAST CONCRETE CAP VIEW
(Showing Stone Cap Reinforcement)

Notes: Thoroughly clean concrete holes of dust prior to epoxy grouting.



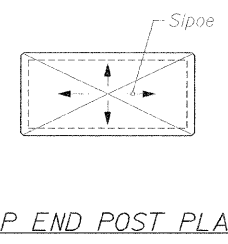
SECTION D-D

SECTION E-E



PREFORMED JOINT FILLER DETAIL

PRECAST CONCRETE CAP JOINT DETAIL



TOP END POST PLAN

REV. NO.	DATE	REVISION RECORD	MADE BY	CHECKED BY

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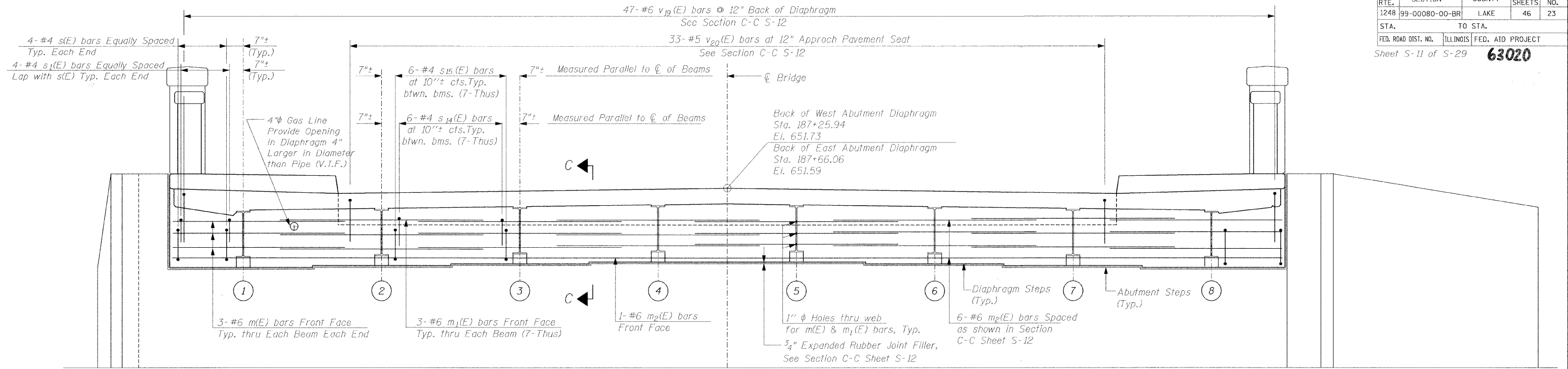
PROJECT: OLD ELM ROAD OVER EAST SKOKIE DITCH
STA. 187+46 LAKE COUNTY
STRUCTURE NO. 049-6870

TITLE: PARAPET PRECAST CONCRETE CAP PLAN & ELEVATION

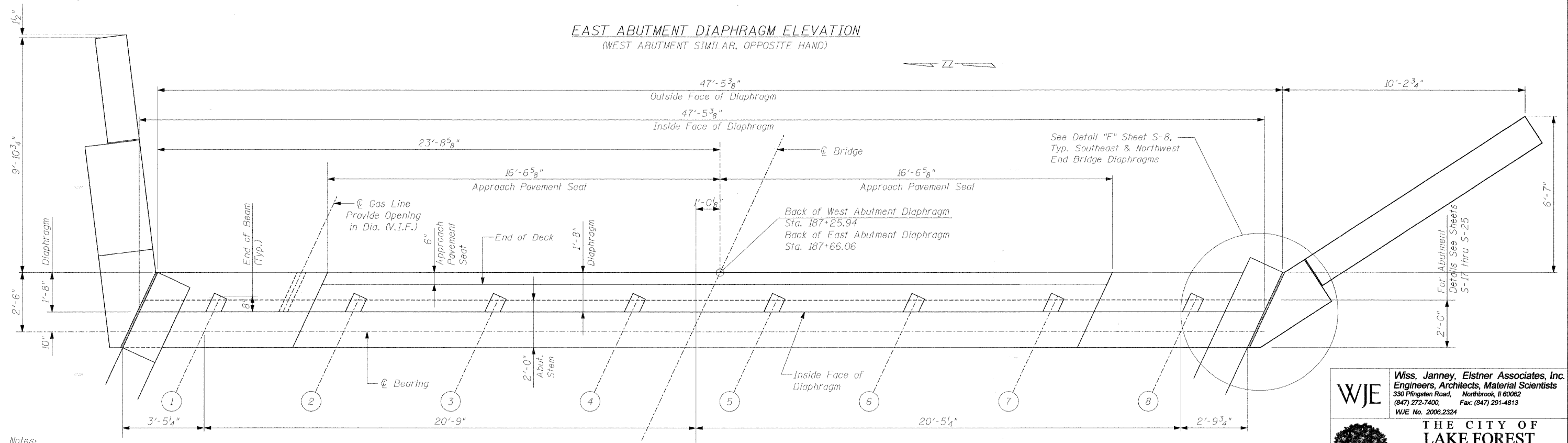
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DATE: 2/22/08
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F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
Sheet S-11 of S-29			63020	



EAST ABUTMENT DIAPHRAGM ELEVATION
(WEST ABUTMENT SIMILAR, OPPOSITE HAND)



EAST ABUTMENT DIAPHRAGM PLAN
(WEST ABUTMENT SIMILAR, OPPOSITE HAND)

Notes:
 Reinforcement bars in diaphragm are billed with superstructure on sheet S-12.
 Concrete in diaphragm is included with Concrete Superstructure on sheet S-12.
 For details of bars s13(E) & s14(E) see sheet S-12.
 The s13(E) and s14(E) bars shall be placed parallel to the beams. Spacing for these bars shall be at right angles to the beams.
 For anchor bolt details see sheet S-15 & S-16.
 See Section C-C sheet S-12.

MIN. BAR LAP
 #6 bar = 2'-9"

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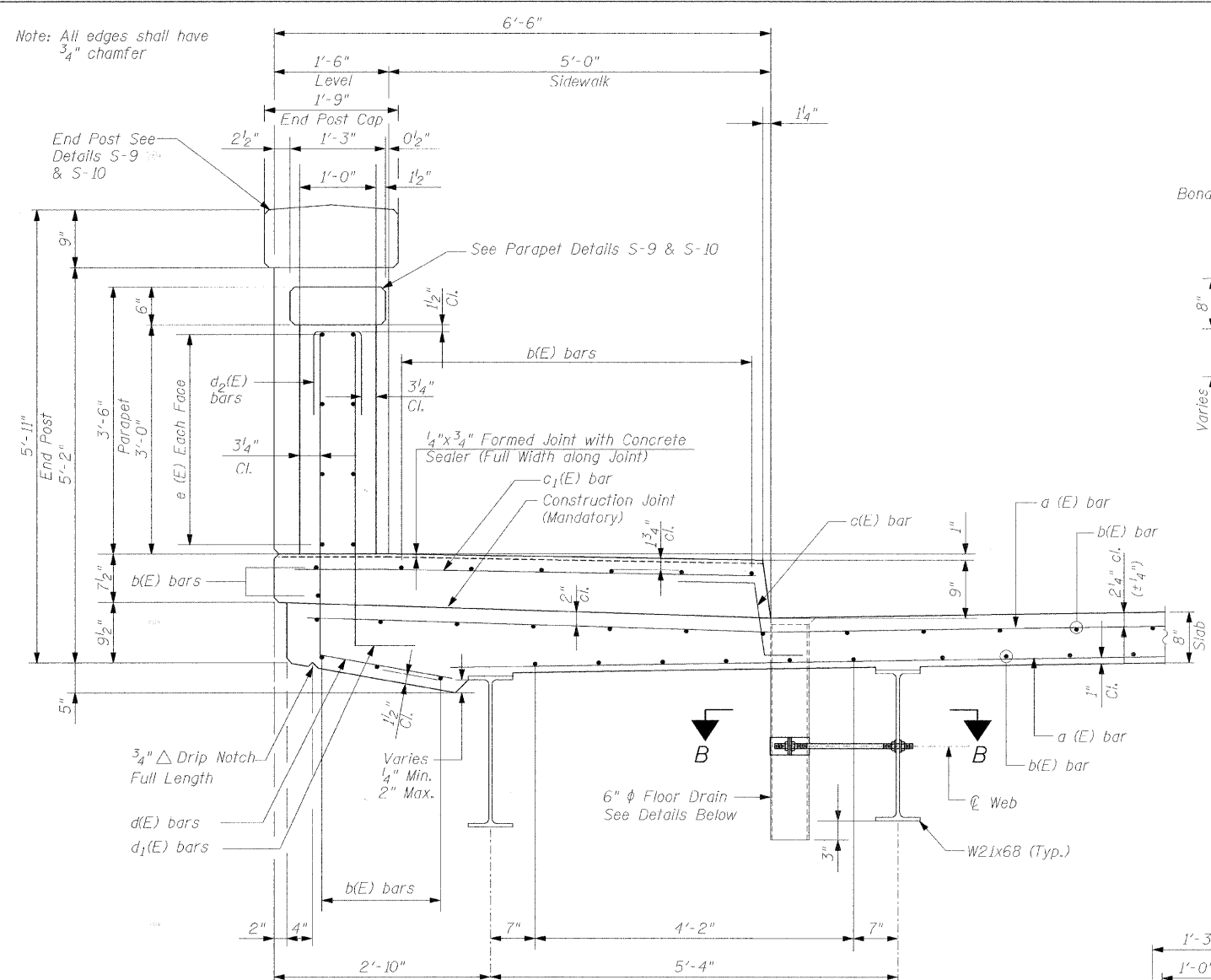
ILLINOIS DEPARTMENT OF TRANSPORTATION
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PROJECT:
OLD ELM ROAD OVER EAST SKOKIE DITCH
 STA. 187+46 LAKE COUNTY
 STRUCTURE NO. 049-6870

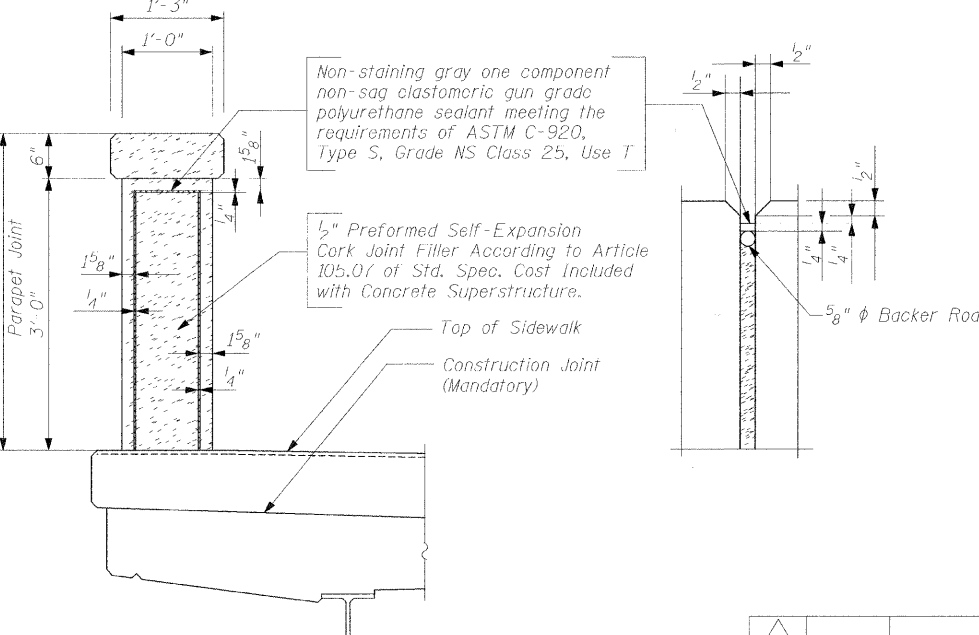
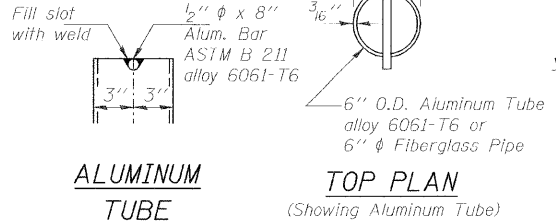
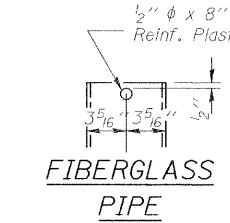
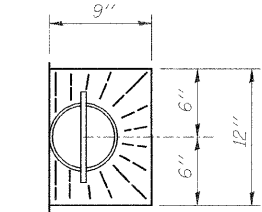
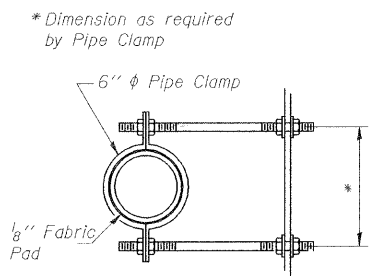
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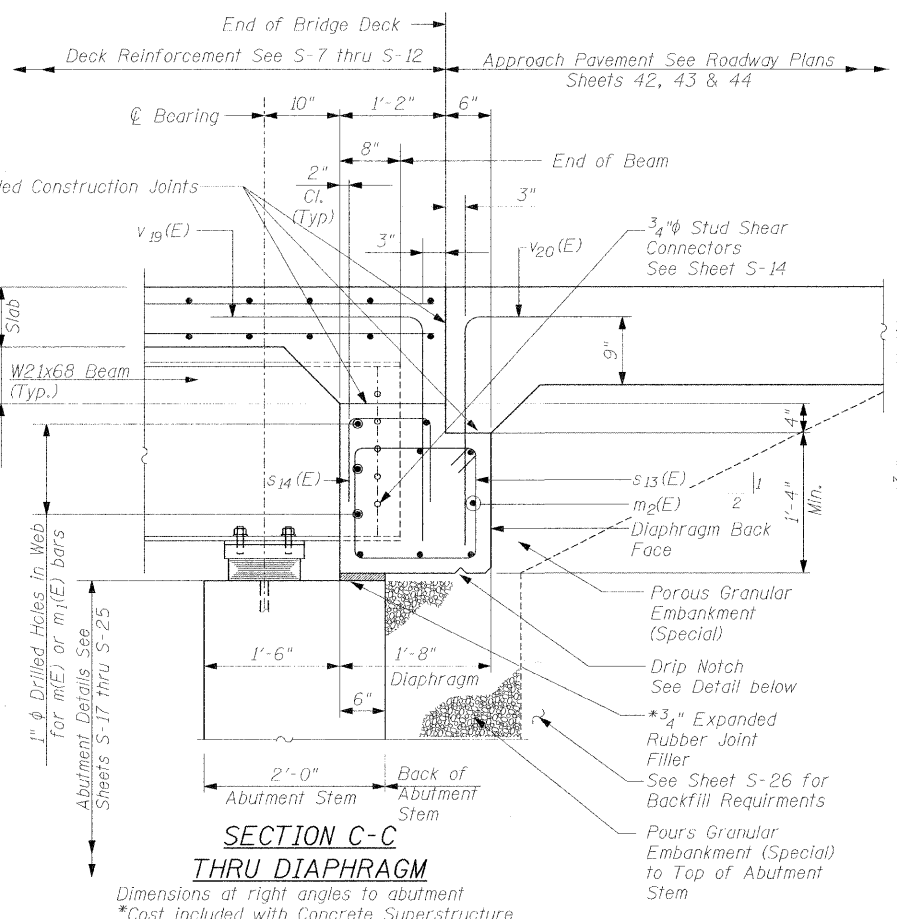
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PROPOSED CROSS SECTION
(Looking East)

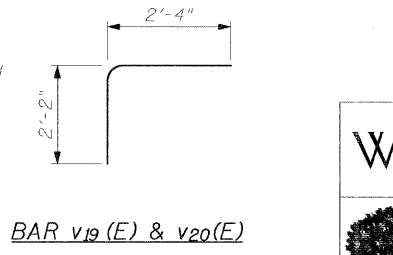
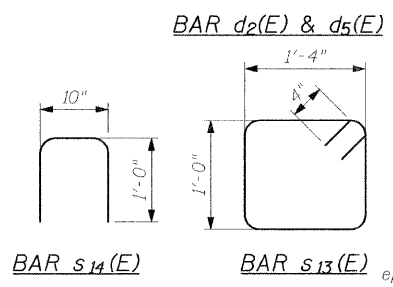
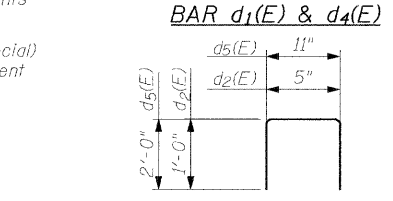
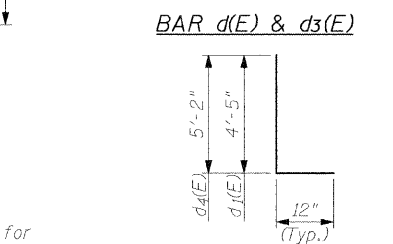
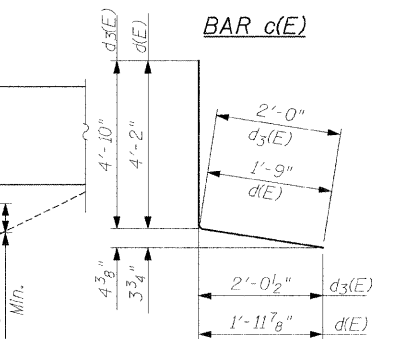
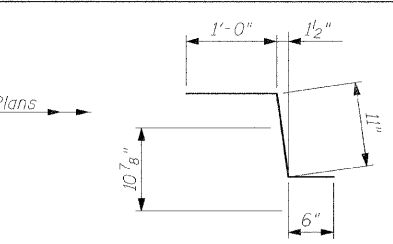


PARAPET JOINT DETAILS



SECTION C-C THRU DIAPHRAGM

Note: The Contractor shall install temporary blocking devices acceptable to the Engineer to prevent the superstructure from sliding during construction. Such devices are required at the lower end of each beam and shall be removed after construction is completed. The cost of the devices shall be included in cost of structural steel.



SUPERSTRUCTURE BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	56	#5	42'-5"	—
a1(E)	60	#5	43'-5"	—
a2(E)	16	#5	46'-6"	—
a3(E)	32	#5	2'-6"	—
b(E)	109	#5	38'-8"	—
c(E)	78	#5	2'-5"	┌
c1(E)	74	#5	6'-3"	—
c2(E)	6	#5	8'-0"	—
d(E)	66	#4	5'-11"	┌
d1(E)	66	#6	5'-5"	┌
d2(E)	66	#4	2'-5"	┌
d3(E)	16	#4	6'-10"	┌
d4(E)	16	#6	6'-2"	┌
d5(E)	16	#4	4'-11"	┌
e(E)	16	#4	32'-10"	—
e1(E)	40	#4	3'-3"	—
s13(E)	100	#4	5'-4"	┌
s14(E)	100	#4	2'-10"	┌
m(F)	12	#6	7'-4"	—
m1(E)	36	#6	8'-8"	—
m2(E)	14	#6	47'-0"	—
v19(E)	94	#6	4'-6"	┌
v20(E)	66	#5	4'-6"	┌
Reinforcement Bars, Epoxy Coated			Pound	15,590
Concrete Superstructure			Cu. Yds.	90

Reinforcement bars designated (E) shall be epoxy coated.

