1W

3-10-06 Letting, Item 01W

FOR INDEX OF SHEETS AND STANDARDS, SEE SHEET 2

TOTAL SET SHEET NUMBERS	INDEX OF SHEETS	DISCIPLINE SHEET NUMBERS
	TITLE	
2 - 5	GENERAL	G2 - G5
6 - 15	CIVIL	C1 - C10
16 - 34	STRUCTURAL	S1 - S19
35 - 41	BORING	B1 - B7
42 - 44	STANDARD	ST1 - ST3

STATE OF ILLINOIS

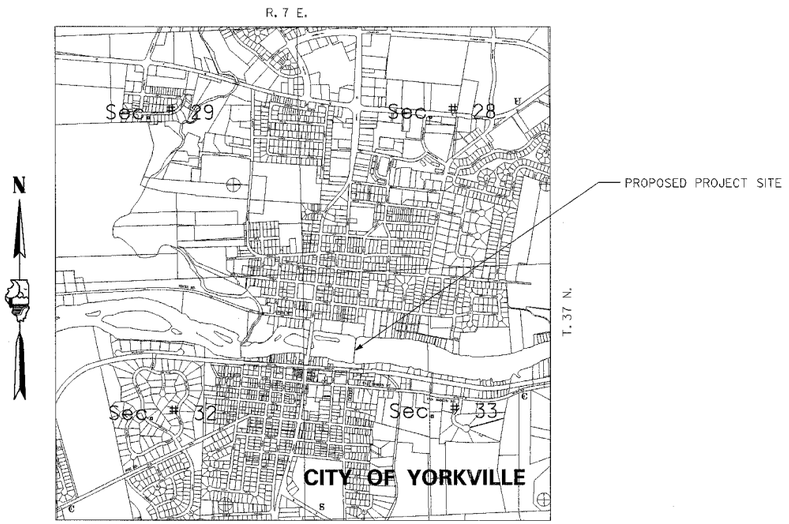
DEPARTMENT OF NATURAL RESOURCES

OFFICE OF WATER RESOURCES

MULTI–PURPOSE DAM PROJECT – PHASE 1 – STEPPED SPILLWAY AND AUXILIARY IMPROVEMENTS YORKVILLE DAM – FOX RIVER

YORKVILLE, ILLINOIS
KENDALL COUNTY
FR–422
2005

REGIONAL MAP



LOCATION MAP

0 ½ mile 1 mile

Scale: 1"=1500'

1" = 100'
1" = 10'
1" = 50'
1" = 40'
1" = 30'
1" = 20'

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.

BOBBY G. CHILTON 3247 REGISTERED STRUCTURAL ENGINEER OF ILLINOIS — 12-05

081-003247

ILLINOIS REGISTERED STRUCTURAL ENGINEER NO.
LICENSE EXPIRES 11-30-06
SEAL APPLIES TO DRAWINGS S-14 THOUGH S-19

GYRON J. CANLEY 081-004737 LICENSED STRUCTURAL ENGINEER CHICAGO IL — 12/12/05

081-004737

ILLINOIS REGISTERED STRUCTURAL ENGINEER NO.
LICENSE EXPIRES 11-30-06
SEAL APPLIES TO ALL STRUCTURAL DRAWINGS EXCEPT S-14 THOUGH S-19

062-052775 WILLIAM J. STANEK LICENSED PROFESSIONAL ENGINEER OF ILLINOIS — 12/12/05

062-052775

ILLINOIS REGISTERED PROFESSIONAL ENGINEER NO.
LICENSE EXPIRES 11-30-05

SUBMITTED BY William J. Stanek — DATE 2/3/06
MANAGER, DIVISION OF PROJECT IMPLEMENTATION

APPROVED BY Gary R. Clark — DATE 2/3/2006
DIRECTOR

INDEX OF SHEETS

DISC. DWG NO.	TOTAL SET SHEET NO.	SHEET NAME
G1	1	COVER SHEET
G2	2	INDEX OF SHEETS AND STANDARDS
G3	3	STANDARD SYMBOLS, PROJECT NAME PLATE, SIGNS AND BENCH MARK
G4	4	SUMMARY OF QUANTITIES
G5	5	HYDROLOGIC AND HYDRAULIC INFORMATION
C1	6	GENERAL PROJECT PLAN AND BORING LOCATIONS
C2	7	GENERAL CROSS SECTIONS I
C3	8	GENERAL CROSS SECTIONS II
C4	9	GENERAL CROSS SECTIONS III
C5	10	MISCELLANEOUS DETAILS
C6	11	TEMPORARY COFFERDAM SYSTEM
C7	12	BYPASS AREA RIPRAP AND GAGE EXTENSION
C8	13	CIVIL DETAILS I
C9	14	CIVIL DETAILS II
C10	15	DENIL FISH LADDER PLAN AND PROFILE
S1	16	GENERAL PLAN & ELEVATION
S2	17	GENERAL NOTES, BILL OF MATERIAL, & TYPICAL DETAILS
S3	18	REMOVAL PLAN
S4	19	SPILLWAY PLAN I
S5	20	SPILLWAY PLAN II
S6	21	SPILLWAY SECTIONS I
S7	22	SPILLWAY SECTIONS II, BILL OF MATERIAL & BAR DETAILS
S8	23	SOUTH ABUTMENT PLAN
S9	24	SOUTH ABUTMENT ELEVATIONS I
S10	25	SOUTH ABUTMENT ELEVATIONS II
S11	26	SOUTH ABUTMENT SECTIONS & DETAILS
S12	27	SOUTH ABUTMENT WALL FINISH DETAILS
S13	28	SOUTH ABUTMENT BILL OF MATERIAL & BAR DETAILS
S14	29	DENIL FISH LADDER FOOTING PLAN
S15	30	DENIL FISH LADDER PLAN
S16	31	DENIL FISH LADDER GRATING PLAN & DETAILS
S17	32	DENIL FISH LADDER ELEVATIONS I
S18	33	DENIL FISH LADDER ELEVATIONS II
S19	34	DENIL FISH LADDER SECTIONS & DETAILS
B1	35	BORINGS
B2	36	BORINGS
B3	37	BORINGS
B4	38	BORINGS
B5	39	BORINGS
B6	40	BORINGS
B7	41	BORINGS
ST1	42	STANDARD I
ST2	43	STANDARD II
ST3	44	STANDARD III

STANDARDS

280001	TEMPORARY EROSION CONTROL SYSTEM
601101	CONCRETE HEADWALL FOR PIPE DRAIN
664001	CHAIN LINK FENCE

ILL. DEPT. OF NATURAL RESOURCES
OFFICE OF WATER RESOURCES
STEPPED SPILLWAY AND
AUXILIARY IMPROVEMENTS
BUILT 200* FR - 422

NOTE:
1. Locate the Name Plate on South Face of the New South Dam Abutment wall. For exact location see sheet 24
2. For Name Plate Details see sheet 3

* To be determined IDNR at time of construction

UTILITY REFERENCE TABLE

J.U.L.I.E.	Call 48 hours prior to construction	(800) 892-0123
City of Yorkville/ Water & Sewer	Eric Dhuse, Director of Public Works 800 Game Farm Road Yorkville, IL 60560	(630) 553-4370
Electricity	Commonwealth Edison	1-800-334-7661
Telephone/SBC	John Evers, Plan Engineer 40 S Mitchell Court Addison, IL 60101	(630) 620-3897
Gas	Monty Jahns Nicor Gas - Project Department 90 N. Finley Road Glen Allen, IL 60137	(630) 629-2500 (815) 433-3850 Ext.262