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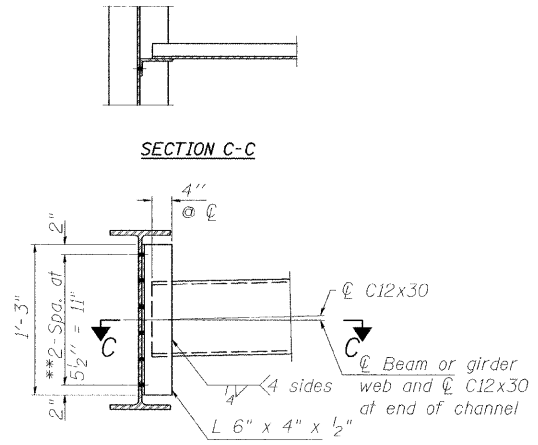
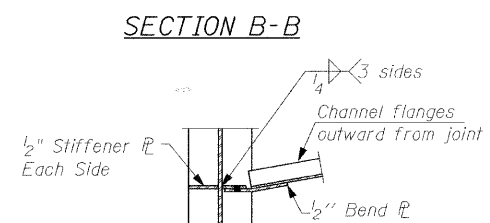
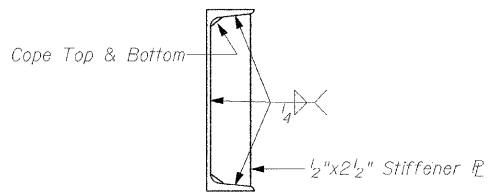
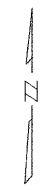
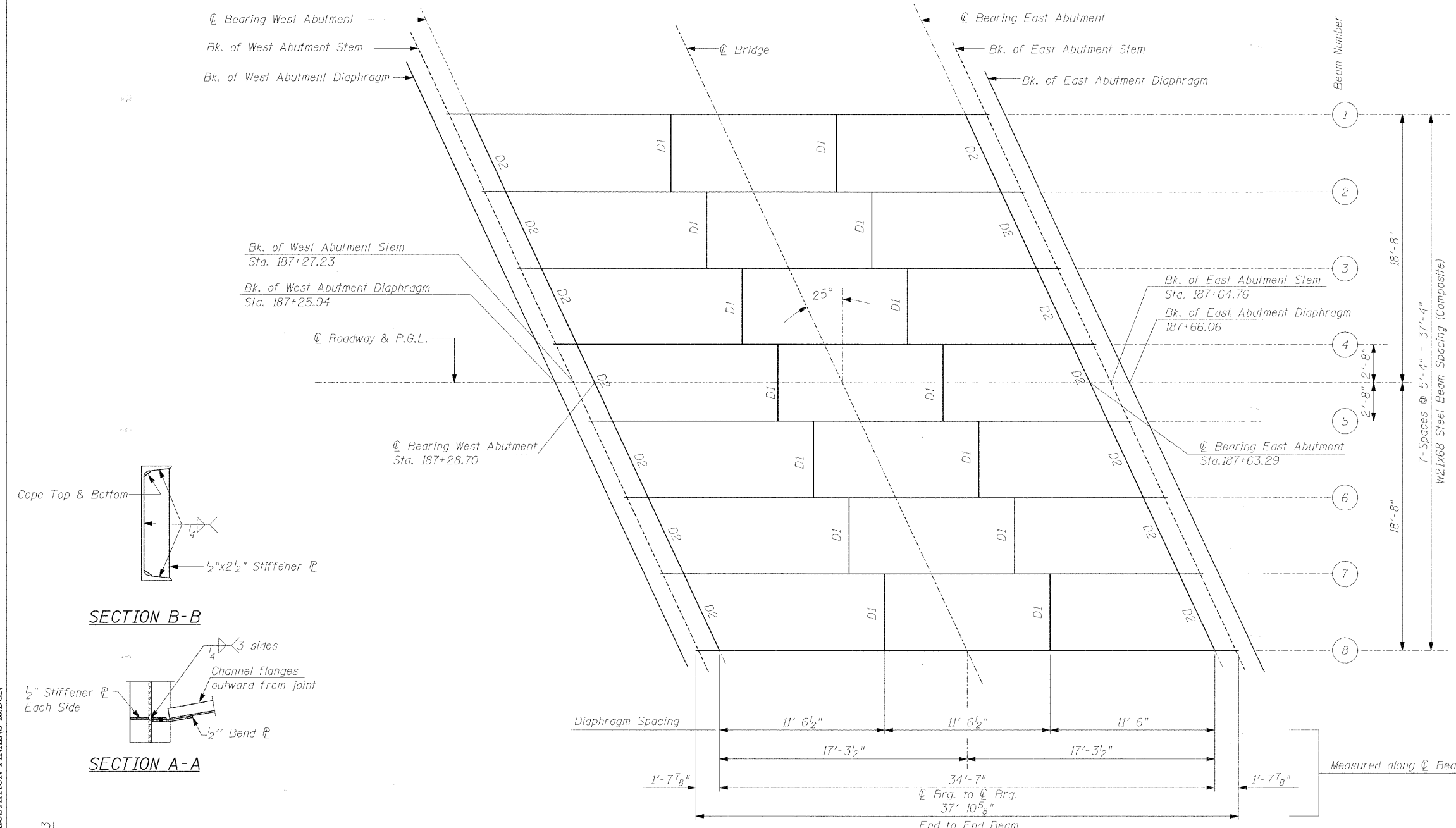
ILLINOIS DEPARTMENT OF TRANSPORTATION
BUREAU OF LOCAL ROADS AND STREETS

PROJECT: **OLD ELM ROAD OVER EAST SKOKIE DITCH**
STA. 187+46 LAKE COUNTY
STRUCTURE NO. 049-6870

TITLE: **SUPERSTRUCTURE DETAILS AND BILL OF MATERIAL**

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REV. NO.	DATE	REVISION RECORD	MADE BY	CHECKED BY	

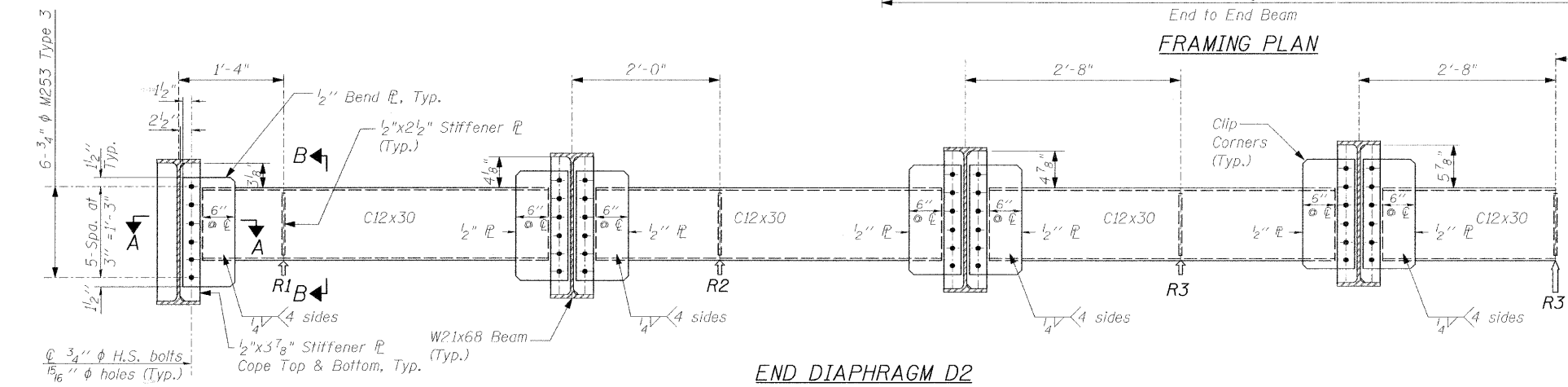
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DATE: JANUARY 2008 CHECKED BY: NSA



INTERIOR DIAPHRAGM D1
Note: 14 Required
Two hardened washers required for each set of oversized holes.

** 3/4" φ HS bolts, 15/16" φ holes

FRAMING PLAN
Measured along Centerline of Beam



Note:
Two hardened washers required for each set of oversized holes.

THEORETICAL JACKING LOADS (k) FOR FUTURE BEARING REPLACEMENT

Location	Total Dead Load
R1	44.3 k
R2	18.9 k
R3	15.5 k

Notes:
Total dead load does not include an allowance for possible future wearing surface.
Diaphragms assumed simply-supported between beams

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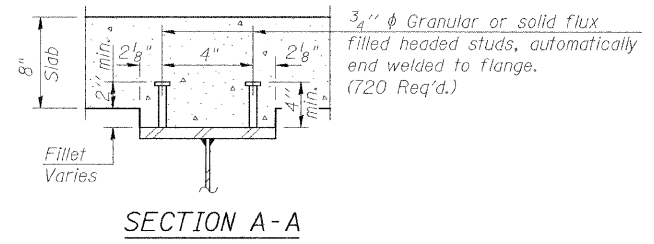
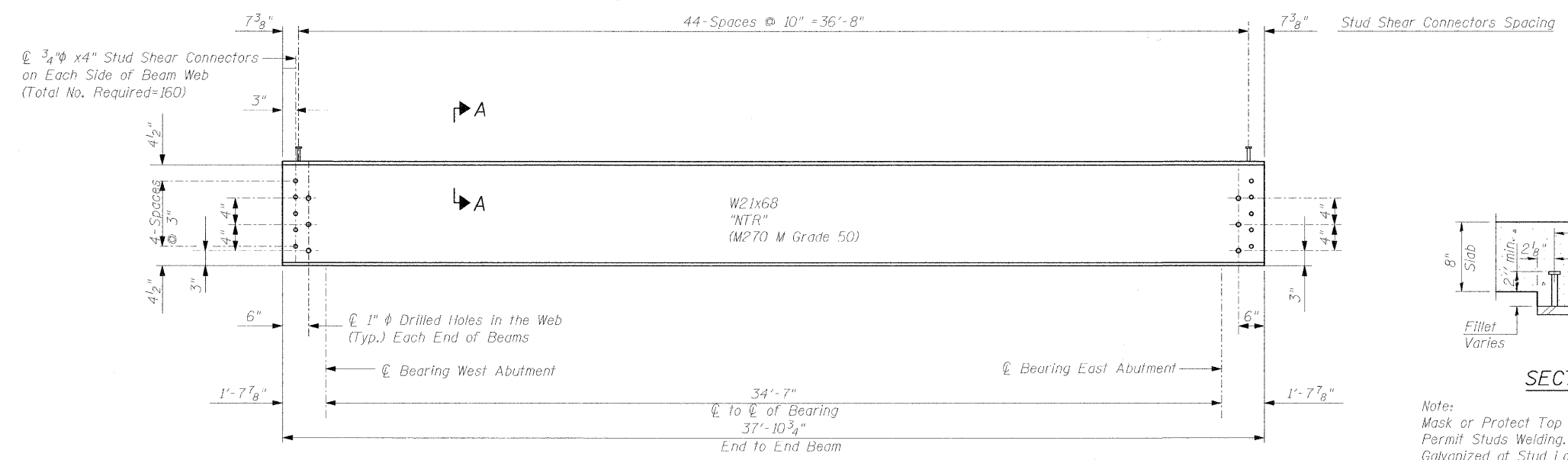
ILLINOIS DEPARTMENT OF TRANSPORTATION
BUREAU OF LOCAL ROADS AND STREETS

PROJECT:
OLD ELM ROAD OVER EAST SKOKIE DITCH
STA. 187+46 LAKE COUNTY
STRUCTURE NO. 049-6870

TITLE: **FRAMING PLAN**

SCALE: N.T.S. DRAWN BY: IMG
DATE: JANUARY 2008 CHECKED BY: NSA

DATE: 2/2/2008
FILENAME: P:\2006\2301-2400\2006.2324-NAnderson-Old Elm Design\MICROSTATION-FINAL\8-18.DGN



Note:
Mask or Protect Top Flange from Galvanizing to Permit Studs Welding. Alternate-Grid Galvanized at Stud Locations to Permit Stud Welding.

BEAM ELEVATION

"NTR" denotes elements to which notch toughness requirements are applicable.

Note:
All steel beams, plates, channels & anchors shall be galvanized after shop fabrication according to AASHTO M 111 or AASHTO M232 and ASTM A 385 and Standard Specification for Steel Hardware M234 except stainless steel bolts.

INTERIOR GIRDER MOMENT TABLE		
0.5 Span		
Is	(in ⁴)	1480
Ic (n)	(in ⁴)	4829
Ic (3n)	(in ⁴)	3617
Ss	(in ³)	140
Sc (n)	(in ³)	227
Sc (3n)	(in ³)	204
Z	(in ³)	160
DC1	(k/')	0.61
M DC1	(k)	91.2
DC2	(k/')	0.41
M DC2	(k)	61.3
DW	(k/')	0.27
M DW	(k)	40.4
M 1/4 Imp	(k)	36.4
Mu (Strength I)	(k)	888
φf Mn, φr Mnc	(k)	1258
fs DC1	(ksi)	7.8
fs DC2	(ksi)	3.6
fs DW	(ksi)	2.4
fs 1.3(1/4+I)	(ksi)	25.0
fs (Service II)	(ksi)	38.8
fs (Total)(Strength I)	(ksi)	51.5
Vf	(k)	51.4

INTERIOR GIRDER REACTION TABLE		
HL93 Loading		
Abutment		
R DC1	(k)	10.7
R DC2	(k)	7.0
R DW	(k)	4.7
R 1/4 Imp	(k)	55.5
R Total	(k)	77.9

Is and Ss are the moment of inertia and section modulus of the steel section used in computing fs due to non-composite loads.
Ic(n) and Sc(n) are the moment of inertia and section modulus of the composite section used in computing fs due to short-term composite loads.
Ic(3n) and Sc(3n) are the moment of inertia and section modulus of the composite section used in computing fs due to long-term composite loads.
Z is the plastic section modulus used to determine the fully plastic moments in the non-composite areas.
DC1 is the dead load acting on the non-composite section.
DC2 is the dead load acting on the long-term composite section.
DW is the dead load acting on the long-term composite section due to wearing surface.
Mu (Strength I) = 1.25 M(DC1+DC2) + 1.5 M DW + 1.75 M(1/4+Imp)
φ Mn is the Compact positive moment capacity computed in accordance with 6.10.7.1.
fs (Service II) is the sum of the stresses due to DC1+DC2+DW+1.3(1/4+Imp)
fs (Total) (Strength I) (Non-Compact Section) is the sum of the stresses due to 1.25(DC1+DC2)+1.5DW+1.75(1/4+Imp)
Vf is the maximum shear range computed in accordance with Article 6.10.10

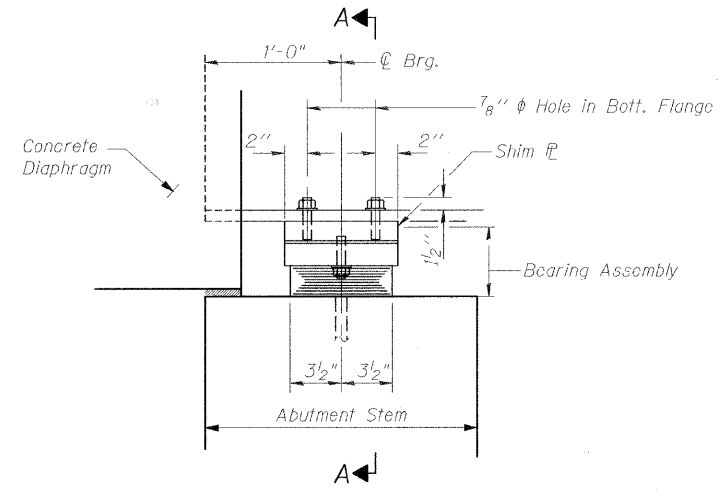
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THE CITY OF LAKE FOREST CHARTERED 1861	
ILLINOIS DEPARTMENT OF TRANSPORTATION BUREAU OF LOCAL ROADS AND STREETS	
PROJECT: OLD ELM ROAD OVER EAST SKOKIE DITCH STA. 187+46 LAKE COUNTY STRUCTURE NO. 049-6870	
TITLE: BEAM ELEVATION	
SCALE: N.T.S.	DRAWN BY: IMG
DATE: JANUARY 2008	CHECKED BY: NSA

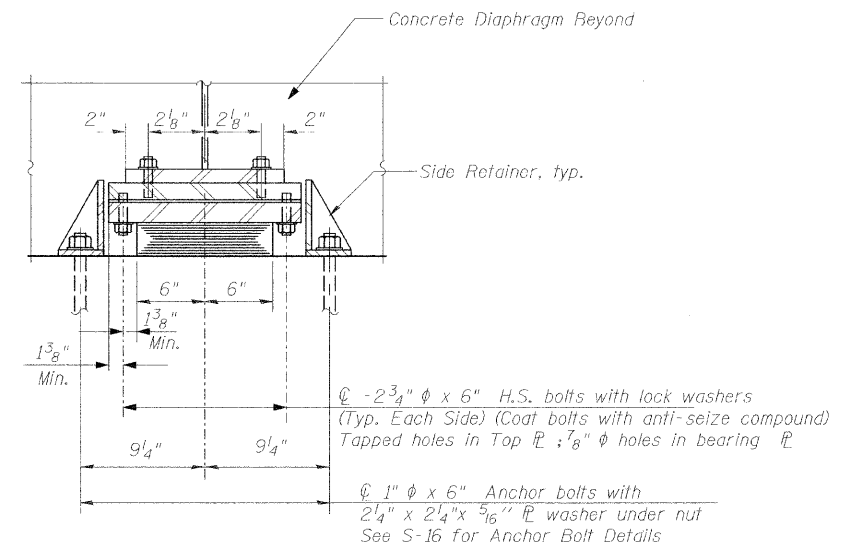
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F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1248	99-00080-00-BR	LAKE	46	27
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

Sheet S-15 of S-29 **63020**

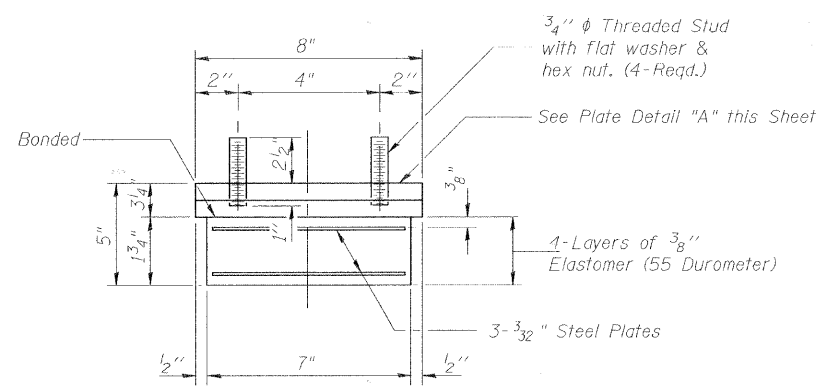


ELEVATION AT ABUT.



SECTION A-A

TYPE I ELASTOMERIC EXP. BRG.



BEARING ASSEMBLY

Note: Shim plates shall not be placed under Bearing Assembly.

Notes:

Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. ASTM A307 Grade C anchor bolts may be used in lieu of ASTM F1554 Grade 36 (Fy=36ksi). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.

Anchor bolts at fixed bearings may be either cast in place or installed in holes drilled after the supported member is in place.

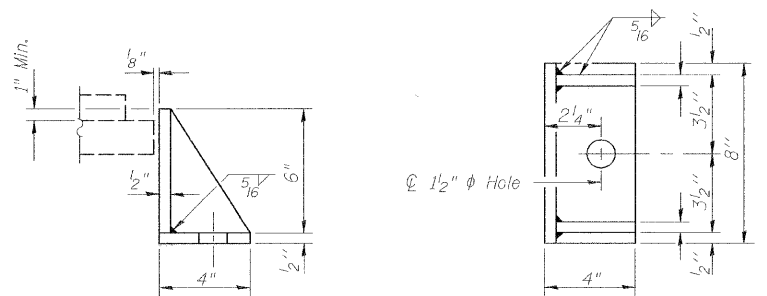
Anchor bolts for side retainers may be cast in place or installed in holes drilled before or after members are in place.

Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.

Side retainers and other steel members required for the bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type I.

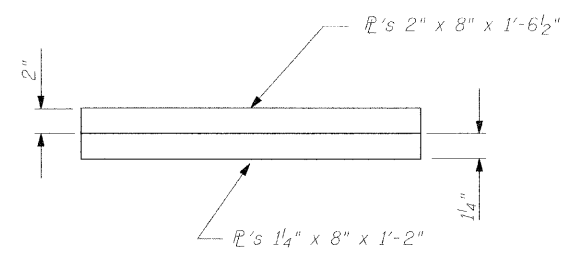
BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type I	Each	16
Anchor Bolts 1" ϕ	Each	32



SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.



PLATES DETAIL "A"

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WJE No. 2006.2324

THE CITY OF LAKE FOREST
CHARTERED 1861

ILLINOIS DEPARTMENT OF TRANSPORTATION
BUREAU OF LOCAL ROADS AND STREETS

PROJECT:
OLD ELM ROAD OVER EAST SKOKIE DITCH
STA. 187+46 LAKE COUNTY
STRUCTURE NO. 049-6870

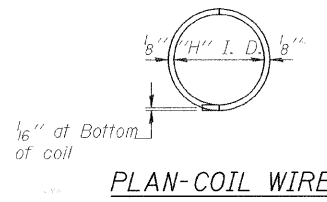
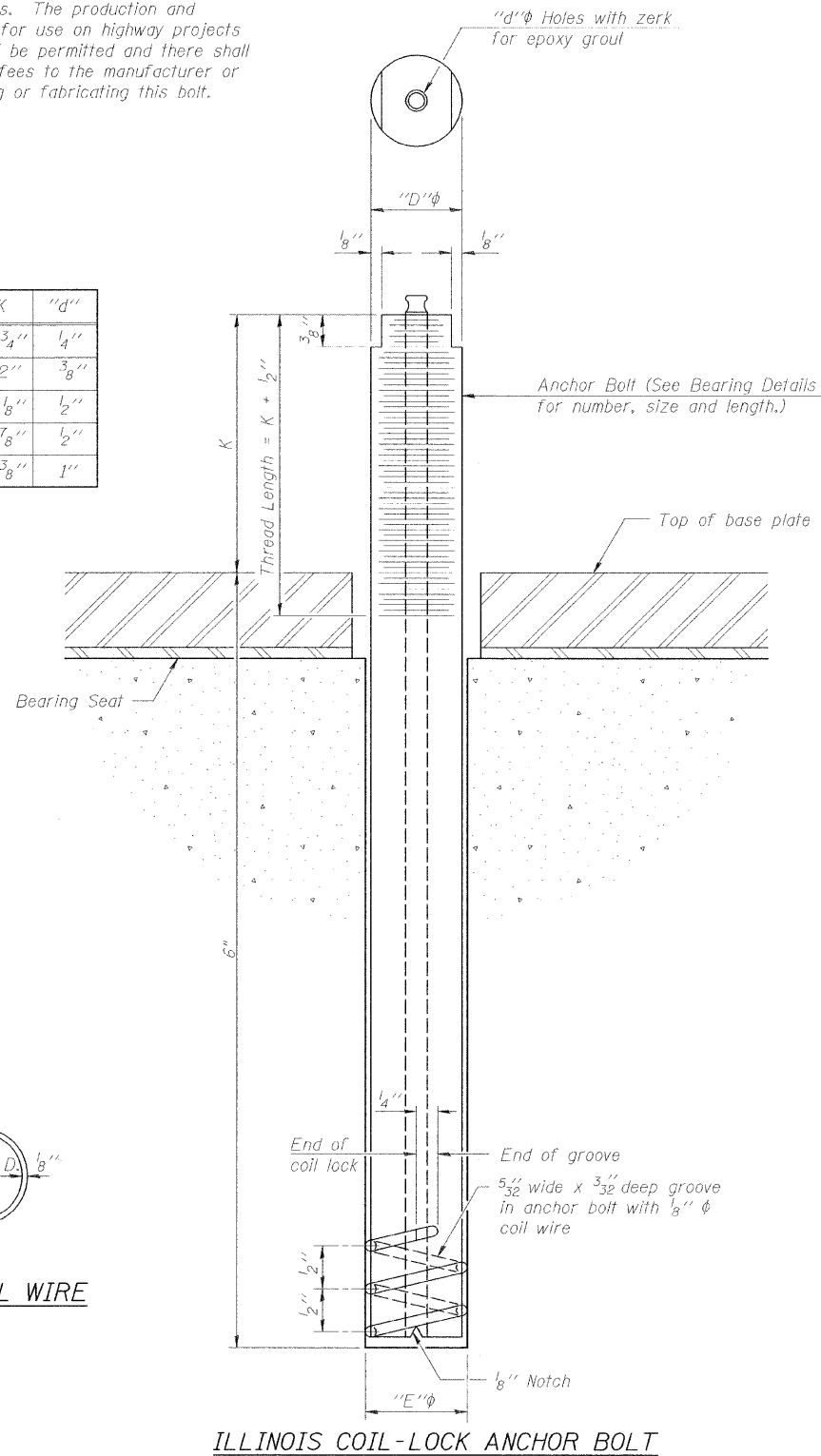
TITLE:
BEARING DETAILS

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					DATE: JANUARY 2008		

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The Illinois Coil-Lock Anchor Bolt is a proprietary item which is the property of the Illinois Department of Transportation. Use, reproduction or disclosure without express written permission is prohibited and protected under Federal copyright laws. The production and the fabrication of this bolt for use on highway projects in the State of Illinois shall be permitted and there shall be no incurred charges or fees to the manufacturer or the fabricator for producing or fabricating this bolt.

D	E	H	K	"d"
1"	1 1/8"	1 3/16"	1 3/4"	1/4"
1 1/4"	1 3/8"	1 1/16"	2"	3/8"
1 1/2"	1 5/8"	1 5/16"	2 1/8"	1/2"
2"	2 1/8"	1 3/16"	2 7/8"	1/2"
2 1/2"	2 5/8"	2 5/16"	3 3/8"	1"



MATERIALS FOR ILLINOIS COIL-LOCK ANCHOR BOLT

The anchor bolt shall be fabricated from cold drawn or hot finished seamless carbon steel mechanical tubing conforming to ASTM A 519, Grade 1026, CW and supplied with hexagonal nuts and cut washers.
 The coil wire shall be made of any suitable soft steel wire.
 The finished anchor bolt shall be cleaned of rust and other foreign materials and wrapped or packaged to prevent contamination until they are installed.
 The epoxy grout shall be a two-component, epoxy resin bonding system conforming to ASTM C 881, Type I, Grade 1 and of a Class suitable for the temperature at installation.

INSTALLATION PROCEDURE for the ILLINOIS COIL-LOCK ANCHOR BOLT

1. With the coil wire in place, the bolt shall be inserted into the hole and turned clockwise to a snug fit in the hole. Nut and washer shall be placed on the bolt. The nut shall be tensioned until the steel base plates are held securely to the concrete bearing seat.
2. Epoxy grout shall be pumped through the zerk fitting with a pressure gun. Pumping shall continue until the epoxy overflows the hole around the bolt shank. After pumping is discontinued, excess epoxy shall be immediately wiped off.

ALTERNATE ANCHOR BOLTS

The Contractor may use, at his option, the capsule or the adhesive cartridge type anchor rods that have been previously tested and given a prior approval by the Department. The Contractor shall install these anchor rods in pre-drilled holes according to the manufacturer's recommendations and procedures.
 The capsule or the adhesive cartridge type anchor rods shall be a two part system composed of:

1. A threaded rod stud with nut and washer of the type specified.
2. A sealed glass capsule or a sealed glass adhesive cartridge containing premeasured amounts of the adhesive chemical.

Location	Type

ASTM F 1554 Grade 105, ASTM A 449 and AASHTO M 314 Grade 105 anchor bolts may be substituted for the anchor bolts shown above.

GENERAL NOTES

Holes in the masonry for anchor bolts shall be drilled through the base plates to the diameter and depth shown or according to the manufacturer's recommendation after beams or girders have been erected and adjusted.
 Prior to setting the bolts, the holes shall be dry and all dust and loose particles shall be removed by the use of compressed air or vacuuming.
 The anchor bolts, furnished and installed and including the epoxy grout or capsules shall not be paid for separately but shall be included in the unit bid price for Furnishing and Erecting Structural Steel.

ANCHOR BOLT DETAILS FOR BEARINGS

WJE **Wiss, Janney, Elstner Associates, Inc.**
 Engineers, Architects, Material Scientists
 330 Pfingsten Road, Northbrook, IL 60062
 (847) 272-7400, Fax: (847) 291-4813
 WJE No. 2006.2324

THE CITY OF LAKE FOREST
 CHARTERED 1861

ILLINOIS DEPARTMENT OF TRANSPORTATION
 BUREAU OF LOCAL ROADS AND STREETS

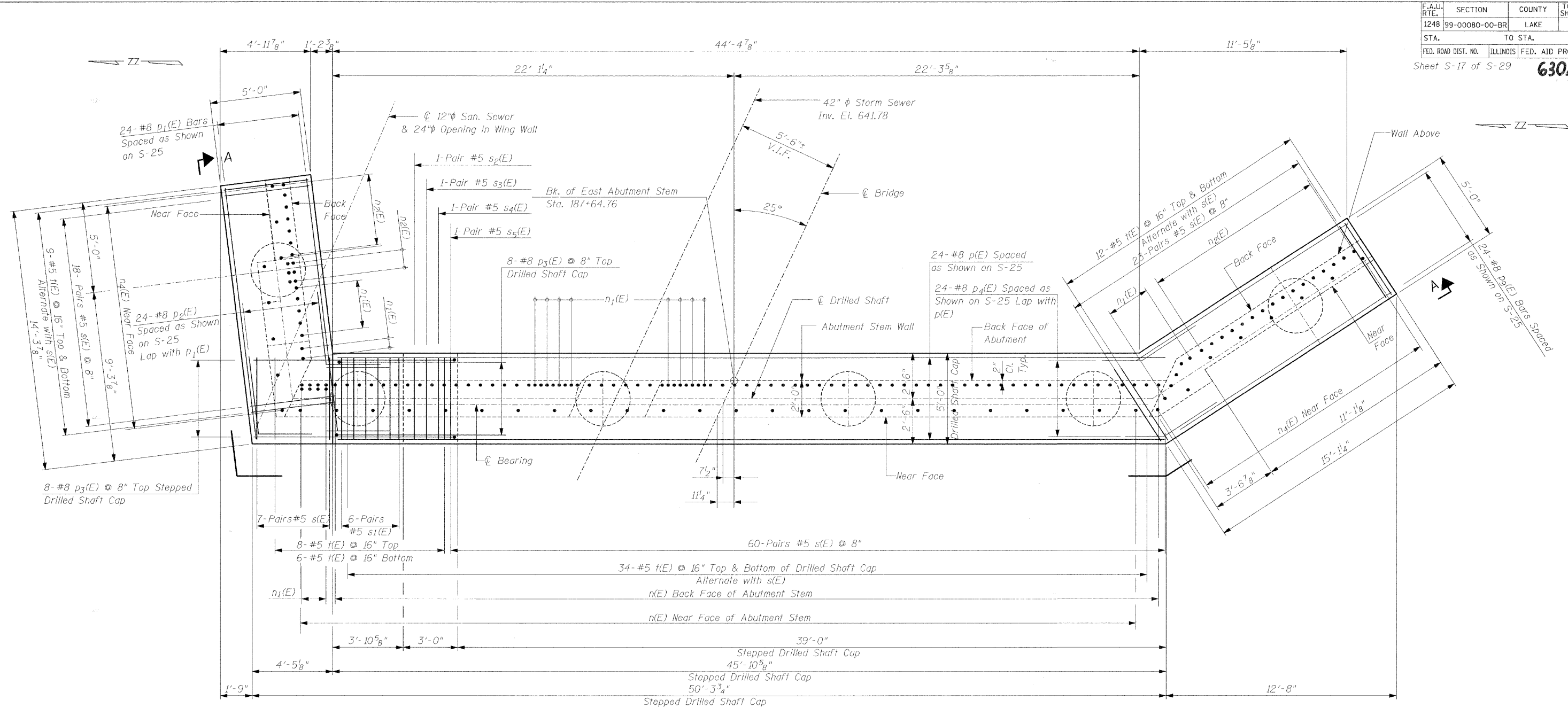
PROJECT:
OLD ELM ROAD OVER EAST SKOKIE DITCH
 STA. 187+46 LAKE COUNTY
 STRUCTURE NO. 049-6870

TITLE:
ANCHOR BOLT DETAILS FOR BEARINGS

SCALE: N.T.S. DRAWN BY: IMG
 DATE: JANUARY 2008 CHECKED BY: NSA

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EAST ABUTMENT DRILLED SHAFT CAP PLAN

Notes:
 Reinforcement bars designated (E) shall be epoxy coated.
 See S-19 for East Abutment Stem Wall Elevation A-A
 See S-26 for Bill of Material and Pipe Underdrain Details.

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					DRAWN BY: IMG CHECKED BY: NSA

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 Engineers, Architects, Material Scientists
 330 Pfingsten Road, Northbrook, IL 60062
 (847) 272-7400, Fax: (847) 291-4813
 WJE No. 2006.2324

THE CITY OF LAKE FOREST
 CHARTERED 1861

ILLINOIS DEPARTMENT OF TRANSPORTATION
 BUREAU OF LOCAL ROADS AND STREETS

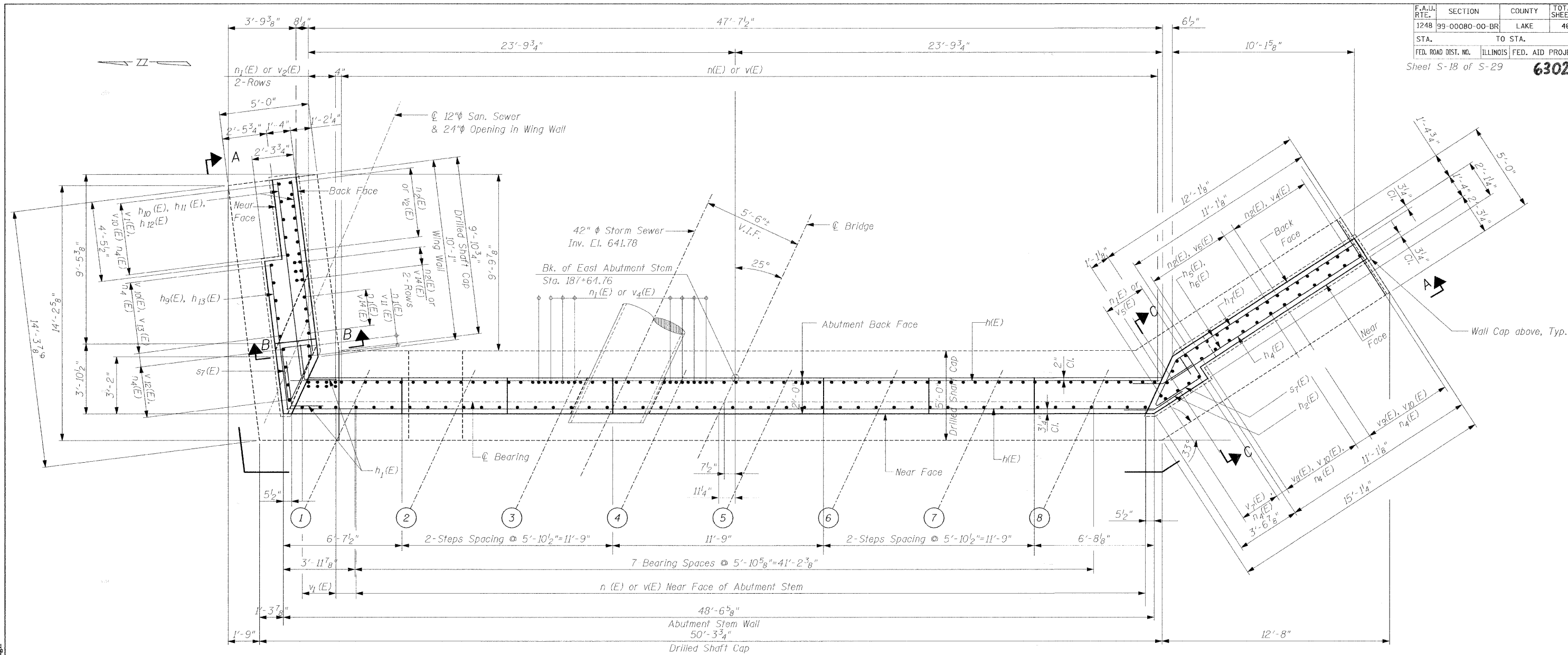
PROJECT:
OLD ELM ROAD OVER EAST SKOKIE DITCH
 STA. 187+46 LAKE COUNTY
 STRUCTURE NO. 049-6870

TITLE:
EAST ABUTMENT DRILLED SHAFT CAP PLAN

DATE: 9/29/08
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F.A.J. R.T.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1248	99-00080-00-BR	LAKE	46	30
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

Sheet S-18 of S-29 **63020**



EAST ABUTMENT STEM WALL PLAN

Notes:
 Space reinforcement in top of abutment wall to miss anchor bolts.
 Reinforcement bars designated (E) shall be epoxy coated.
 Pour steps monolithically with abutment stem
 See S-19 for Section A-A
 See S-20 for Section B-B & C-C.
 See S-26 for Bill of Material and Pipe Underdrain Details.