BILL OF MATERIALS

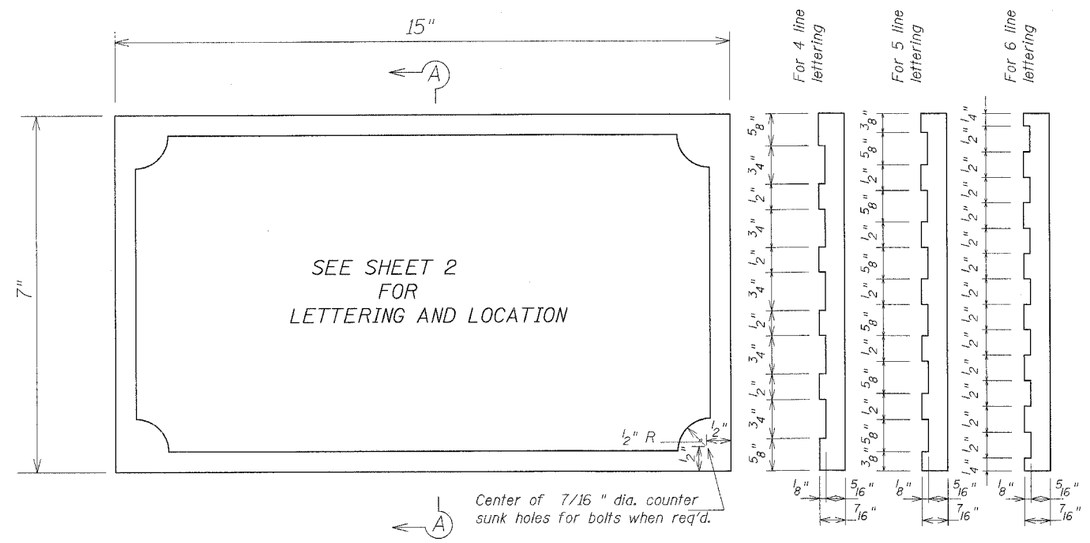
ITEM	UNIT	QUANTITY
Name Plates	EACH	1.0

TENG
TENG & ASSOCIATES, INC.
ENGINEERS/ARCHITECTS/PLANNERS
205 N. MICHIGAN AVE. CHICAGO, IL 60601
TELEPHONE: 312/616-0000

STANDARD SYMBOLS

Center Line
Property Line
Existing Right of Way
Proposed Right of Way
Permanent Easement — Perm. Ease.
Temporary Easement — Temp. Ease.
Railroad Tracks
Existing Culvert
Culvert to be Constructed
Guy Wire or Anchor
Guy Pole
Powerline Pole
Telephone or Telegraph Pole
Pipelines
Gas — G
Water — W
Oil — O
Storm Sewer — SS
Sanitary Sewer — San
Electric Cable, U (Underground), A (Aerial) — E
Telephone Cable, U (Underground), A (Aerial) — T
Cable Television, U (Underground), A (Aerial) — TV
Catch Basin
Manhole
Inlet
Waterline Valve
Fire Hydrant
Vents — V
Meter Boxes — M
Traps, Grease etc. — T
Cistern or Well — C
Cesspool or Septic Tank
Fountain — F
Fenceline
Direction of Flow
Bridge
Tailwater Gage Pipe

Tree
Existing Concrete Revetment Blocks



SECTION A-A

DETAIL OF NAME PLATE

Material - Best quality brass or bronze.

Bordering and Lettering - Raised 1/8", square cut and not tapered. Top surface polished.

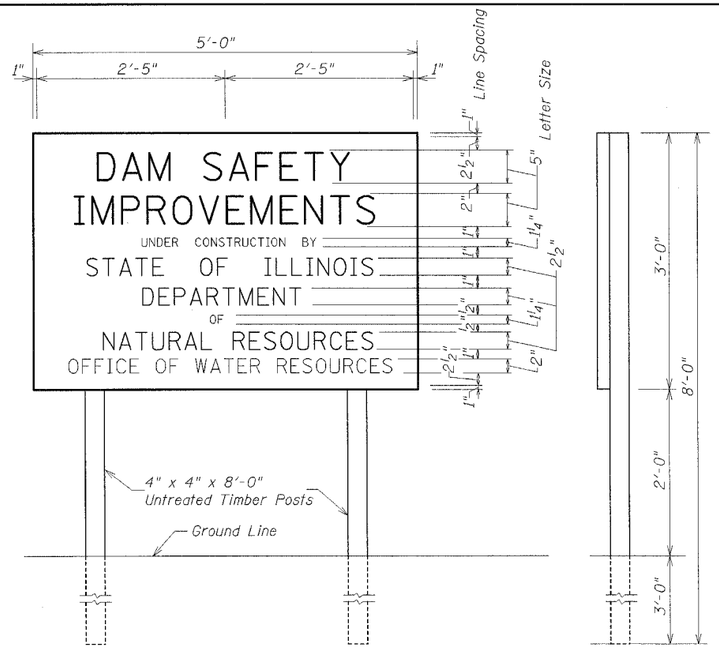
Fastenings - For concrete rails and culvert headwalls: 4 lugs at least 3" long cast on back of plate.
For steel rails: plate to be bolted on with 4 - 3/8" dia. brass or bronze hex head bolts.

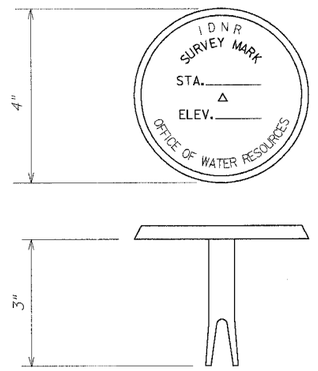
CONSTRUCTION SIGN

Signs shall be made of 1" lumber rigidly cleated, or of metal (18 ga.). The Contractor shall furnish all material and labor for constructing and erecting the signs. The signs shall be placed prior to the starting of actual construction operations at each end of the construction section or as directed by the Engineer. Before any sign is erected, it shall be approved by the Engineer as to its appearance and quality of construction. The signs shall remain in place and shall be maintained in satisfactory condition until the project is accepted by the department. The Contractor shall then remove the signs and the material will become his property.

The letters on the sign shall be black mechanical style on a white background and appropriate border lines. The signs shall be painted by a professional painter, and the size of the letters shall be as shown on these Plans.

No extra compensation will be allowed the Contractor for these signs and the cost shall be considered incidental to the contract.





DETAIL OF BENCH MARK

Bench Mark to be furnished by the Office of Water Resources.

See Design Plans for location.

Cost of placing shall be considered incidental to the Contract.

NOTE TO CONTRACTOR

The Standards for the Construction Sign, Name Plate and Bench Mark shown on this sheet shall be used only when called for on the Plans.

FR-422

S:\DOCUMENT\02348801\CIVIL\DGN\STD00N9.DGN
DRAGASMZ 1-13-2006 11:47:47
Designed By MD Checked By RJM
Drawn By JES Checked By RJM