WJE **Wiss, Janney, Elstner Associates, Inc.**
 Engineers, Architects, Material Scientists
 330 Pfingsten Road, Northbrook, IL 60062
 (847) 272-7400, Fax: (847) 291-4813
 WJE No. 2006.2324

THE CITY OF LAKE FOREST
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 BUREAU OF LOCAL ROADS AND STREETS

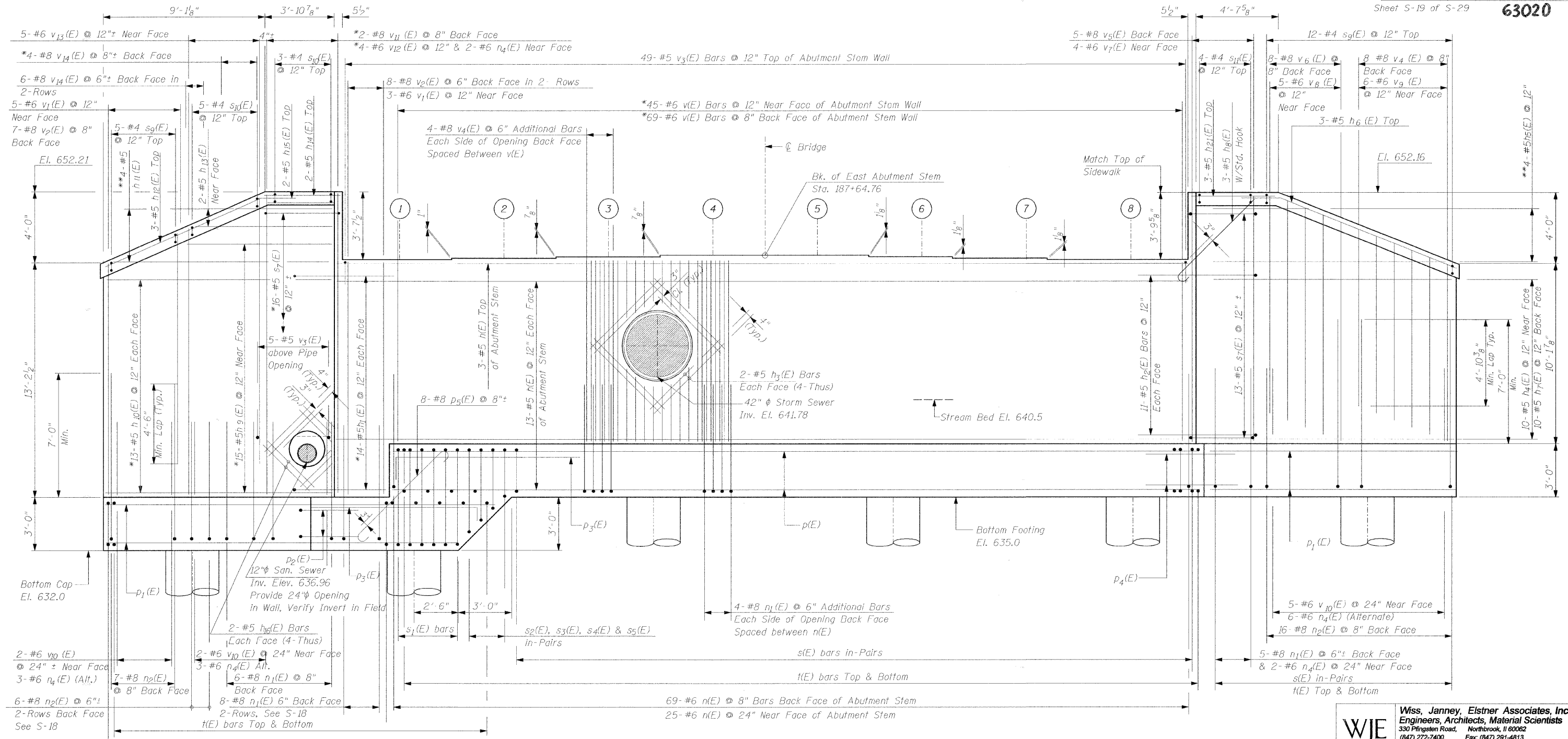
PROJECT:
OLD ELM ROAD OVER EAST SKOKIE DITCH
 STA. 187+46 LAKE COUNTY
 STRUCTURE NO. 049-6870

TITLE:
EAST ABUTMENT STEM WALL PLAN

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SCALE: N.T.S. DRAWN BY: IMG
 DATE: JANUARY 2008 CHECKED BY: NSA

DATE: 9/2/2008 FILENAME: p:\2006\2301-2400\2006.2324-manderson-old elm design\microstation-final\9-18.dgn



EAST ABUTMENT STEM WALL ELEVATION A-A

Notes:
 *Field cut bars to clear pipe opening.
 ** Order Full Length, Field Cut to Fit Skew and use Remainder of Bars in Opposite Face.
 Space reinforcement in top of abutment wall to miss anchor bolts.
 Reinforcement bars designated (E) shall be epoxy coated.
 Four steps monolithically with abutment stem
 See S-26 for Bill of Material and Pipe Underdrain Typ.
 Lap all v₁₀(E), n(E), n₁(E), n₂(E) & n₄(E) Bars with vertical Bars.

BEARING SEAT ELEVATION

Beam No.	Elevation
1	648.42
2	648.50
3	648.57
*** 4	648.64
.5	648.64
6	648.54
7	648.45
8	648.36

***Provide 1/8" Shim Plate

WJE Wiss, Janney, Elstner Associates, Inc.
 Engineers, Architects, Material Scientists
 330 Pfingsten Road, Northbrook, IL 60062
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 WJE No. 2006.2324

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ILLINOIS DEPARTMENT OF TRANSPORTATION
 BUREAU OF LOCAL ROADS AND STREETS
 PROJECT:
OLD ELM ROAD OVER EAST SKOKIE DITCH
 STA. 187+46 LAKE COUNTY
 STRUCTURE NO. 049-6870

TITLE:
EAST ABUTMENT ELEVATION

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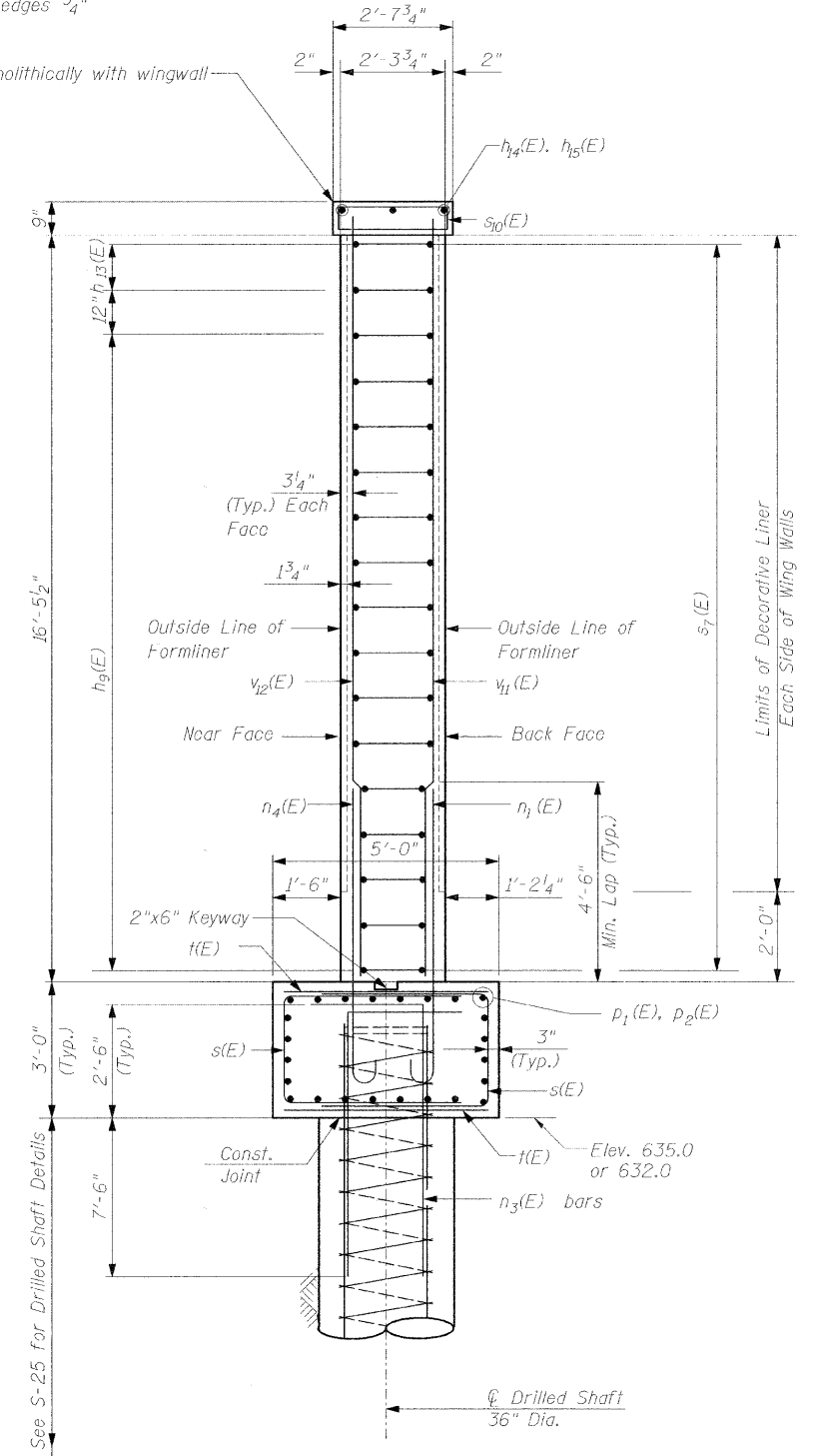
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 DATE: JANUARY 2008 CHECKED BY: NSA

DATE: 2/2/2008 FILENAME: p:\2006\2301-2400\2006.2324-manderson-old elm design\microstation-final\p-19.dgn

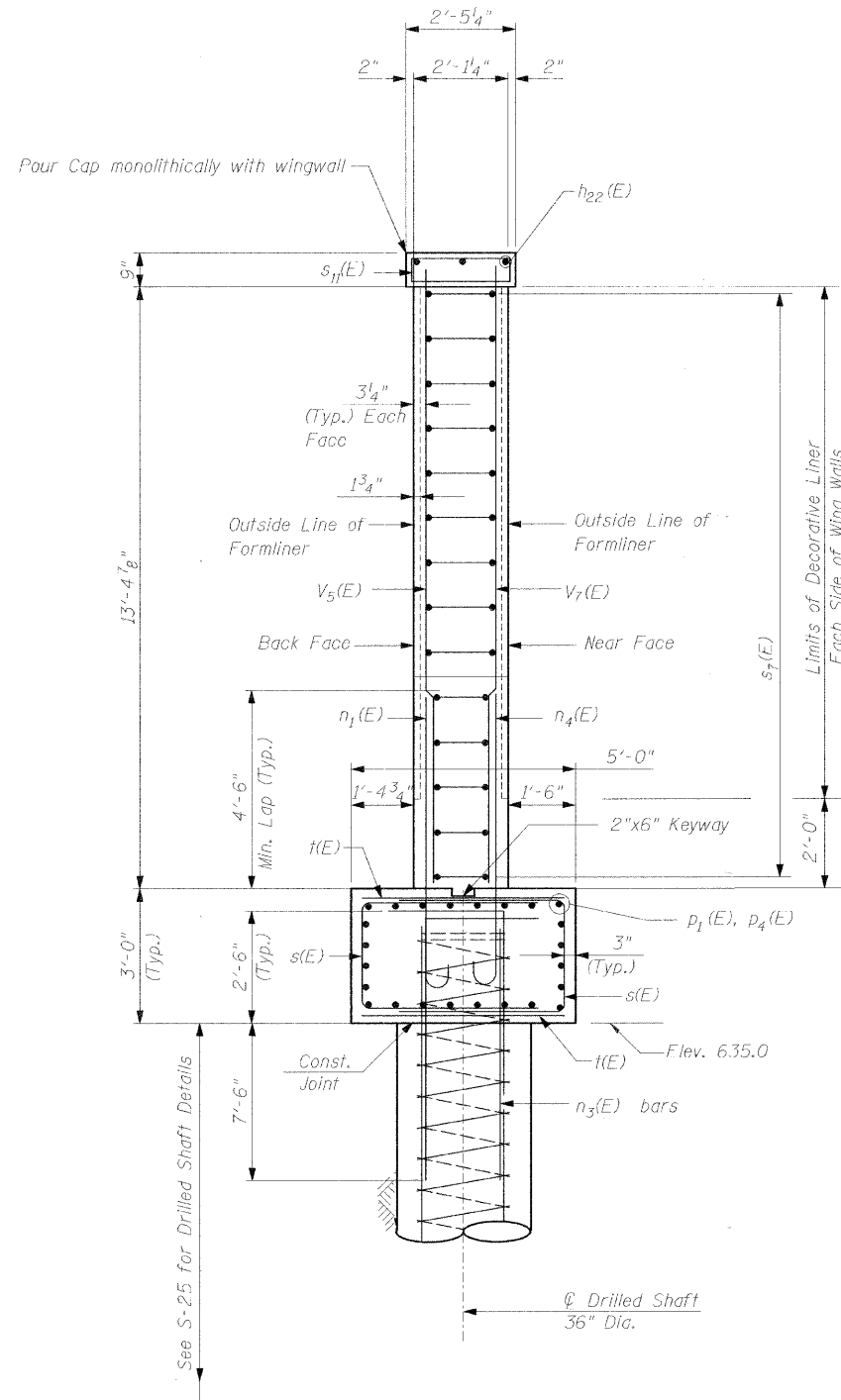
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1248	99-00080-00-BR	LAKE	46	32
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

Sheet S-20 of S-29 **63020**

Note:
Chamfer all exposed edges $\frac{3}{4}$ "



SECTION B-B
Showing Reinforcement



SECTION C-C
Showing Reinforcement

EAST ABUTMENT

Notes:
See S-18 for Location of Section B-B and Section C-C.
See S-26 for Detail of Material & Pipe Underdrain Details.
Provide Shear Key in Top of Caisson Cap and Roughen Surface to $\frac{1}{4}$ " Amplitude at Locations where Concrete will be Placed for the Abutment and Wingwall.

DATE: 9/7/2008
FILENAME: p:\2006\2301-2400\2006.2324-manderson-old elm design\microstation-final\e-20.dgn

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Engineers, Architects, Material Scientists
330 Pingston Road, Northbrook, IL 60062
(847) 272-7400, Fax: (847) 291-4813
WJE No. 2006.2324

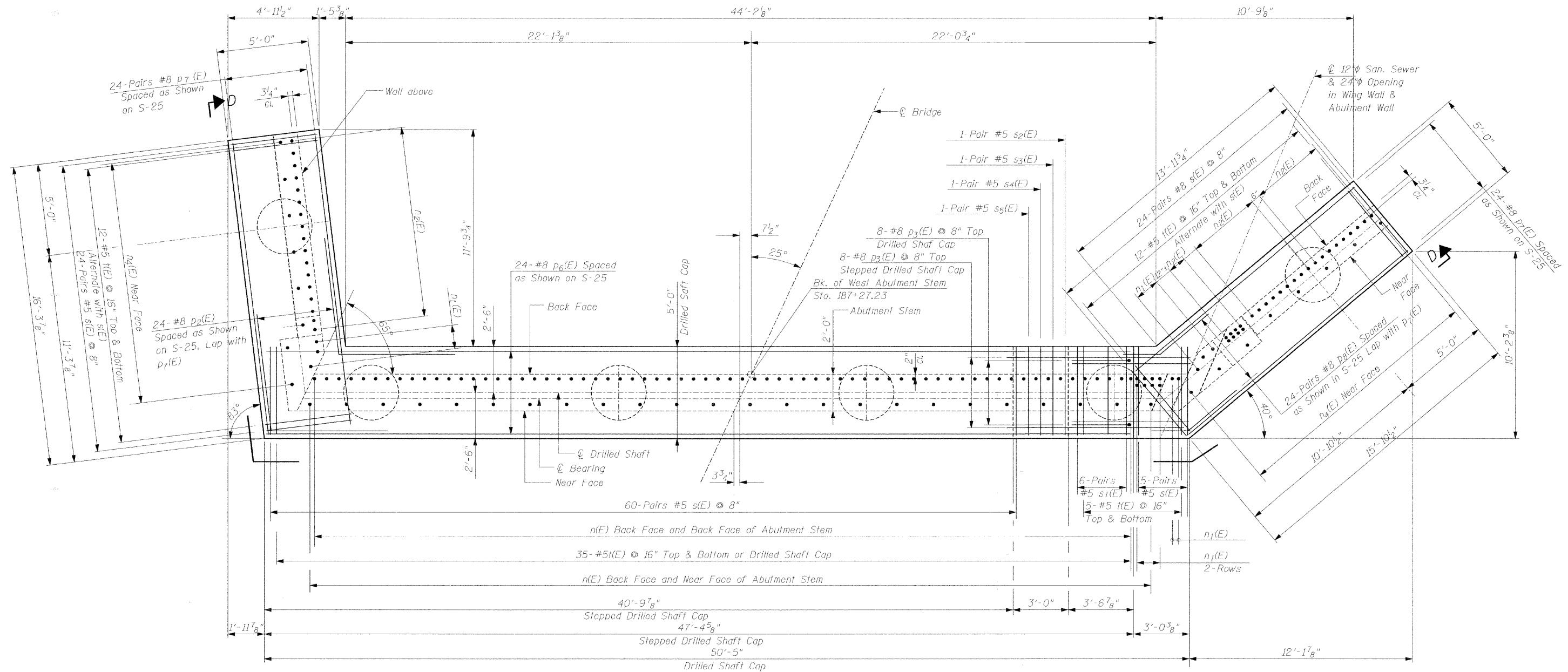
THE CITY OF LAKE FOREST
CHARTERED 1861

ILLINOIS DEPARTMENT OF TRANSPORTATION
BUREAU OF LOCAL ROADS AND STREETS

PROJECT:
OLD ELM ROAD OVER EAST SKOKIE DITCH
STA. 187+46 LAKE COUNTY
STRUCTURE NO. 049-6870

TITLE:
EAST ABUTMENT & WINGWALL DETAILS

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SCALE: N.T.S.			DRAWN BY: IMG		
DATE: JANUARY 2008			CHECKED BY: NSA		



WEST ABUTMENT DRILLED SHAFT CAP PLAN

Notes:
 Reinforcement bars designated (E) shall be epoxy coated.
 See S-23 for West Abutment Stem Wall Elevation D-D.
 See S-26 for Bill of Material & Pipe Underdrain Details.