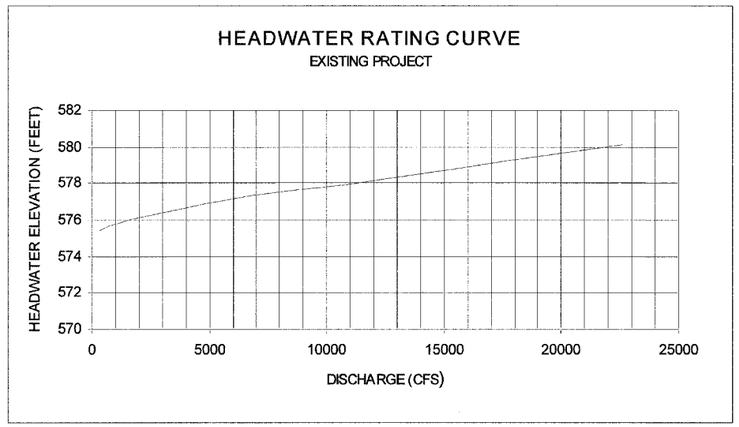
SUMMARY OF QUANTITIES

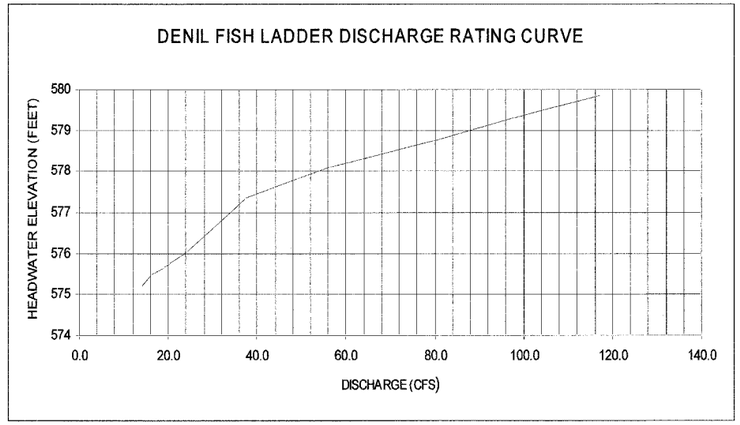
CODE NO.	PAY ITEM	UNIT	QUANTITY
20100110	TREE REMOVAL (6 TO 15 UNITS DIAMETER)	UNIT	114
20100500	TREE REMOVAL, ACRES	ACRE	0.40
20101000	TEMPORARY FENCE	FOOT	603
20101100	TREE TRUNK PROTECTION	EACH	4
20200100	EARTH EXCAVATION	CU YD	2,648
20200200	ROCK EXCAVATION	CU YD	118
20201200	REMOVAL AND DISPOSAL OF UNSUITABLE MATERIAL	CU YD	2,600
20201450	SUB-BASE GRANULAR MATERIAL, TYPE A	CU YD	2
20700220	POROUS GRANULAR EMBANKMENT	CU YD	112
20700600	NON-POROUS GRANULAR EMBANKMENT	CU YD	485
21001000	GEOTECHNICAL FABRIC FOR GROUND STABILIZATION	SQ YD	37
25002024	SEEDING, CLASS 4B (MODIFIED)	ACRE	0.01
25100630	EROSION CONTROL BLANKET	SQ YD	51
28000250	TEMPORARY EROSION CONTROL SEEDING	POUND	142
28100208	STONE RIPRAP, CLASS A4 (SPECIAL)	TON	396
28100210	STONE RIPRAP, CLASS A5 (SPECIAL)	TON	402
28100212	STONE RIPRAP, CLASS A6 (SPECIAL)	TON	495
28100214	STONE RIPRAP, CLASS A7 (SPECIAL)	TON	895
28101710	RIPRAP, SPECIAL	CU YD	225
28101840	RIPRAP FOR STILLING BASIN	TON	1,361
50102400	CONCRETE REMOVAL	CU YD	64.3
50200100	STRUCTURE EXCAVATION	CU YD	1,760
50300225	CONCRETE STRUCTURES	CU YD	1,946.1
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	227,670
51500100	NAME PLATES	EACH	1
54010503	PRECAST CONCRETE BOX CULVERT 5' X 3'	FOOT	5
56000100	CAST IRON SOIL PIPE 4"	FOOT	8
58700200	BRIDGE SEAT SEALER	SQ FT	23
60100060	CONCRETE HEADWALL FOR PIPE DRAINS	EACH	1
66400305	CHAIN LINK FENCE, 6'	FOOT	102
66408000	CHAIN LINK GATES, 6' X 20' DOUBLE	EACH	1
*67100100	MOBILIZATION	L SUM	1
81200120	CONDUIT EMBEDDED IN STRUCTURE, 2" DIA., GALVANIZED STEEL	FOOT	30
81200230	CONDUIT EMBEDDED IN STRUCTURE, 2" DIA., PVC	FOOT	43
X0323973	SEDIMENT CONTROL, SILT FENCE	FOOT	1,216
X0323974	SEDIMENT CONTROL, SILT FENCE MAINTENANCE	FOOT	365
X7240505	RELOCATE SIGN PANEL AND POST	EACH	5
XX003949	CONSTRUCTION STAKING	L SUM	1
	GROUTED BOULDERS	CU YD	257
	TEMPORARY COFFERDAM SYSTEM	L SUM	1
	SEEDING, MULCHING AND FERTILIZING	ACRE	1.42
	GALVANIZED WELDED STEEL BAR GRATING	SQ FT	820
	STAINLESS STEEL DEBRIS GRATE	EACH	1
	ALUMINUM BAFFLES AND GUIDES	EACH	24
	DUCTILE IRON PIPE PROTECTION SYSTEM	L SUM	1
	DUCTILE IRON GAGE PIPE EXTENSION	L SUM	1
	STONE FACE FINISH	SQ FT	2,905
	ARTICULATED BLOCK REVETMENT MAT	SQ YD	37

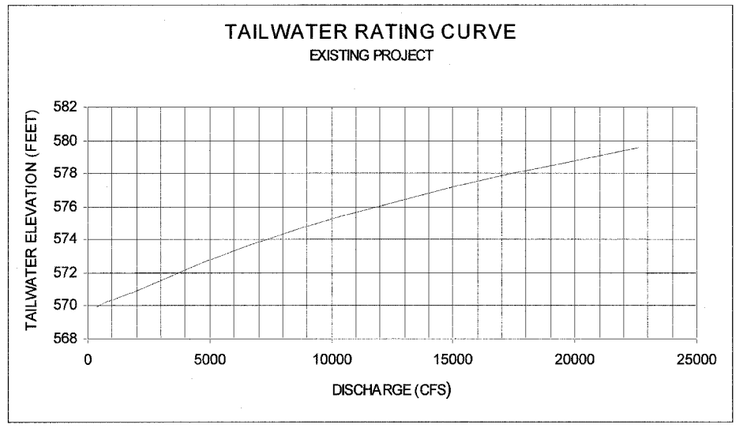
* SEE PLANS AND/OR SPECIAL PROVISIONS

GENERAL NOTES

1. All elevations are based on N.G.V.D. (National Geodetic Vertical Datum) 1929.
2. All coordinates are NAD 1983 with 1986 Adjustment.
3. The Contractor shall furnish, erect, and when directed by the Engineer, completely remove two construction signs. The exact location of the signs shall be determined by the Engineer in the field.
4. All lateral drainage that exists prior to construction shall be restored as shown on the plans and as directed by the Engineer. Unless otherwise specified all costs of restoration shall be considered incidental to the Contract, and no additional compensation will be allowed.
5. Excavated topsoil and organic Material shall be stock piled in a soil spoil area indicated on sheet 6, as directed by the Engineer, where it shall remain for future construction by others. Up to 200 cubic yards may be stock piled, at the direction of the Engineer. Cost of stock piling topsoil and organic material shall not be paid for separately, but shall be included in the contract unit price per cubic yard for the type of excavation specified. Removal and disposal of unsuitable material in excess of 200 cubic yards will be paid for at the contract unit price per cubic yard for "REMOVAL AND DISPOSAL OF UNSUITABLE MATERIAL".
6. All construction operations shall be contained within the easement area or work limits as indicated on the plans.
7. Class SI Concrete shall be used throughout unless specifically called out otherwise.
8. The Contractor shall submit his proposed method of river diversion and dewatering to the Engineer for approval prior to beginning construction.
9. The Contractor is reminded to protect and restore at his expense, in accordance with Article 107.20 of the Standard Specifications, any private or public property, including access roads, which may be damaged or destroyed due to construction operations.
10. All utilities affected by the improvement shall be adjusted by others except as noted in the plans. Prior to beginning work in the vicinity of the utilities, the Contractor shall contact the respective owners as shown on sheet 2, and he shall schedule his work so as not to interfere with these adjustments.
11. Unless otherwise specified, all utilities shall be protected and not disturbed. All drainage outfalls shall be protected and maintained. All costs of protection shall be considered incidental to the contract, and no additional compensation will be allowed.
12. All open excavations are to be surrounded with a 4'-0" construction fence during non-working hours. The fence material shall be approved by the Engineer. The cost shall be included in the contract unit price per cubic yard for the type of excavation specified.
13. The existing headwater and tailwater gages shall remain operational at all times during construction. The Engineer will relocate the gages as needed at the Department's expense. The contractor shall allow the Engineer and his personnel onto the site for these purposes. The tailwater gage intake shall be modified for the after-project condition, for which pay items are included in this contract.
14. All borrow and/or disposal sites off project right-of-way shall be approved through the IDNR CERP (Comprehensive Enviromental Review Process) to avoid potential wetland, cultural resource or endangered species impacts.
15. The Contractor shall remove any construction road built to access the north dam abutment. Restoration of the area corresponding to the removed road shall be required by removing all aggregate base course material, and then providing a minimum 4-in layer of topsoil, seeding, mulching and fertilizing of the affected area. Cost of removing the road and restoring the affected area shall not be paid for separately, but shall be included in the contract unit price per acre for "SEEDING, MULCHING AND FERTILIZING".
16. All access to the construction site shall be provided by the Contractor within the temporary easement shown on the plans. Cost of providing access to the site for construction equipment, materials and other items shall not be paid for separately, but shall be included in the overall construction price for the project.
17. All wetlend areas indicated on the plans shall remain undisturbed by any construction activities.
18. All dimensions on plans are in feet unless otherwise noted.
19. Contractor employee vehicles shall be parked within the temporary construction easement.
20. Access to Commonwealth Edison Company Substation and Parks Department Building shall not be obstructed by the Contractor.
21. Competent rock or firm bedrock shall exhibit a rock fabric that is solid and that is not removable with hand tools. It shall offer notable resistance when impacted by a Swiss or Schmidt hammer. Highly weathered and/or easily fractured materials or materials exhibiting a soil-like matrix shall not be considered as firm bedrock or competent rock.