DATE: 9/2/2008
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 WJE No. 2006.2324

THE CITY OF LAKE FOREST
 CHARTERED 1861

ILLINOIS DEPARTMENT OF TRANSPORTATION
 BUREAU OF LOCAL ROADS AND STREETS

PROJECT:
OLD ELM ROAD OVER EAST SKOKIE DITCH
 STA. 187+46 LAKE COUNTY
 STRUCTURE NO. 049-6870

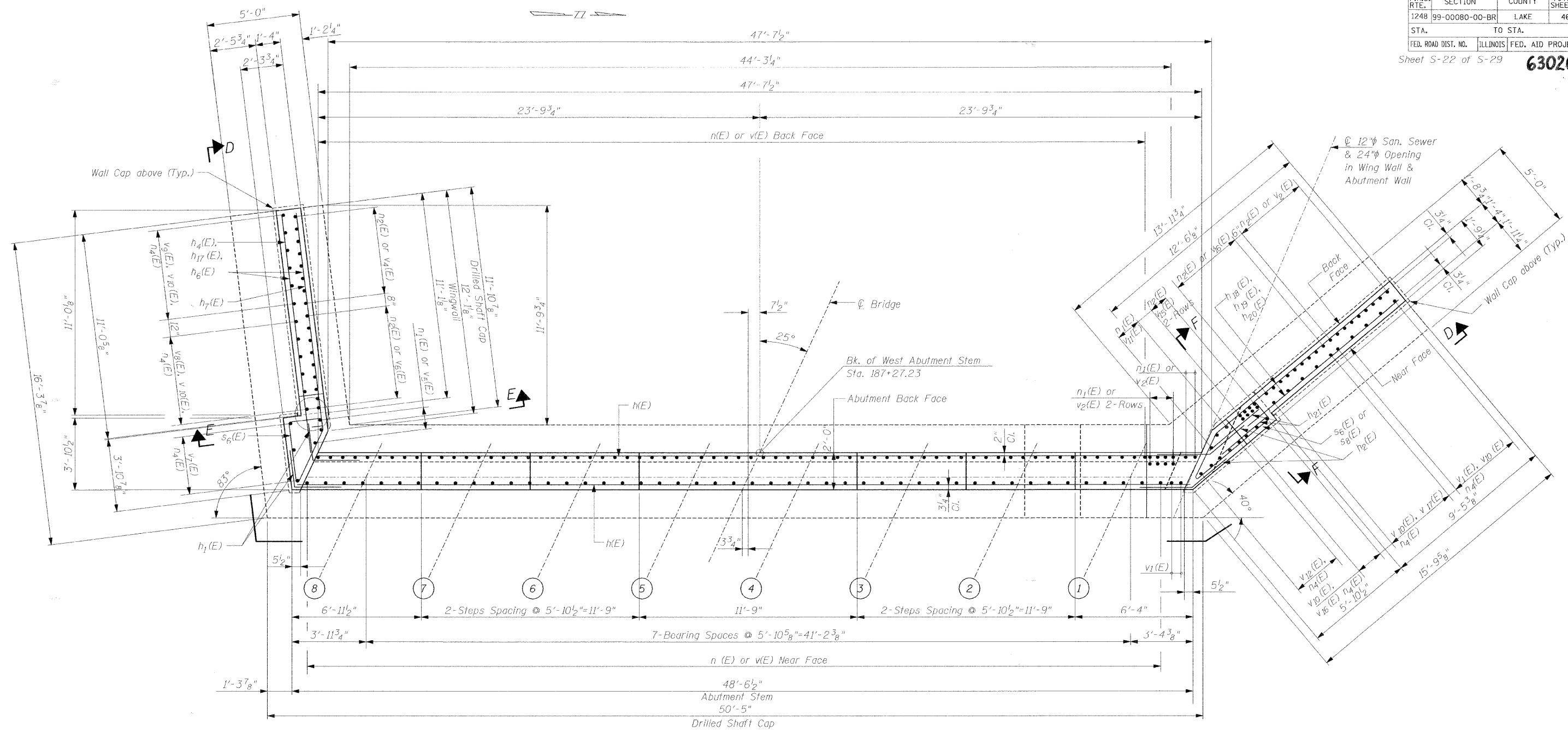
TITLE:
WEST ABUTMENT DRILLED SHAFT CAP PLAN

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SCALE: N.T.S. DRAWN BY: IMG
 DATE: JANUARY 2008 CHECKED BY: NSA

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1248	99-00080-00-BR	LAKE	46	34
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

Sheet S-22 of S-29 **63020**



WEST ABUTMENT PLAN

Notes:
 Space reinforcement in top of abutment wall to miss anchor bolts.
 Reinforcement bars designated (E) shall be epoxy coated.
 Pour steps monolithically with abutment stem
 See S-23 for Section D-D
 See S-24 for Section E-E & F-F
 See S-26 for Bill of Material and Pipe Underdrain Details.

REV. NO.	DATE	REVISION RECORD	MADE BY	CHECKED BY
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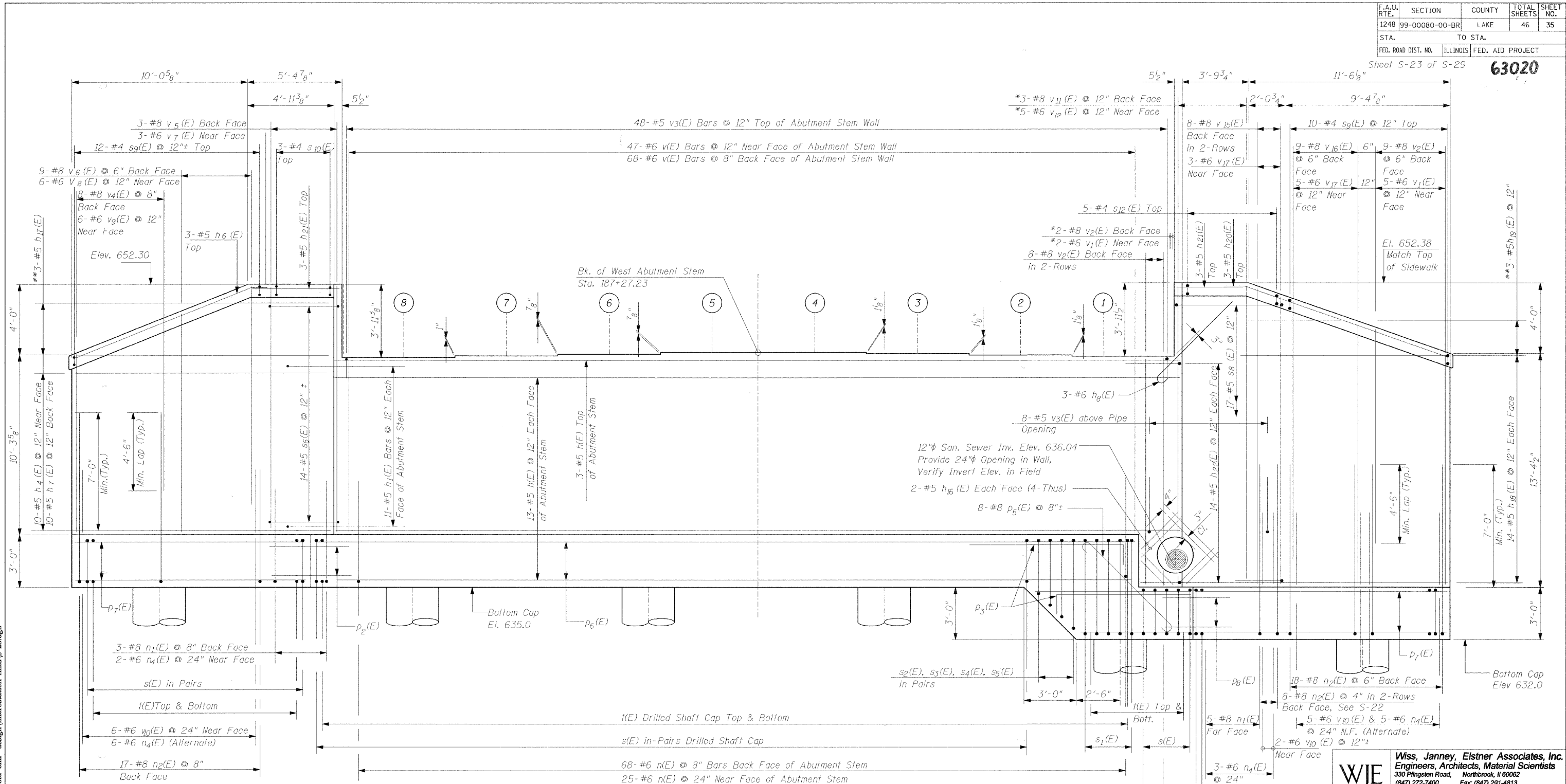
ILLINOIS DEPARTMENT OF TRANSPORTATION
 BUREAU OF LOCAL ROADS AND STREETS

PROJECT:
OLD ELM ROAD OVER EAST SKOKIE DITCH
 STA. 187+46 LAKE COUNTY
 STRUCTURE NO. 049-6870

TITLE:
WEST ABUTMENT STEM WALL PLAN

SCALE: N.T.S. DRAWN BY: IMG
 DATE: JANUARY 2008 CHECKED BY: NSA

DATE: 2/2/2008 FILENAME: p:\2006\2301-2400\2006.2324-anderson-old elm design\microstation-final\p-22.dgn



BEARING SEAT ELEVATION

Beam No.	Elevation
1	648.42
2	648.50
3	648.57
*** 4	648.64
5	648.64
6	648.54
7	648.45
8	648.36

***Provide 1/8" Shim Plate

WEST ABUTMENT STEM WALL ELEVATION D-D

Notes:
 *Field cut bars to clear pipe opening.
 ** Order Full Length, Field Cut to Fit Skew and use Remainder of Bars in Opposite Face.
 Space reinforcement in top of abutment wall to miss anchor bolts.
 Reinforcement bars designated (E) shall be epoxy coated.
 Pour steps monolithically with abutment stem
 See S-26 For Bill of Material and Pipe Underdrain Details.
 Lap all v₁₀(E), n(E), n₁(E), n₂(E) & n₄(E) Bars with vertical Bars.

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 (847) 272-7400, Fax: (847) 291-4813
 WJE No. 2006.2324

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 CHARTERED 1861

ILLINOIS DEPARTMENT OF TRANSPORTATION
 BUREAU OF LOCAL ROADS AND STREETS

PROJECT:
OLD ELM ROAD OVER EAST SKOKIE DITCH
 STA. 187+46 LAKE COUNTY
 STRUCTURE NO. 049-6870

TITLE:
WEST ABUTMENT STEM WALL ELEVATION

SCALE: N.T.S. DRAWN BY: IMG
 DATE: JANUARY 2006 CHECKED BY: NSA

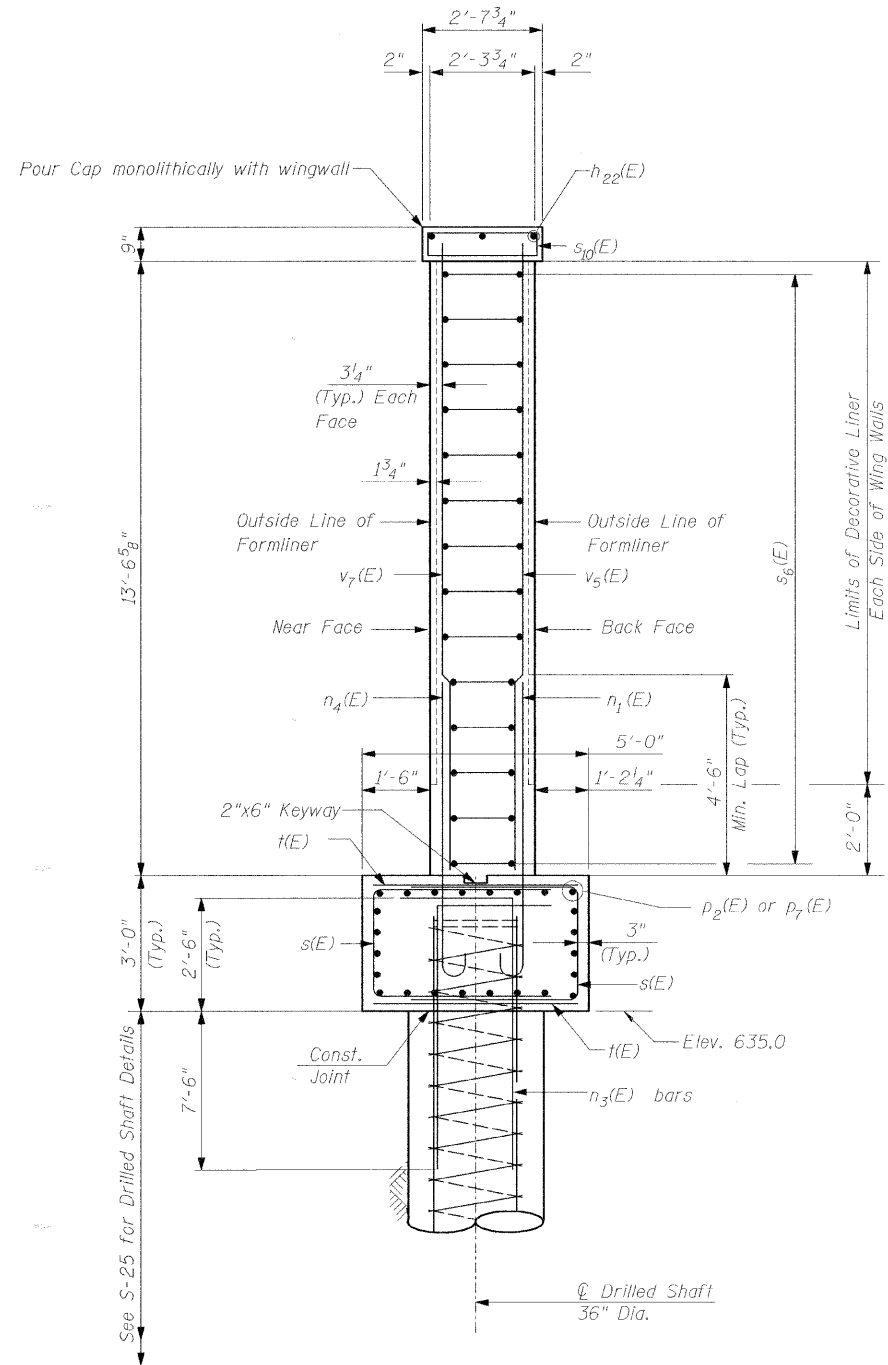
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Note:
Chamfer all exposed edges $\frac{3}{4}$ "

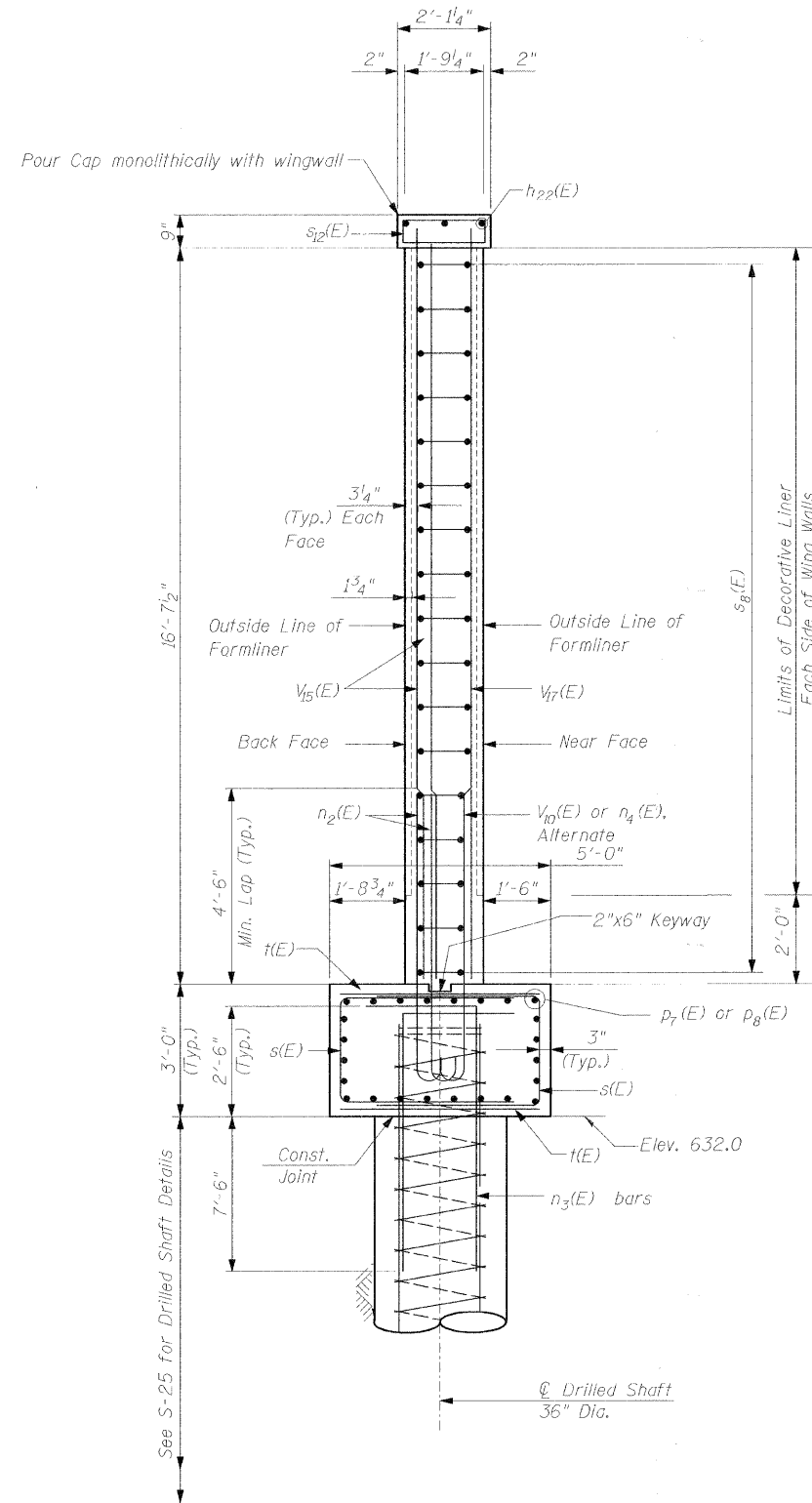
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1248	99-00080-00-BR	LAKE	46	36
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

Sheet S-24 of S-29

63020



SECTION E-E
Showing Reinforcement



SECTION F-F
Showing Reinforcement

WEST ABUTMENT

Notes:
See S-22 for Location of Section E-E and Section F-F.
See S-26 for Bill of Material and Pipe Underdrain Details.
Provide Shear Key in Top of Caisson Cap and Roughen Surface to $\frac{1}{4}$ " Amplitude at Locations where Concrete will be Placed for the Abutment and Wingwall.

DATE: 2/8/2008
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					DATE: JANUARY 2008	CHECKED BY: NSA	

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330 Pfingsten Road, Northbrook, IL 60062
(847) 272-7400, Fax: (847) 291-4813
WJE No. 2008.2324

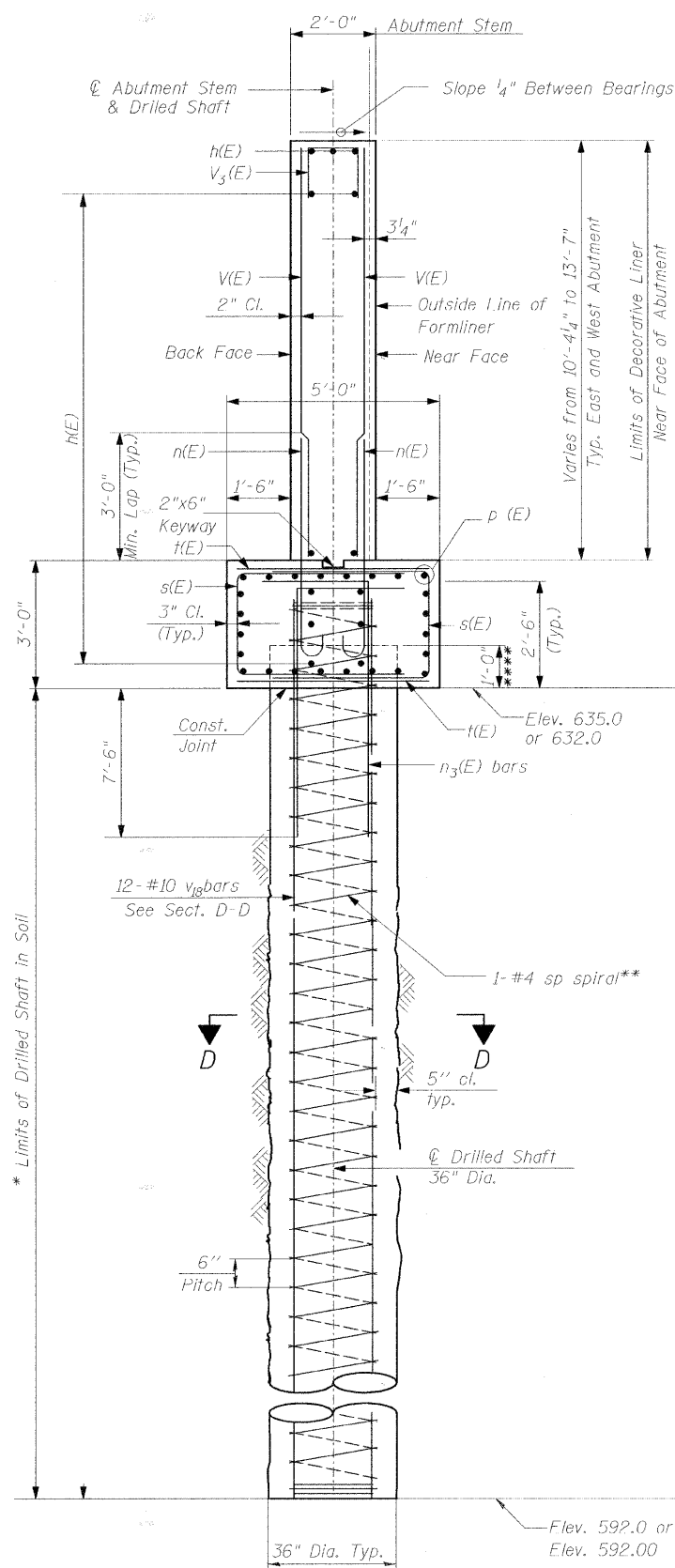
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ILLINOIS DEPARTMENT OF TRANSPORTATION
BUREAU OF LOCAL ROADS AND STREETS

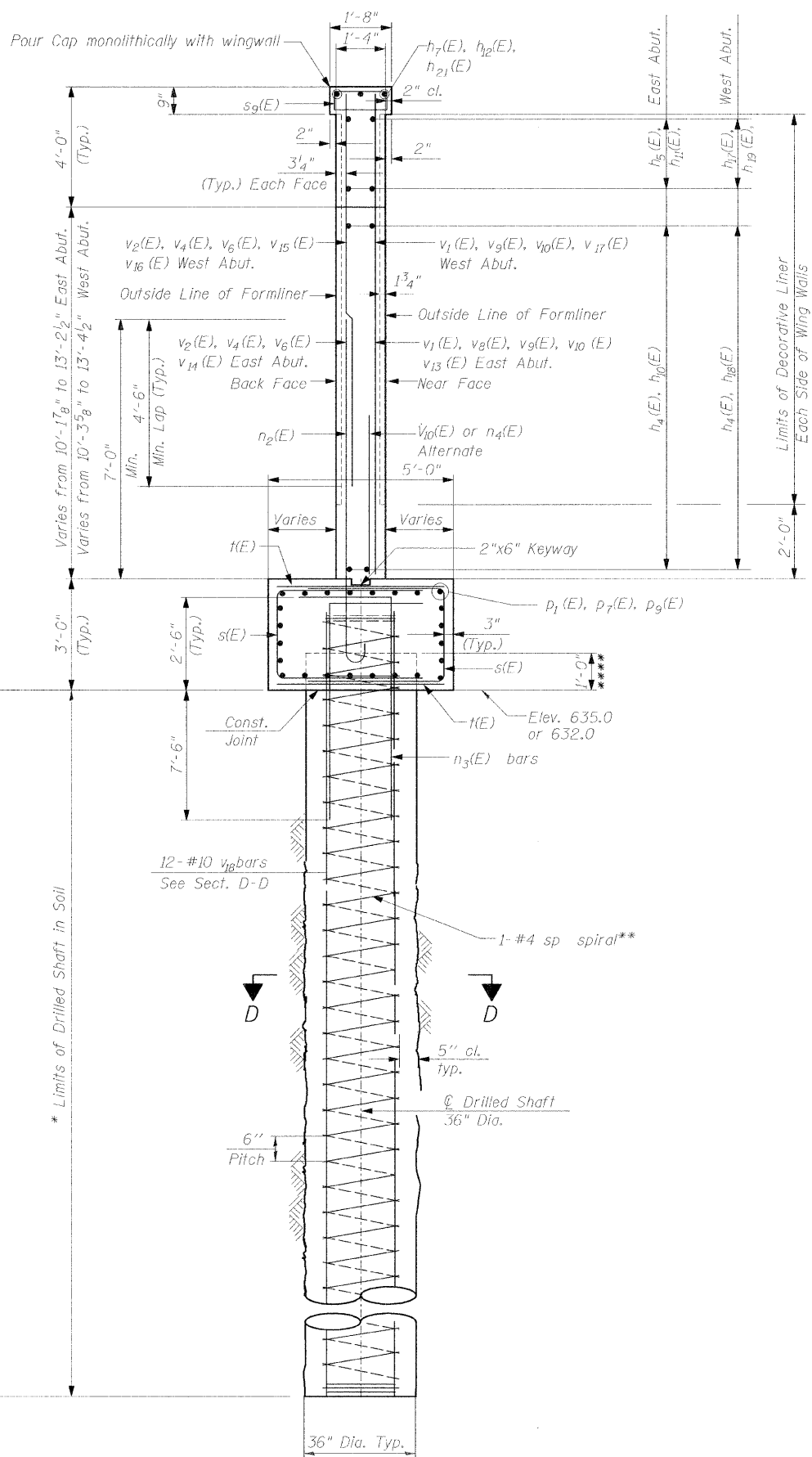
PROJECT:
OLD ELM ROAD OVER EAST SKOKIE DITCH
STA. 187+46 LAKE COUNTY
STRUCTURE NO. 049-6870

TITLE: WEST ABUTMENT & WINGWALL DETAILS

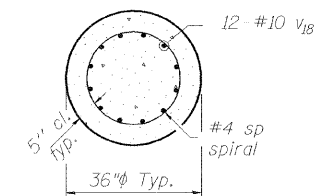
Note:
Chamfer all exposed edges 3/4"



TYPICAL ABUTMENT STEM & DRILLED SHAFT ELEVATION
Showing Reinforcement



TYPICAL END WING WALLS & DRILLED SHAFT ELEVATION
Showing Reinforcement



SECTION D-D

Notes:

* The quantities and detailing are based on the estimated elevations shown on the plans. The actual elevations may differ at each shaft and corresponding adjustments shall be made to the drilled shaft and reinforcement quantities and payment limits.
Reinforcement bars designated (E) shall be epoxy coated.

** Provide 1/2 extra turns top and bottom of each drilled shaft. Extend spiral 2'-0" into drilled shaft cap. Provide min. 4-#4 spacers or equivalent.

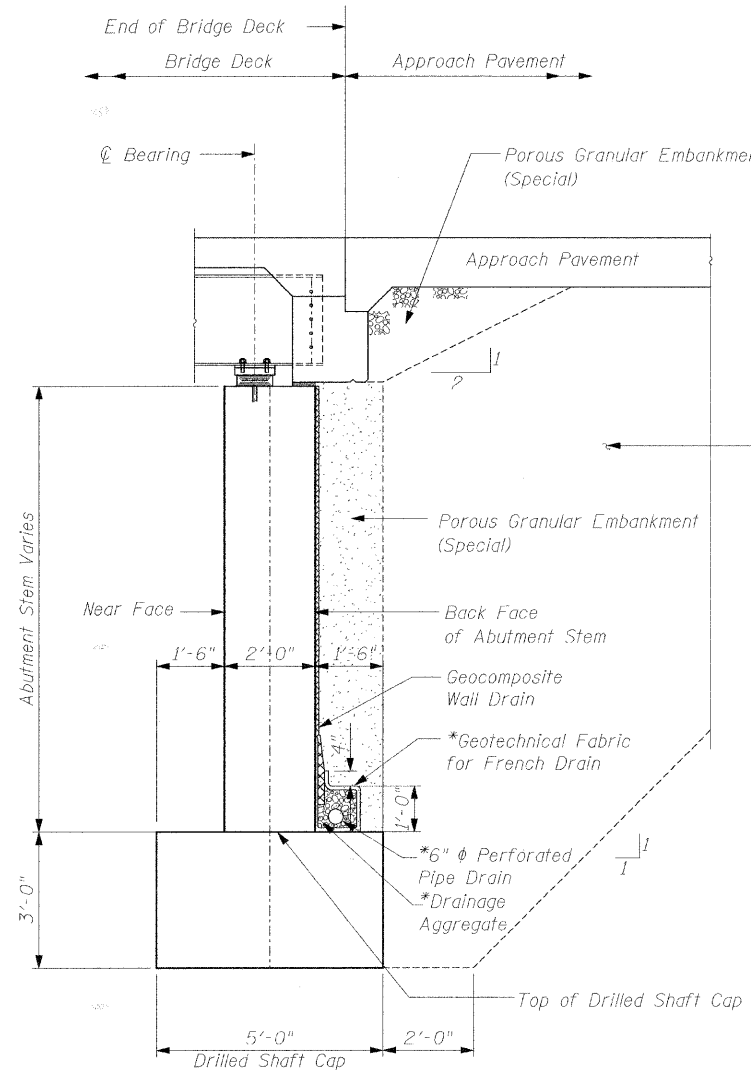
**** Pour additional 1' 0" of concrete for each Drilled Shaft and chip out prior to placement of Drilled Shaft Cap Reinforcement Bars and Concrete.

Provide Shear Key in Top of Caisson Cap and Roughen Surface to 1/4" Amplitude at Locations where Concrete will be Placed for the Abutment and Wingwall.

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	Wiss, Janney, Elstner Associates, Inc. Engineers, Architects, Material Scientists 330 Pfingsten Road, Northbrook, IL 60062 (847) 272-7400, Fax: (847) 291-4813 WJE No. 2006.2324
	THE CITY OF LAKE FOREST CHARTERED 1861 ILLINOIS DEPARTMENT OF TRANSPORTATION BUREAU OF LOCAL ROADS AND STREETS
PROJECT: OLD ELM ROAD OVER EAST SKOKIE TITCH STA. 187+46 LAKE COUNTY STRUCTURE NO. 049-6870	
TITLE: ABUTMENTS & WINGWALLS DRILLED SHAFT DETAILS	
SCALE: N.T.S.	DRAWN BY: IMG
DATE: JANUARY 2006	CHECKED BY: NSA

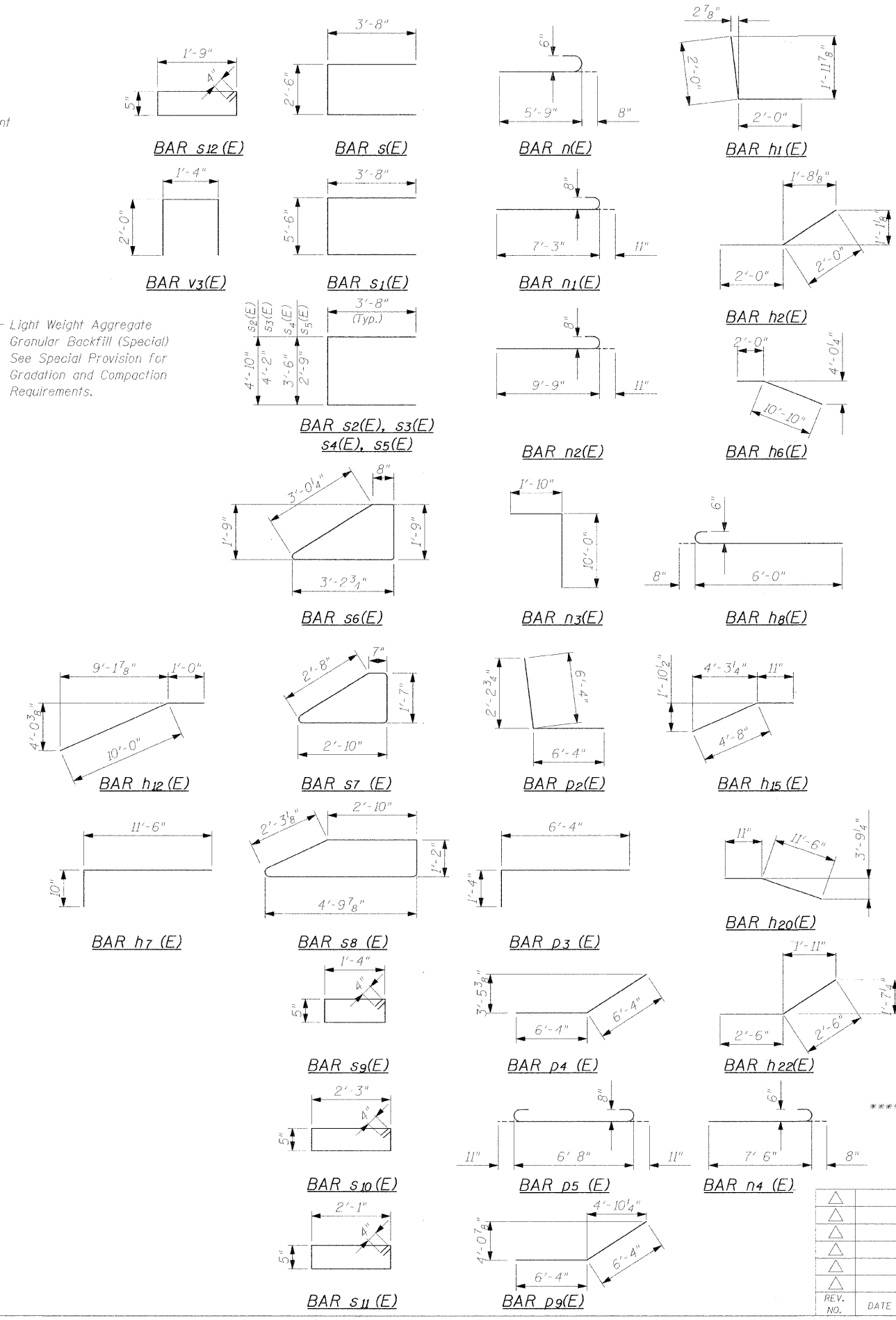
EAST AND WEST ABUTMENT BILL OF MATERIAL



*Included in the cost of "Pipe Underdrains for Structures"

**TYPICAL SECTION THRU ABUTMENT
BACKFILL AND PIPE UNDERDRAIN DETAILS**
(Wingwall Similar)

Note:
Replace and Compact Disturbed Soil at the Toe of Caisson Cap and Face of Wingwalls with Suitable Material prior to Backfilling Walls.



Bar	No.	Size	Length	Shape
n(E)	58	#5	48'-0"	—
h1(E)	50	#5	4'-0"	—
h2(E)	22	#5	4'-0"	—
h3(E)	16	#5	5'-8"	—
h4(E)	20	#5	12'-6"	—
h5(E)	4	#5	15'-5"	—
h6(E)	6	#5	12'-10"	—
h7(E)	20	#5	12'-4"	—
h8(E)	6	#5	6'-8"	—
h9(E)	15	#5	5'-3"	—
h10(E)	26	#5	9'-9"	—
h11(E)	4	#5	17'-7"	—
h12(E)	3	#5	13'-3"	—
h13(E)	2	#5	5'-5"	—
h14(E)	2	#5	3'-6"	—
h15(E)	2	#5	5'-7"	—
h16(E)	32	#5	4'-0"	—
h17(E)	3	#5	13'-6"	—
h18(E)	28	#5	10'-10"	—
h19(E)	3	#5	13'-6"	—
h20(E)	3	#5	12'-5"	—
h21(E)	9	#5	3'-5"	—
h22(E)	28	#5	5'-0"	—

Bar	No.	Size	Length	Shape
t(E)	252	#5	1'-6"	—
v(E)	229	#6	10'-1"	—
v1(E)	15	#6	13'-0"	—
v2(E)	34	#8	13'-0"	—
v3(E)	110	#5	5'-4"	—
v4(E)	24	#8	10'-0"	—
v5(E)	8	#8	13'-7"	—
v6(E)	17	#8	12'-3"	—
v7(E)	7	#6	13'-7"	—
v8(E)	11	#6	12'-3"	—
v9(E)	12	#6	10'-0"	—
v10(F)	22	#6	5'-0"	—
v11(E)	5	#8	16'-9"	—
v12(E)	9	#6	16'-9"	—
v13(E)	5	#6	14'-10"	—
v14(E)	10	#8	14'-10"	—
v15(E)	8	#8	16'-4"	—
v16(E)	9	#8	14'-10"	—
v17(E)	8	#6	16'-4"	—
v18(E)	144	#10	40'-0"	—

n(E)	187	#6	6'-5"	—
n1(E)	36	#8	8'-2"	—
n2(E)	72	#8	10'-8"	—
n3(E)	144	#10	11'-10"	—
n4(E)	32	#6	8'-2"	—
p(E)	24	#8	45'-6"	—
p1(E)	24	#8	13'-9"	—
p2(E)	48	#8	12'-8"	—
p3(E)	32	#8	7'-8"	—
p4(E)	24	#8	12'-8"	—
p5(E)	16	#8	8'-6"	—
p6(E)	24	#8	4'-0"	—
p7(E)	48	#8	15'-6"	—
p8(E)	24	#8	12'-8"	—
p9(E)	24	#8	14'-10"	—
s(E)	442	#5	9'-10"	—
s1(E)	24	#5	12'-10"	—
s2(E)	4	#5	12'-2"	—
s3(E)	4	#5	11'-6"	—
s4(E)	4	#5	10'-10"	—
s5(E)	4	#5	10'-1"	—
s6(E)	14	#5	8'-8"	—
s7(E)	29	#5	7'-8"	—
s8(E)	17	#5	11'-1"	—
s9(E)	39	#4	4'-2"	—
s10(E)	11	#4	6'-0"	—
s11(E)	4	#4	5'-8"	—
s12(E)	5	#4	5'-0"	—
sp	12	#4	42'-0"	—

Notes:
Reinforcement bars designated (E) shall be epoxy coated.