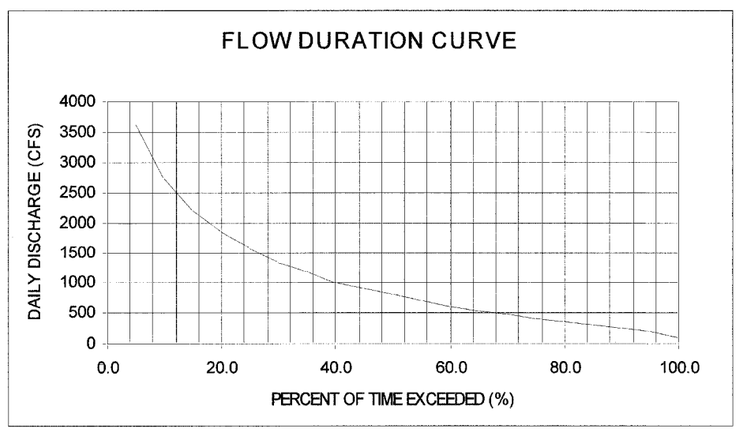




Floods Frequency Estimates

Recurrence Interval (yr)	*River* Flow (cfs)*
Annual Mean Discharge	*790*
April Mean Discharge	*1750*
1	*5000*
2	*7000*
5	*8900*
10	*10580*
50	*15221*
100	*17697*
500	*22615*

** These river flows were estimated in the Kendall County Flood Insurance Study dated May 15, 2002*



Notes:

The rating curves and duration curve for the dam site are shown on this sheet solely for the information of the Contractor in timing his construction operations to prepare for such flood storage and/or to bypass such flows as may be necessary. The Department assumes no responsibility for any deduction, interpretations, or conclusions that may be made from the curves.

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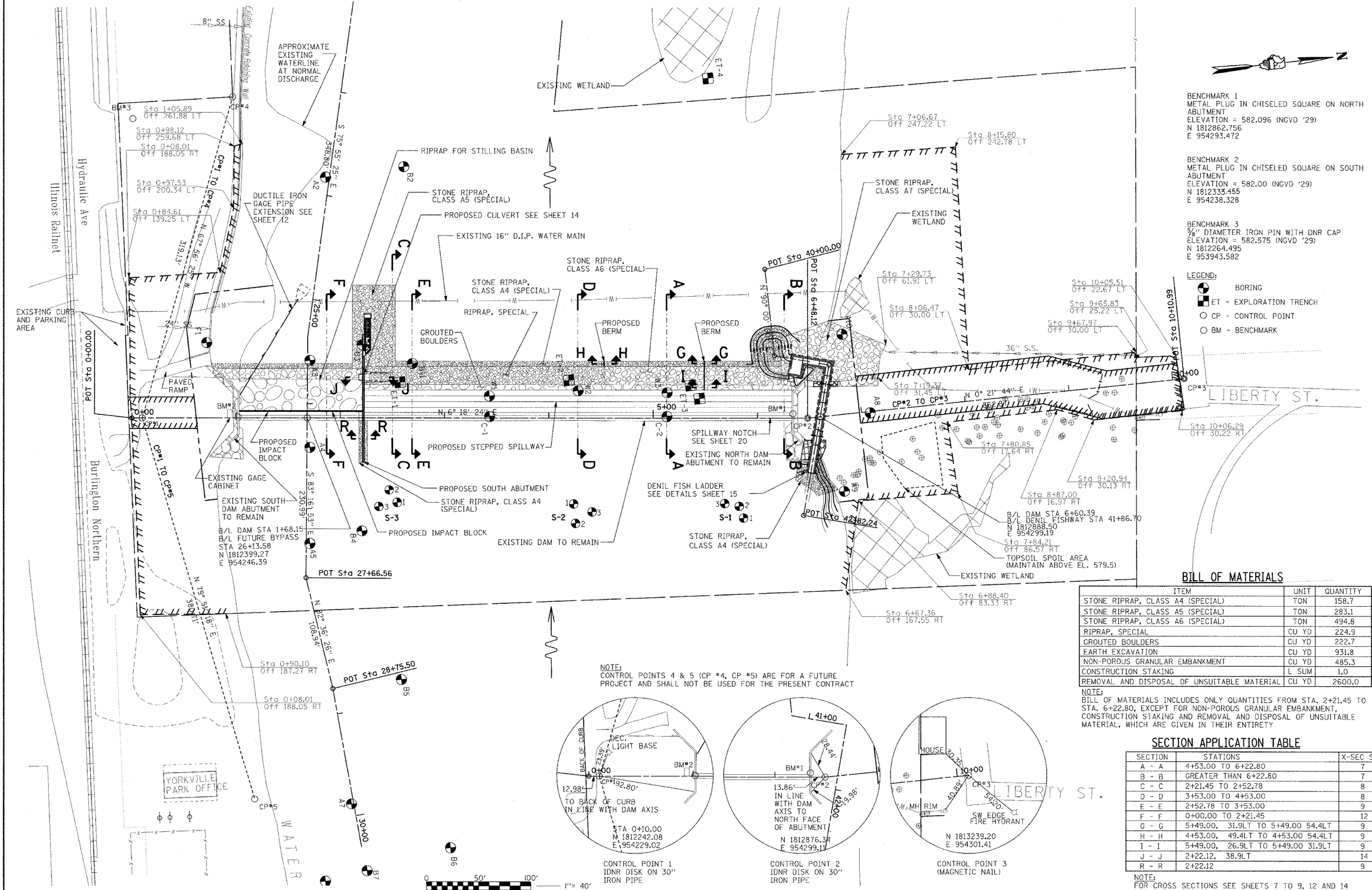
TENG
TENG & ASSOCIATES, INC.
ENGINEERS/ARCHITECTS/PLANNERS
205 N. MICHIGAN AVE. CHICAGO, IL 60601
TELEPHONE: 312/616-0000



BILL OF MATERIALS

ITEM	UNIT	QUANTITY
STONE RIPRAP, CLASS A4 (SPECIAL)	TON	158.7
STONE RIPRAP, CLASS A5 (SPECIAL)	TON	283.1
STONE RIPRAP, CLASS A6 (SPECIAL)	TON	494.8
RIPRAP, SPECIAL	CU YD	224.9
GROUTED BOULDERS	CU YD	222.7
EARTH EXCAVATION	CU YD	931.8
NON-POROUS GRANULAR EMBANKMENT	CU YD	485.3
CONSTRUCTION STAKING	L SUM	1.0
REMOVAL AND DISPOSAL OF UNSUITABLE MATERIAL	CU YD	2600.0

NOTE:
BILL OF MATERIALS INCLUDES ONLY QUANTITIES FROM STA. 2+21.45 TO STA. 6+22.80, EXCEPT FOR NON-POROUS GRANULAR EMBANKMENT, CONSTRUCTION STAKING AND REMOVAL AND DISPOSAL OF UNSUITABLE MATERIAL, WHICH ARE GIVEN IN THEIR ENTIRETY

SECTION APPLICATION TABLE

SECTION	STATIONS	X-SEC SHT
A - A	4+53.00 TO 6+22.80	7
B - B	GREATER THAN 6+22.80	7
C - C	2+21.45 TO 2+52.78	8
D - D	3+53.00 TO 4+53.00	8
E - E	2+52.78 TO 3+53.00	9
F - F	0+00.00 TO 2+21.45	12
G - G	5+49.00, 31.9LT TO 5+49.00 54.4LT	9
H - H	4+53.00, 49.4LT TO 4+53.00 54.4LT	9
I - I	5+49.00, 26.9LT TO 5+49.00 31.9LT	9
J - J	2+22.12, 38.9LT	14
R - R	2+22.12	9

NOTE:
FOR CROSS SECTIONS SEE SHEETS 7 TO 9, 12 AND 14

FR-422

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ENGINEERS/ARCHITECTS/PLANNERS
205 N. MICHIGAN AVE. CHICAGO, IL 60601
TELEPHONE: 312/616-0000

GENERAL PROJECT PLAN AND BORING LOCATIONS

Designed by MD Checked by RJM
Drawn by MD Checked by RJM
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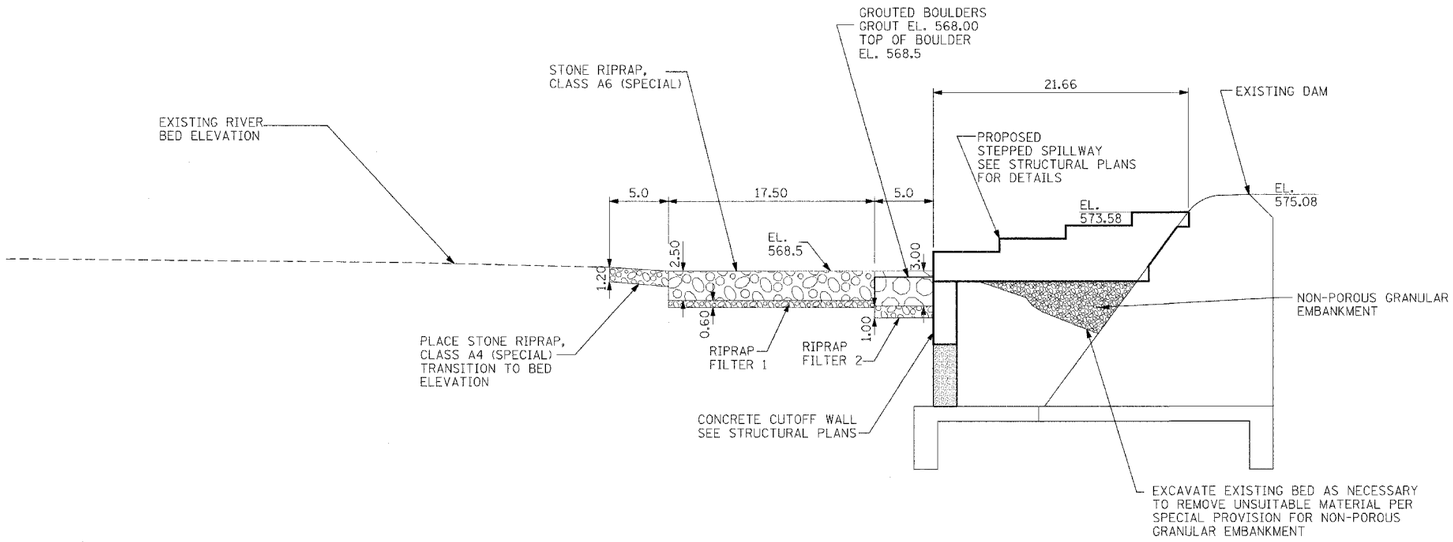
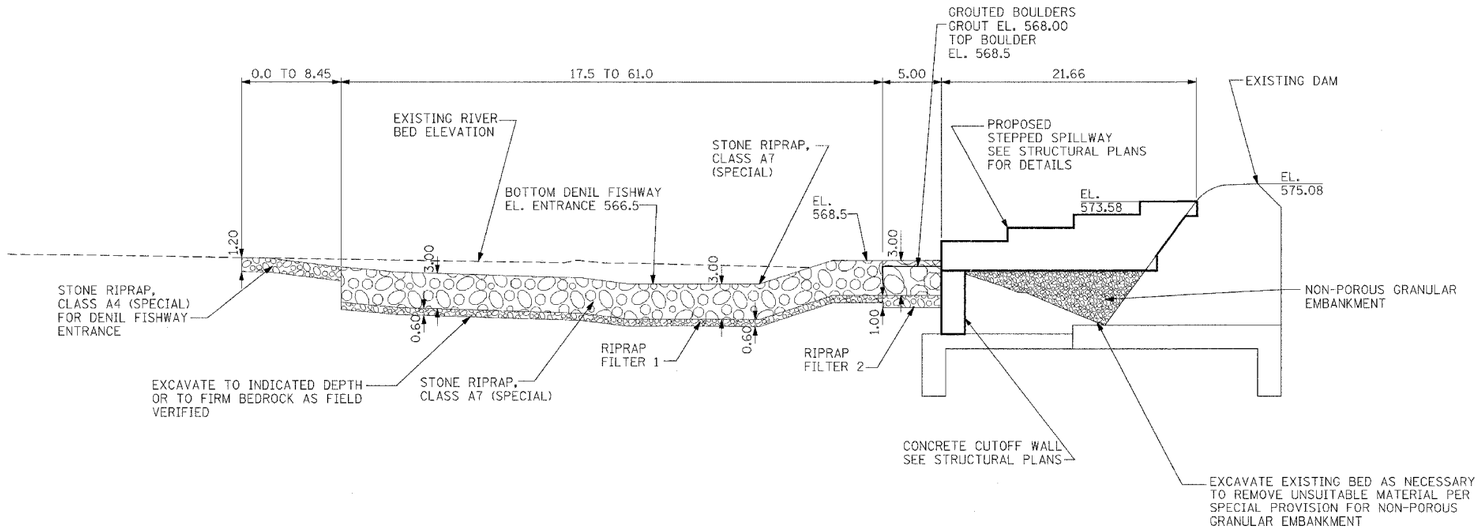


SECTION A-A



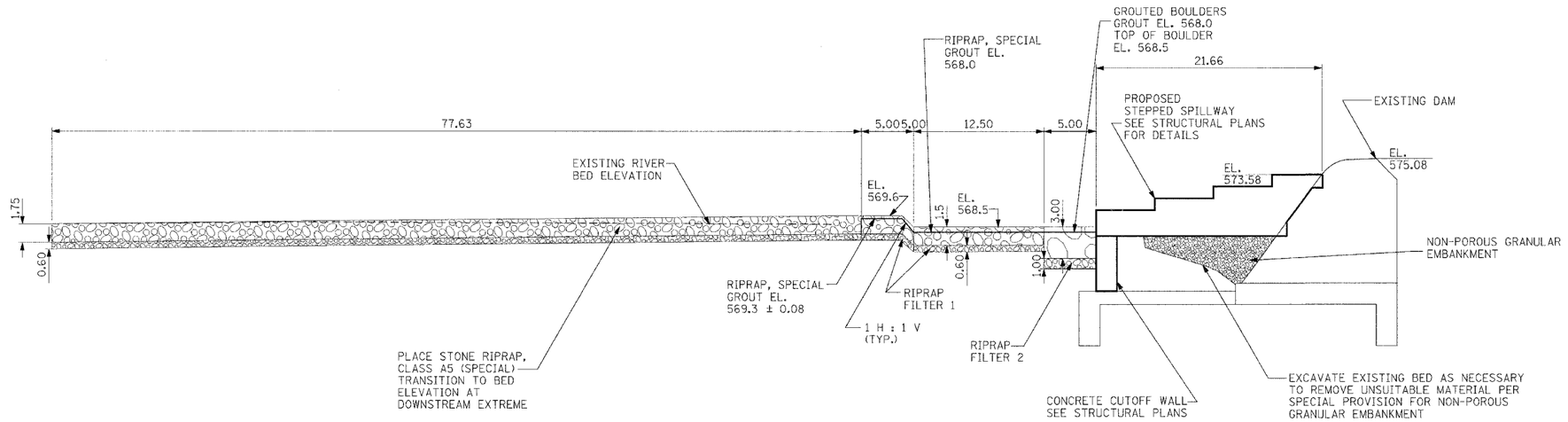
SECTION B-B

NOTE:
1. EXCAVATION FOR RIPRAP SHALL BE TO THE INDICATED DEPTHS, OR TO FIRM BEDROCK IF ENCOUNTERED AT A HIGHER ELEVATION
2. RIPRAP FILTER(S) ARE NOT REQUIRED UNDER STONE RIPRAP, (SPECIAL) WHEN PLACED ON FIRM BEDROCK
3. GROUTED BOULDERS AND RIPRAP, SPECIAL REQUIRE RIPRAP FILTER AT ALL LOCATIONS.
4. SEE SHEET 15 FOR DENIL FISHWAY DETAILS
5. RIPRAP FILTER(S) ARE NOT REQUIRED UNDER STONE RIPRAP CLASS A4 (SPECIAL) WHEN PLACED ON AN IN SITU BEDDING MATERIAL THAT IS A POROUS MATERIAL WITH SIMILARLY SIZED MATERIAL OR WHEN PLACED DIRECTLY ON FIRM BEDROCK.