Concrete Structures	Cu. Yd.	205
Reinforcement Bars, Epoxy Coated	Pound	48050
Reinforcement Bars	Pound	24785
Drilled Shaft in Soil 36"Ø	Cu. Yd.	130
Pipe Underdrains for Structures, 6"	Foot	140

***** Cost of Spiral Incidental with Drilled Shaft in Soil.

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THE CITY OF LAKE FOREST
CHARTERED 1861

ILLINOIS DEPARTMENT OF TRANSPORTATION
BUREAU OF LOCAL ROADS AND STREETS

PROJECT:
OLD ELM ROAD OVER EAST SKOKIE DITCH
STA. 187+46 LAKE COUNTY
STRUCTURE NO. 049-6870

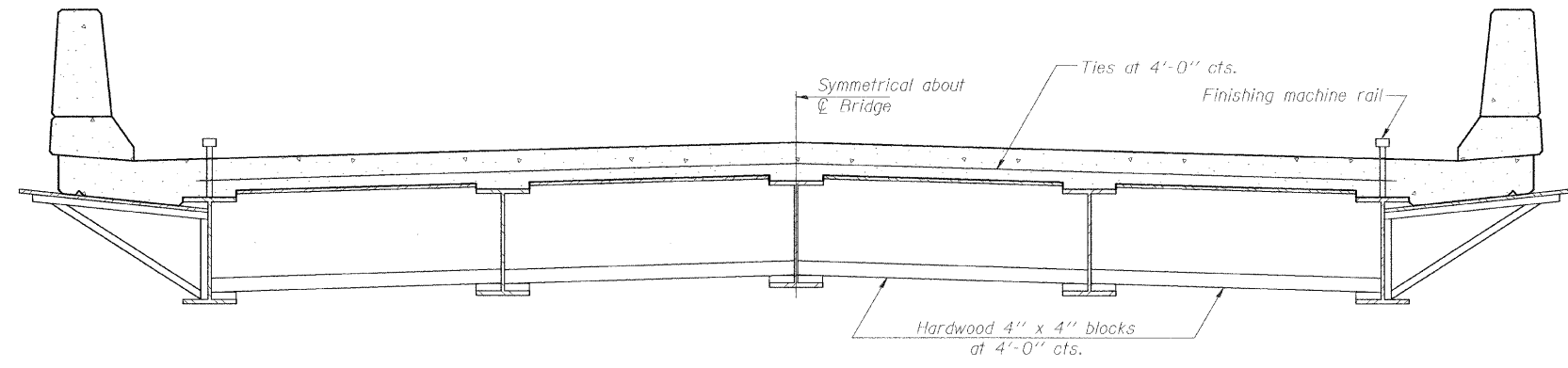
TITLE:
SUBSTRUCTURE BILL OF MATERIAL AND DETAILS

SCALE: N.T.S. DRAWN BY: IMG
DATE: JANUARY 2008 CHECKED BY: NSA

REV. NO.	DATE	REVISION RECORD	MADE BY	CHECKED BY

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1248	99-00080-00-BR	LAKE	46	39
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

Sheet S-27 of S-29 **63020**



**FORM BRACES FOR
STANDARD CONSTRUCTION**

When cantilever forming brackets are used, the work shall be done according to Article 503.06, except as modified below and in the details shown on this sheet.
 The finishing machine rails shall be placed on the top flange of the exterior beams.
 The beams or girders, supporting cantilever forming brackets, shall be tied together at 4 foot intervals.
 For Standard construction, or Stage Construction the Hardwood bracing materials shall be placed as shown between webs of beams in each bay.

**CANTILEVER FORMING BRACKETS
FOR SUPERSTRUCTURES WITH
W27 BEAMS AND SMALLER**

DATE: 2/5/2008
FILENAME: p:\2006\2301-2400\2006.2324-nanderson-old elm design\microstation-final\s-27.dgn

SB-1 11-1-06

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**THE CITY OF
LAKE FOREST**
CHARTERED 1861

ILLINOIS DEPARTMENT OF TRANSPORTATION
BUREAU OF LOCAL ROADS AND STREETS

PROJECT:
**OLD ELM ROAD OVER EAST SKOKIE DITCH
STA. 187+46 LAKE COUNTY
STRUCTURE NO. 049-6870**

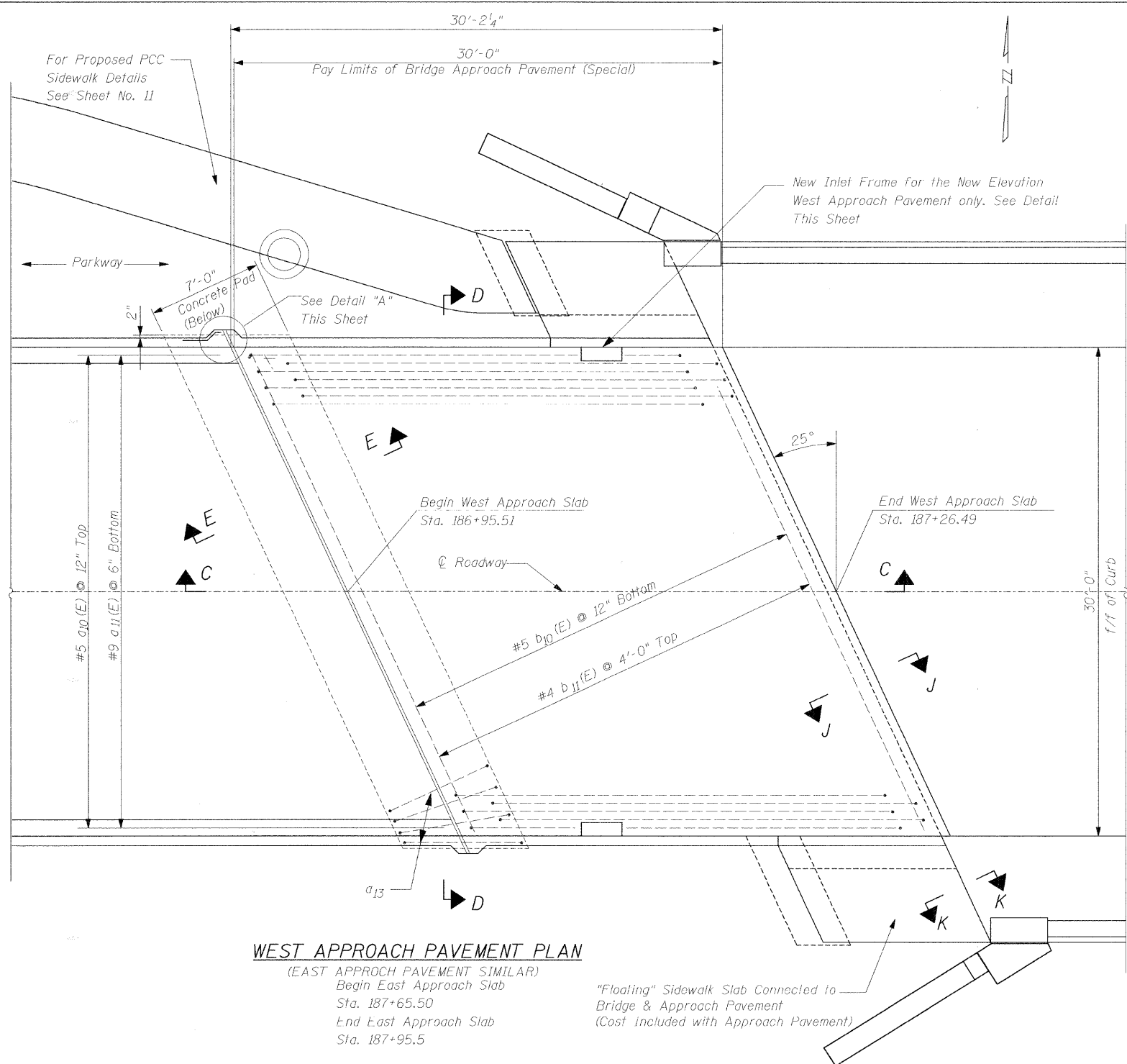
TITLE:
CANTILEVER FORMING BRACKET

SCALE: N.T.S. DRAWN BY: IMG
DATE: JANUARY 2008 CHECKED BY: NSA

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REV. NO.	DATE	REVISION RECORD	MADE BY	CHECKED BY

F.A.U. R.T.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1248	99-00080-00-BR	LAKE	46	42
STA. 185+96		TO STA. 189+70		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	

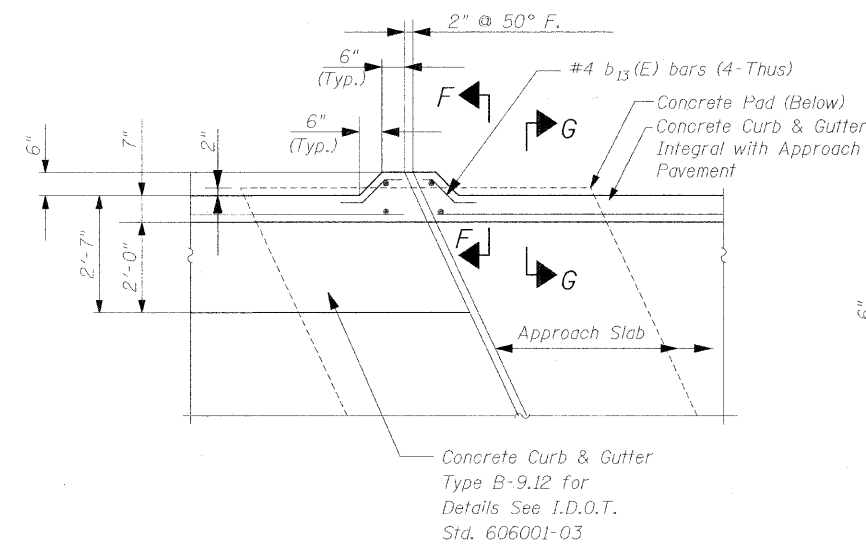
63020



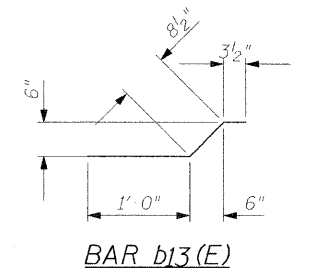
WEST APPROACH PAVEMENT PLAN

(EAST APPROACH PAVEMENT SIMILAR)
 Begin East Approach Slab Sta. 187+65.50
 End East Approach Slab Sta. 187+95.5

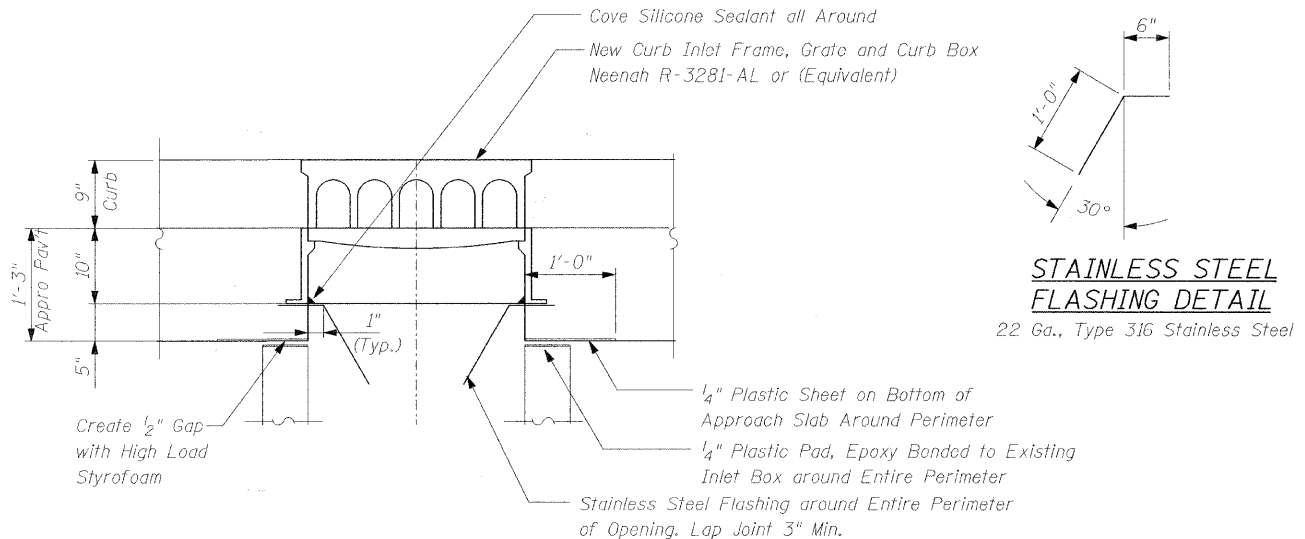
"Floating" Sidewalk Slab Connected to Bridge & Approach Pavement
 (Cost included with Approach Pavement)



DETAIL "A"

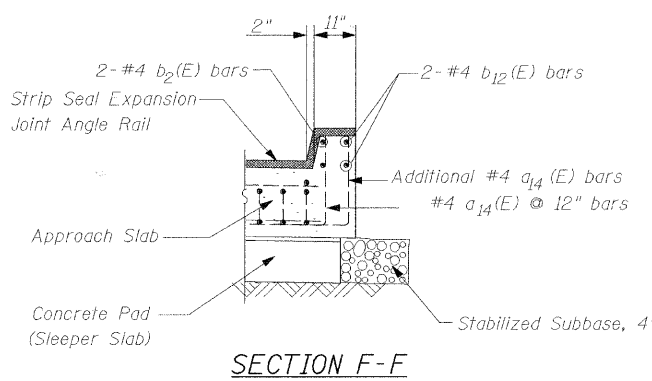


BAR b13(E)

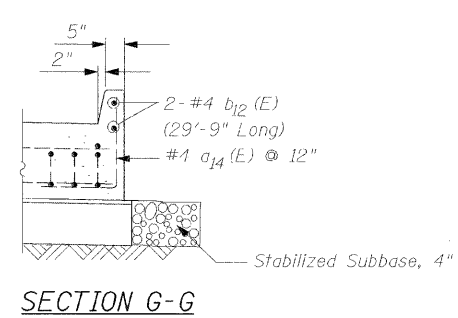


NEW INLET BOX DETAIL AT APPROACH SLAB

(Cost of Flashing and Slide Bearing Included with New Inlet)



SECTION F-F



SECTION G-G

Notes:
 See Sheet 43 for Section J J & Section K K.
 See Bridge Approach Pavement Sta. 420401 for additional details.
 All reinforcement bars shall be Epoxy Coated.

DESIGN STRESSES

$f_y = 60,000$ p.s.i.
 $f'_c = 4,000$ p.s.i.
 $n = 8.1$

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THE CITY OF LAKE FOREST
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 BUREAU OF LOCAL ROADS AND STREETS