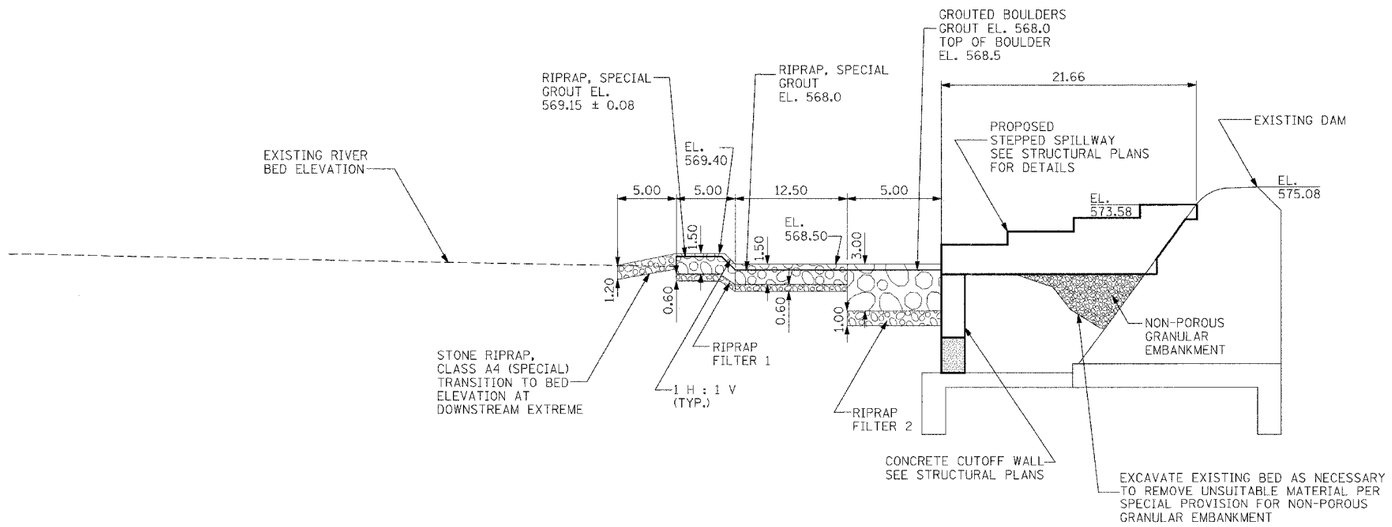
0 10' 20' — 1"= 6'

FR-422

TENG
TENG & ASSOCIATES, INC.
ENGINEERS/ARCHITECTS/PLANNERS
205 N. MICHIGAN AVE. CHICAGO, IL 60601
TELEPHONE: 312/616-0000



SECTION C-C



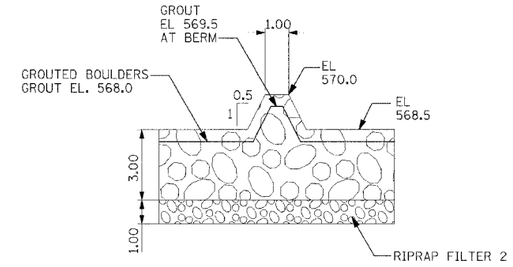
SECTION D-D

NOTE:
1. EXCAVATION FOR RIPRAP SHALL BE TO THE INDICATED DEPTHS, OR TO FIRM BEDROCK IF ENCOUNTERED AT A HIGHER ELEVATION
2. RIPRAP FILTER(S) ARE NOT REQUIRED UNDER STONE RIPRAP, (SPECIAL) WHEN PLACED ON FIRM BEDROCK
3. GROUTED BOULDERS AND RIPRAP, SPECIAL REQUIRE RIPRAP FILTER AT ALL LOCATIONS.
4. FOR SECTION C-C, SEE ALSO SHEET 14
5. RIPRAP FILTER(S) ARE NOT REQUIRED UNDER STONE RIPRAP CLASS A4 (SPECIAL) WHEN PLACED ON AN IN SITU BEDDING MATERIAL THAT IS A POROUS MATERIAL WITH SIMILARLY SIZED MATERIAL OR WHEN PLACED DIRECTLY ON FIRM BEDROCK.

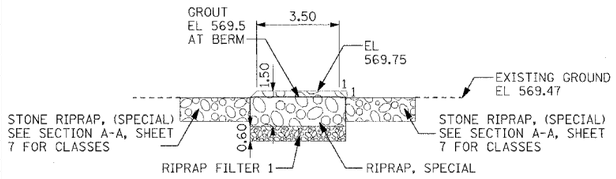
0 10' 20' 1"= 6'

FR-422

TENG
TENG & ASSOCIATES, INC.
ENGINEERS/ARCHITECTS/PLANNERS
205 N. MICHIGAN AVE. CHICAGO, IL 60601
TELEPHONE: 312/616-0000



SECTION I-I



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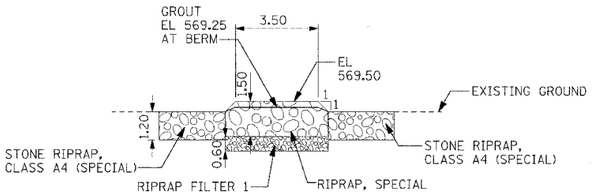

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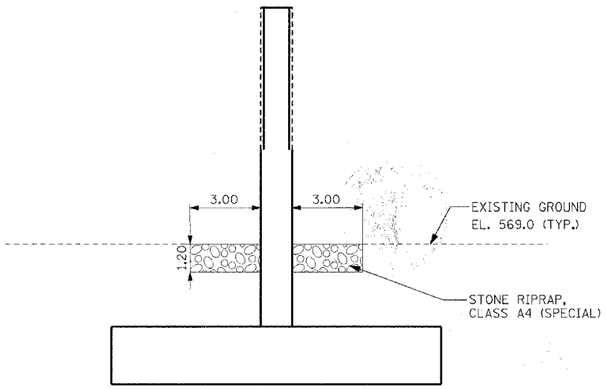

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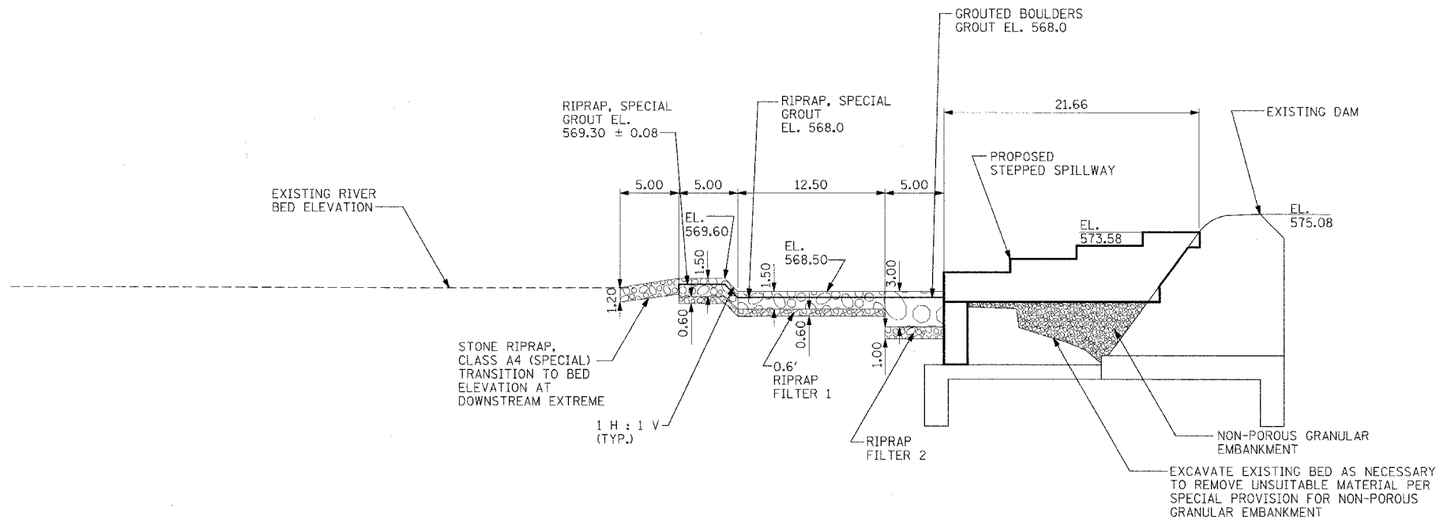

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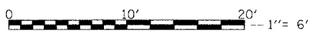

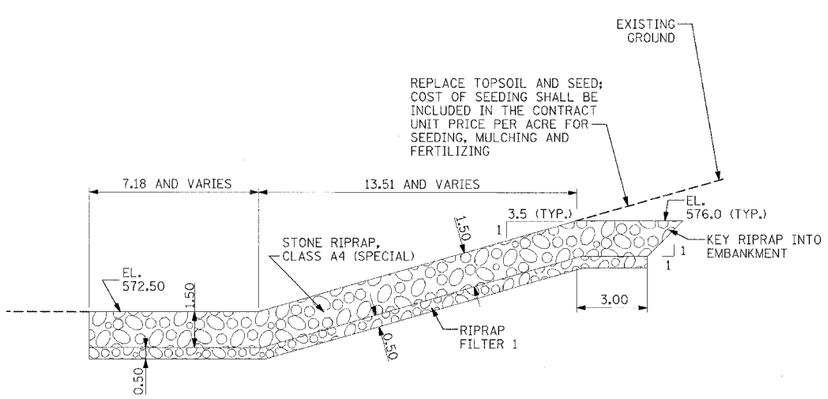

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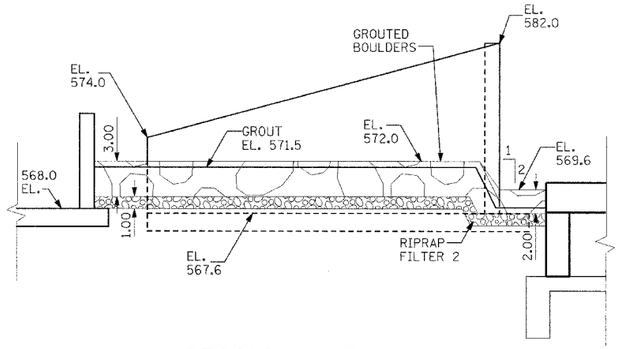

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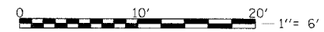
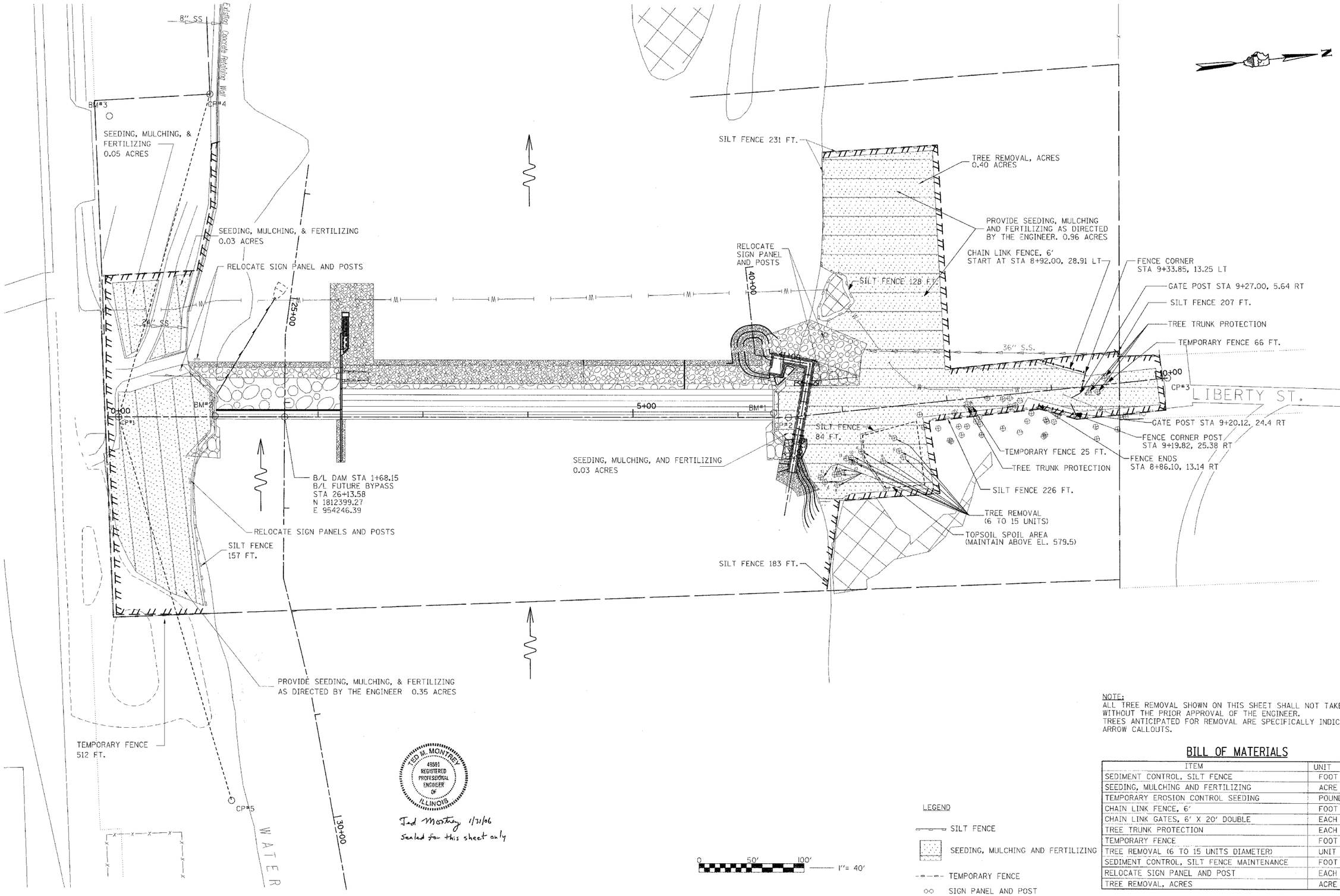


NOTE:
1. EXCAVATION FOR RIPRAP SHALL BE TO THE INDICATED DEPTHS, OR TO FIRM BEDROCK IF ENCOUNTERED AT A HIGHER ELEVATION
2. RIPRAP FILTER IS NOT REQUIRED UNDER STONE RIPRAP, (SPECIAL) WHEN PLACED ON FIRM BEDROCK
3. GROUTED BOULDERS AND RIPRAP, SPECIAL REQUIRE RIPRAP FILTER AT ALL LOCATIONS.
4. RIPRAP FILTER(S) ARE NOT REQUIRED UNDER STONE RIPRAP CLASS A4 (SPECIAL) WHEN PLACED ON AN IN SITU BEDDING MATERIAL THAT IS A POROUS MATERIAL WITH SIMILARLY SIZED MATERIAL OR WHEN PLACED DIRECTLY ON FIRM BEDROCK.



TED M. MONTREY
49591
REGISTERED PROFESSIONAL ENGINEER OF ILLINOIS

Ted Montrey 1/31/06
Sealed for this sheet only

LEGEND

- SILT FENCE
- SEEDING, MULCHING AND FERTILIZING
- TEMPORARY FENCE
- SIGN PANEL AND POST

NOTE:
ALL TREE REMOVAL SHOWN ON THIS SHEET SHALL NOT TAKE PLACE WITHOUT THE PRIOR APPROVAL OF THE ENGINEER.
TREES ANTICIPATED FOR REMOVAL ARE SPECIFICALLY INDICATED WITH ARROW CALLOUTS.