PROJECT: **OLD ELM ROAD OVER EAST SKOKIE DITCH**

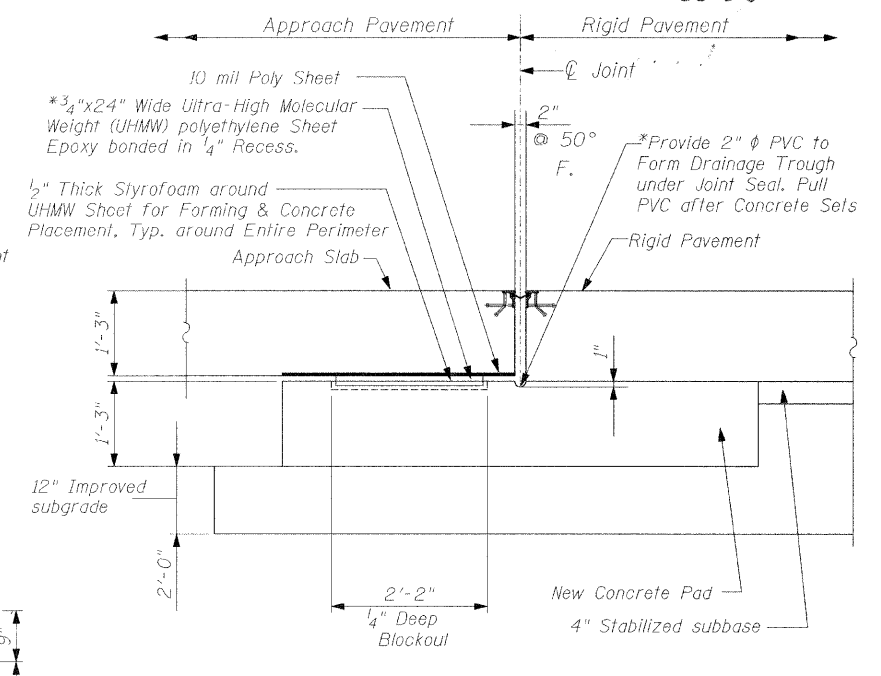
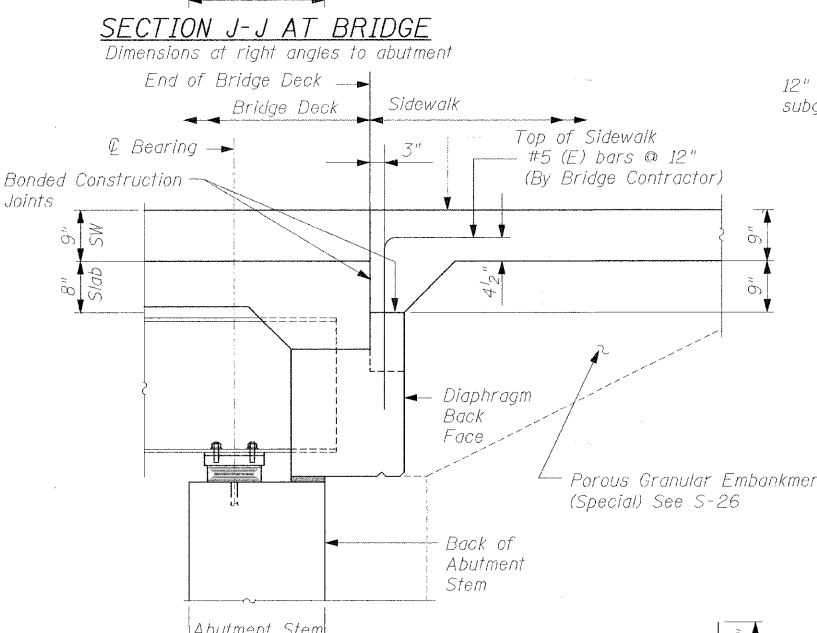
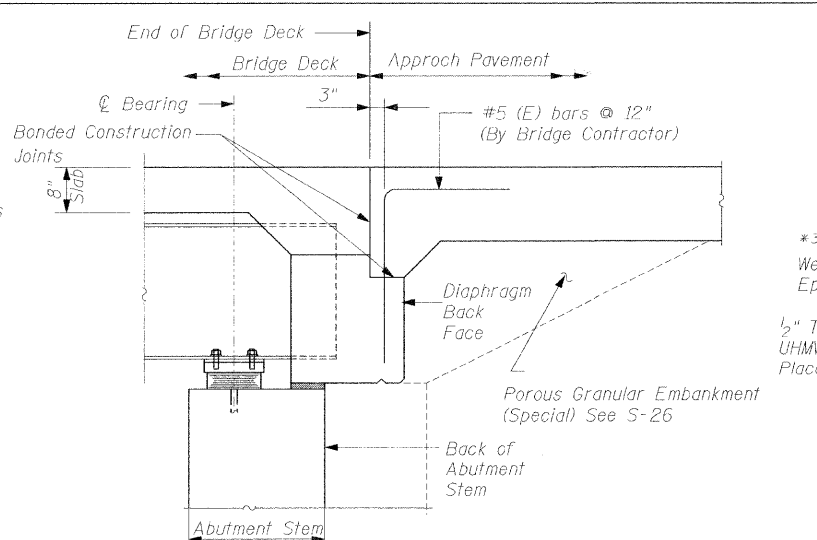
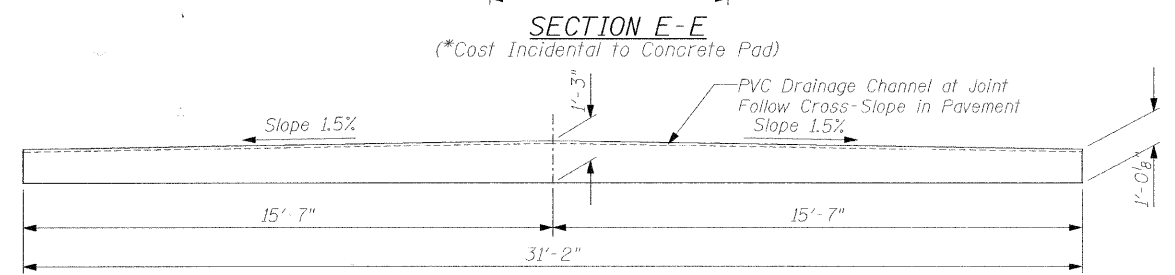
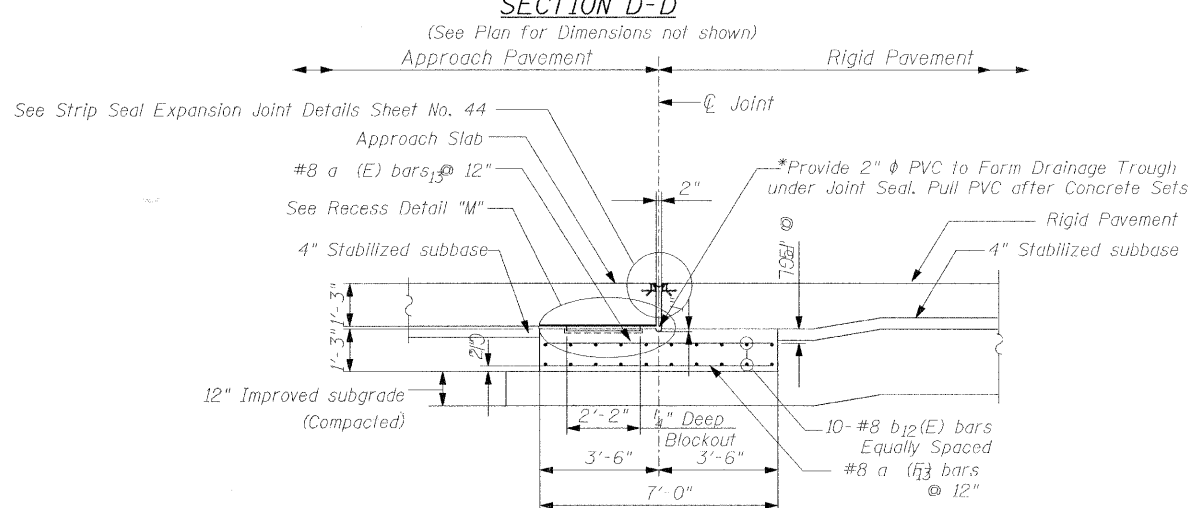
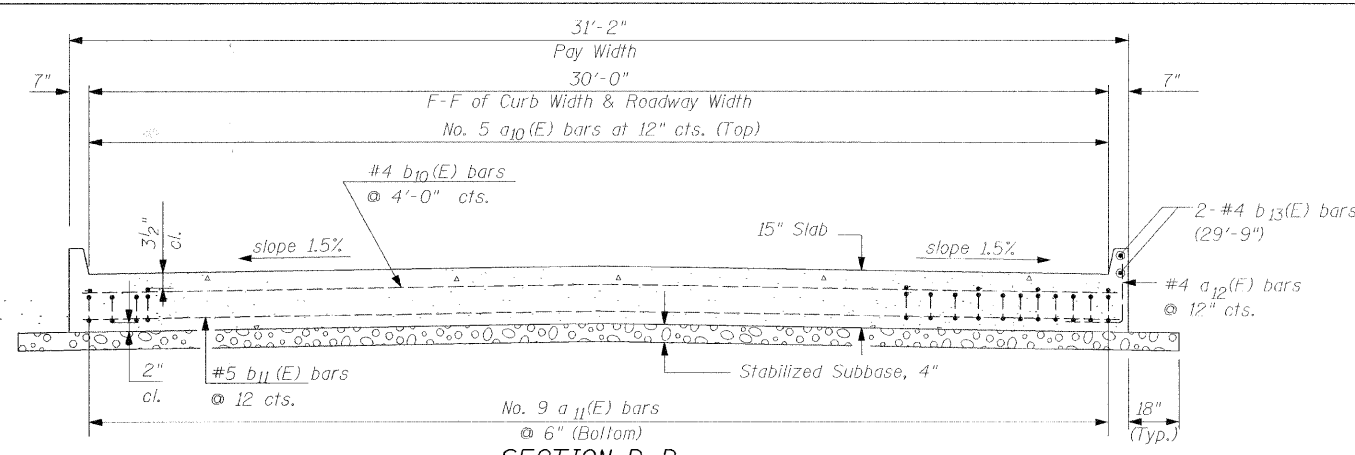
TITLE: **PLAN BRIDGE APPROACH PAVEMENT (SPECIAL)**

SCALE: N.T.S. DRAWN BY: IMG
 DATE: JANUARY 2008 CHECKED BY: NSA

DATE: 2/2/2008 FILENAME: p:\2006\2301-2400\2006.2324-manderson-old elm design\microstation-final\c-42.dgn

F.A.U. R.T.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1248	99-00080-00-BR	LAKE	46	43
STA. 185+96		TO STA. 189+70		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		

63020

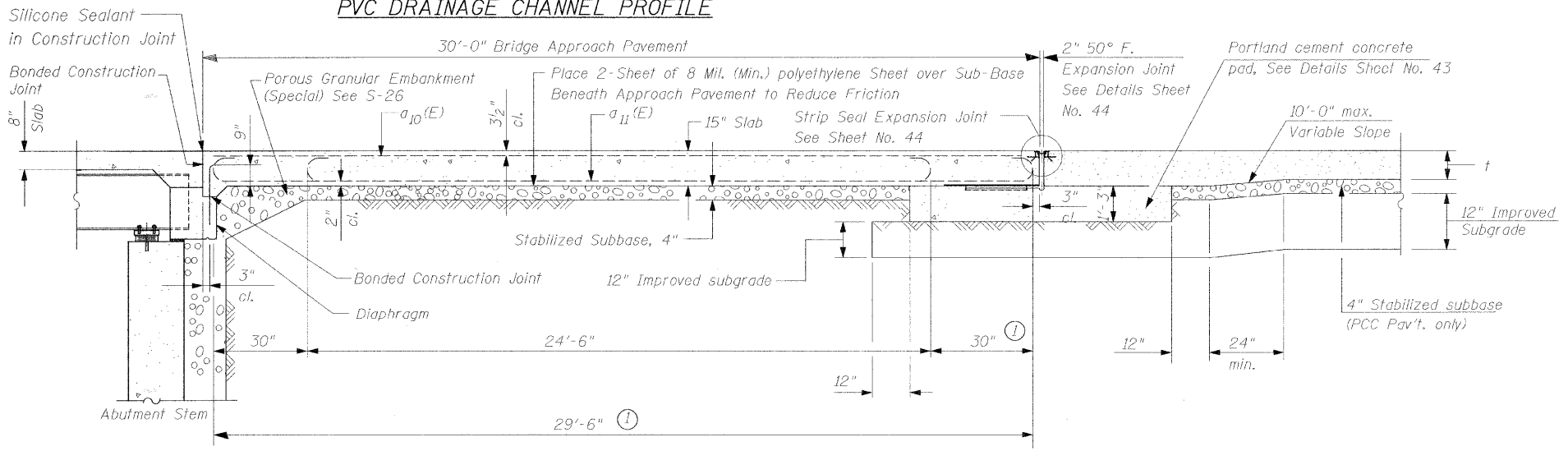


BILL OF MATERIAL

Item	Unit	Total
Bridge Approach Pavement (Special)	Sq. Yd.	245
Portland Cement Pad (Special)	Sq. Yd.	55

DESIGN STRESSES
 $f_y = 60,000 \text{ p.s.i.}$
 $f'_c = 4,000 \text{ p.s.i.}$
 $n = 8.1$

DATE: 2/8/2008 FILENAME: P:\2006\2301-2400\2006.2324-NAnderson-Old Elm Design\MICROSTATION-FINAL\C-43.dgn



① Stagger No. 9 bars as shown on plan - full width

*Porous Granular Embankment (Special) Placement behind Diaphragm is Important to the Proper Performance of the Semi-Integral Abutment. Review with Engineer Prior to Placement.

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THE CITY OF LAKE FOREST
 CHARTERED 1861

ILLINOIS DEPARTMENT OF TRANSPORTATION
 BUREAU OF LOCAL ROADS AND STREETS

PROJECT: **OLD ELM ROAD OVER EAST SKOKIE DITCH**

TITLE: **BRIDGE APPROACH PAVEMENT (SPECIAL) SECTIONS & DETAILS**

SCALE: N.T.S. DRAWN BY: IMG

DATE: JANUARY 2008 CHECKED BY: NSA

F.A.U. RLE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
124B	99-00080-00-BR	LAKE	46	44
STA. 185+96		TO STA. 189+70		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

63020

GENERAL NOTES

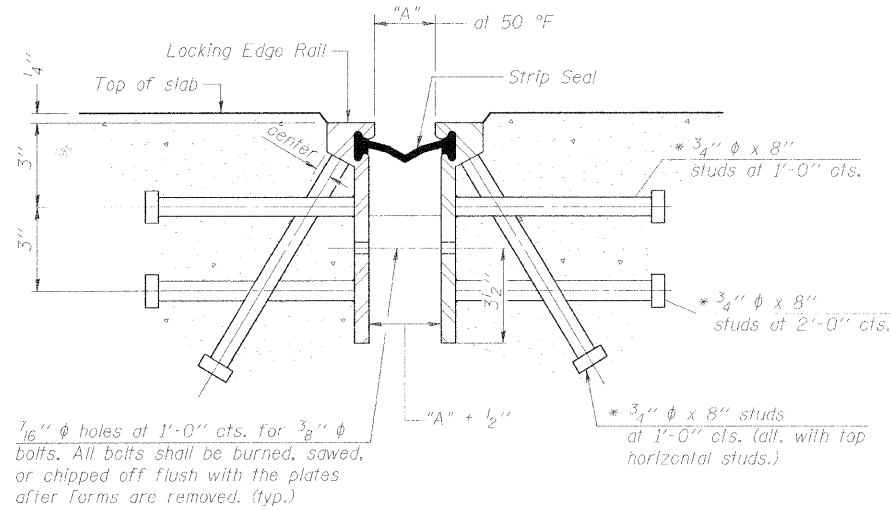
The strip seal shall be made continuous and shall have a minimum thickness of 1/4". The configuration of the strip seal shall match the configuration of the Locking Edge Rails.

The height and thickness of the Locking Edge Rails shown are minimum dimensions. The actual configuration of the Locking Edge Rails and matching strip seal may vary from manufacturer to manufacturer. Flanged edge rails will not be allowed.

Locking Edge Rails may be spliced at slope discontinuities and stage construction joints.

The manufacturer's recommended installation methods shall be followed.

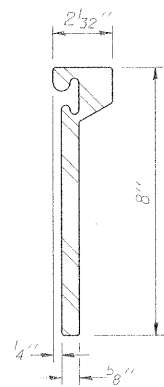
The joint opening and deck dimensions detailed on the superstructure are based on a preformed joint seal. If the contractor elects to use the alternate strip seal joint, the opening and deck dimensions shall be modified according to the dimensions detailed on this sheet. Required modifications shall be made at no additional cost to the State.



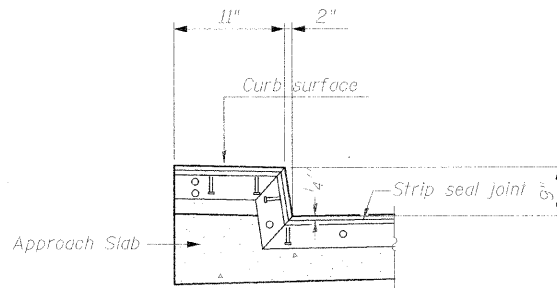
Required Strip Seal rated movement	"A"
1"	1 1/8"
2"	1 3/4"

SECTION THRU ROLLED RAIL EXP. JOINT
(Studs Required)

* Granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs., automatically end welded.

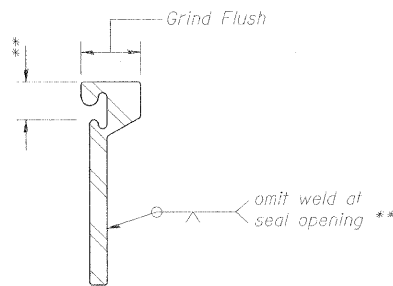


ROLLED (EXTRUDED) RAIL
(Galvanized Finish)



CURB DETAILS AT EXPANSION JOINT*

* Shorter plates with a single row of studs at 12" centers may be necessary on medians which are shallower than 9". See manufacturer's recommendation.



LOCKING EDGE RAIL SPLICE

The inside of the locking edge rail groove shall be free of weld residue.

TYPICAL END TREATMENTS

APPROACH PAVEMENT JOINT SYSTEM - EXPANSION (STRIP SEAL)

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THE CITY OF LAKE FOREST
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PROJECT: **OLD ELM ROAD OVER EAST SKOKIE DITCH**
TITLE: **BRIDGE APPROACH PAVEMENT JOINT SYSTEM-EXPANSION**

SCALE: N.I.S. DRAWN BY: IMG
DATE: JANUARY 2008 CHECKED BY: NSA

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REV. NO.	DATE	REVISION RECORD	MADE BY	CHECKED BY	

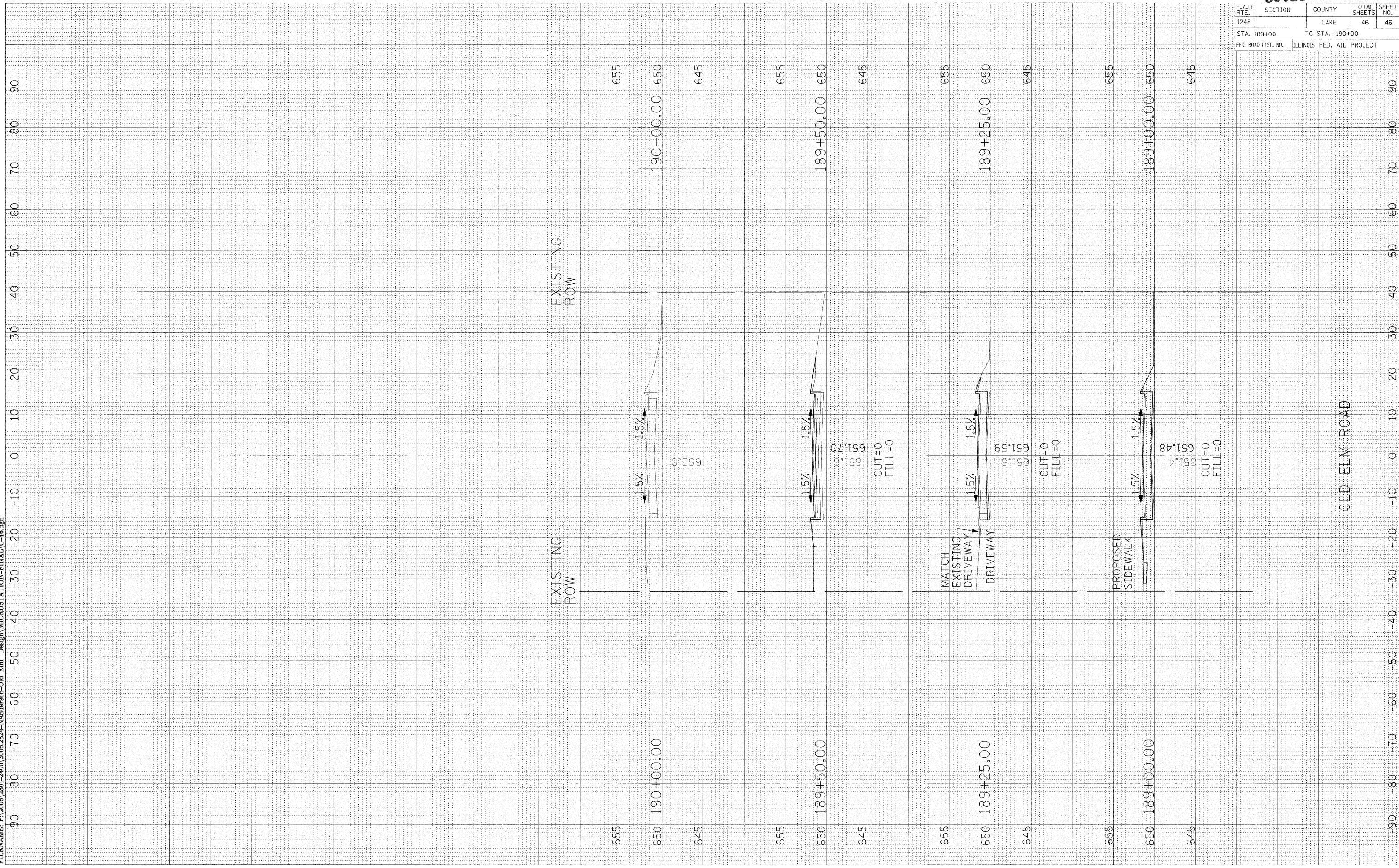
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1248		LAKE	46	45
STA. 185+00		TO STA. 188+50		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		



OLD ELM ROAD

EXISTING
PROPOSED

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1248		LAKE	46	46
STA. 189+00		TO STA. 190+00		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	



OLD ELM ROAD