BILL OF MATERIALS

ITEM	UNIT	QUANTITY
SEDIMENT CONTROL, SILT FENCE	FOOT	1216
SEEDING, MULCHING AND FERTILIZING	ACRE	1.42
TEMPORARY EROSION CONTROL SEEDING	POUND	142
CHAIN LINK FENCE, 6'	FOOT	102
CHAIN LINK GATES, 6' X 20' DOUBLE	EACH	1
TREE TRUNK PROTECTION	EACH	4
TEMPORARY FENCE	FOOT	603
TREE REMOVAL (6 TO 15 UNITS DIAMETER)	UNIT	114
SEDIMENT CONTROL, SILT FENCE MAINTENANCE	FOOT	365
RELOCATE SIGN PANEL AND POST	EACH	5
TREE REMOVAL, ACRES	ACRE	0.40

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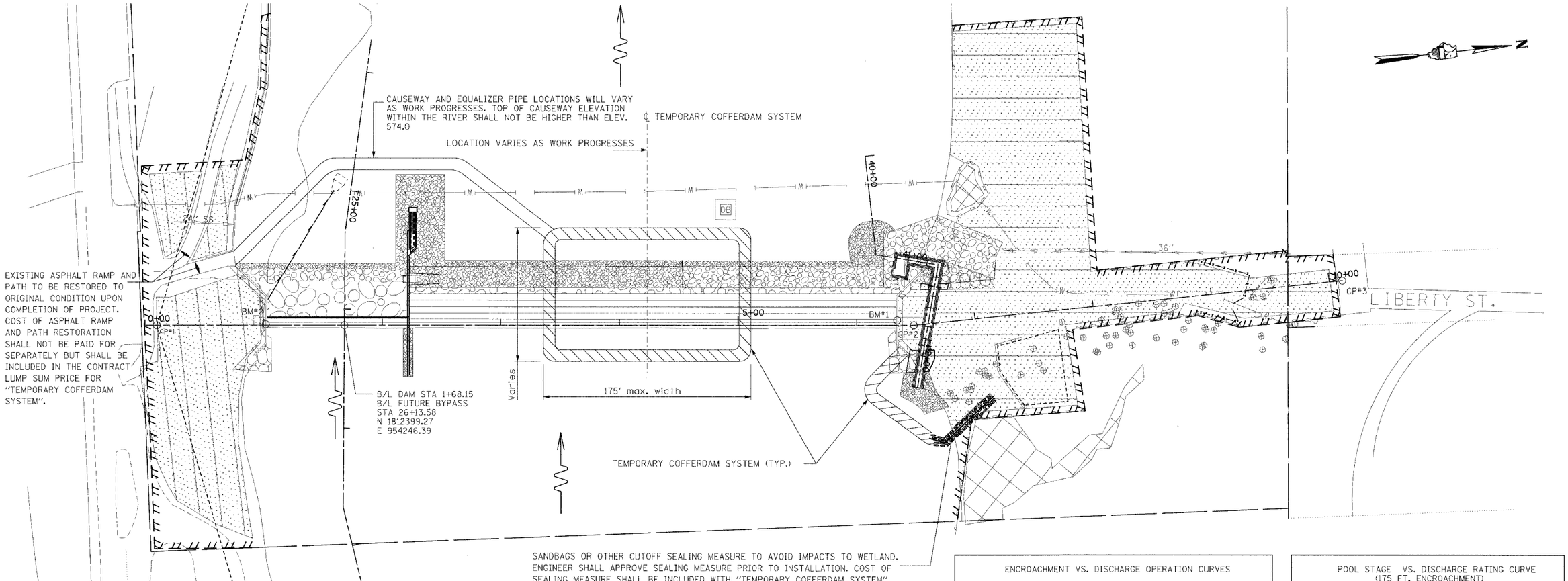


TEMPORARY COFFERDAM SYSTEM NOTES:

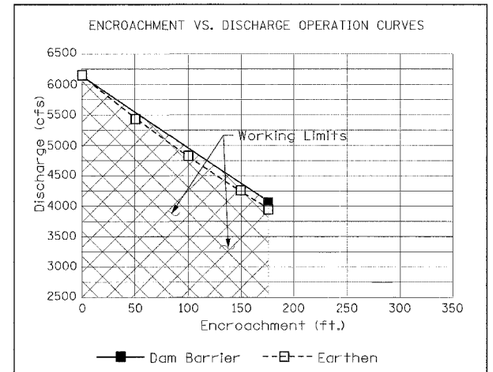
THE TEMPORARY COFFERDAM SYSTEM SHALL BE DESIGNED AND CONSTRUCTED BY THE CONTRACTOR. THE WIDTH OF THE COFFERDAM PERPENDICULAR TO THE RIVER SHALL BE DETERMINED BY THE CONTRACTOR BASED UPON THE "ENCROACHMENT VERSUS DISCHARGE" OPERATION CURVES SHOWN ON THIS SHEET. THESE CURVES REPRESENT ACCEPTABLE WATER SURFACE PROFILES DIRECTLY UPSTREAM OF THE COFFERDAM SYSTEM FOR VARIOUS DISCHARGES AT VARIOUS COFFERDAM ENCROACHMENTS. THE "LOWER" CURVE ESTABLISHES THE LIMITS FOR AN EARTHEN TYPE COFFERDAM SYSTEM CONSTRUCTED IN THE POOL AREA UPSTREAM OF THE DAM. THE "UPPER" CURVE ESTABLISHES THE LIMITS FOR A PREFABRICATED TYPE COFFERDAM SYSTEM CONSTRUCTED ON THE CREST OF THE EXISTING DAM.

THE CONTRACTOR SHALL AT ALL TIMES OPERATE WITHIN THE LIMITS STATED ABOVE. IN ADDITION TO THESE LIMITS THE CONTACTOR SHALL NOT CONSTRUCT A COFFERDAM OR MULTIPLE COFFERDAMS WITH A TOTAL ENCROACHMENT WIDER THAN 175 FEET PERPENDICULAR TO THE RIVER. THE CONTRACTOR SHALL DETERMINE THE MAXIMUM WIDTH OF THE COFFERDAM PERPENDICULAR TO THE RIVER BASED UPON THE ENCROACHMENT VS. DISCHARGE OPERATION CURVES. THE CONTRACTOR SHALL NOT BE ALLOWED TO WORK ON MORE THAN TWO SECTIONS (SEE SHEET 16 OF 44) OF THE SPILLWAY AT A TIME.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS IF HE/SHE CHOOSES TO BUILD AND/OR OPERATE THE COFFERDAM SUCH THAT THE UPPER LIMITS ON THE "ENCROACHMENT VERSUS DISCHARGE" OPERATION CURVES ARE VIOLATED, AT NO EXTRA COST TO THE DEPARTMENT.

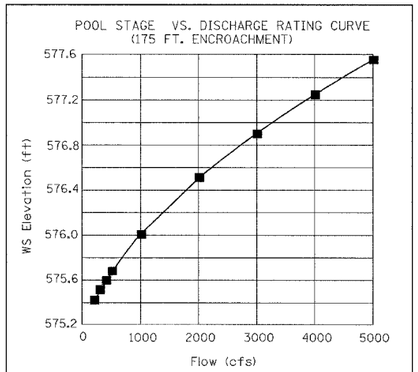
THE CONTRACTOR SHALL ASSUME ALL RISKS OF DAMAGES TO HIS EQUIPMENT AND MATERIALS CAUSED BY COFFERDAM OVERTOPPING OR FAILURE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF HIS PERSONNEL IN THE CASE OF COFFERDAM OVERTOPPING OR FAILURE.

THE COFFERDAM SYSTEM SHALL BE MOVED DOWN TO THE TOP OF THE EXISTING DAM CREST ELEVATION WHEN IT BECOMES EVIDENT THAT THE COFFERDAM SYSTEM WILL VIOLATE THE CRITERIA SET FORTH ABOVE. THE COST OF THIS ADJUSTMENT SHALL BE INCLUDED IN "TEMPORARY COFFERDAM SYSTEM".



OPERATION CURVE ORDINATES

	Encroachment (feet)				
Type	175	150	100	50	0
Dam Barrier	4,075	—	—	—	6,133
Earthen	3,950	4,250	4,833	5,433	6,150
	Discharge (cubic feet per second)				



RATING CURVE ORDINATES

Flow (cfs)	WS Elev. (ft)
200	575.42
300	575.52
400	575.60
500	575.68
1000	576.01
2000	576.51
3000	576.90
4000	577.25
5000	577.56

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OF
ILLINOIS

Ted Montrey 10/14/05
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0 50' 100' — 1"= 40'

LEGEND

DB DEWATERING BASIN

BILL OF MATERIALS

ITEM	UNIT	QUANTITY
TEMPORARY COFFERDAM SYSTEM	L SUM	1

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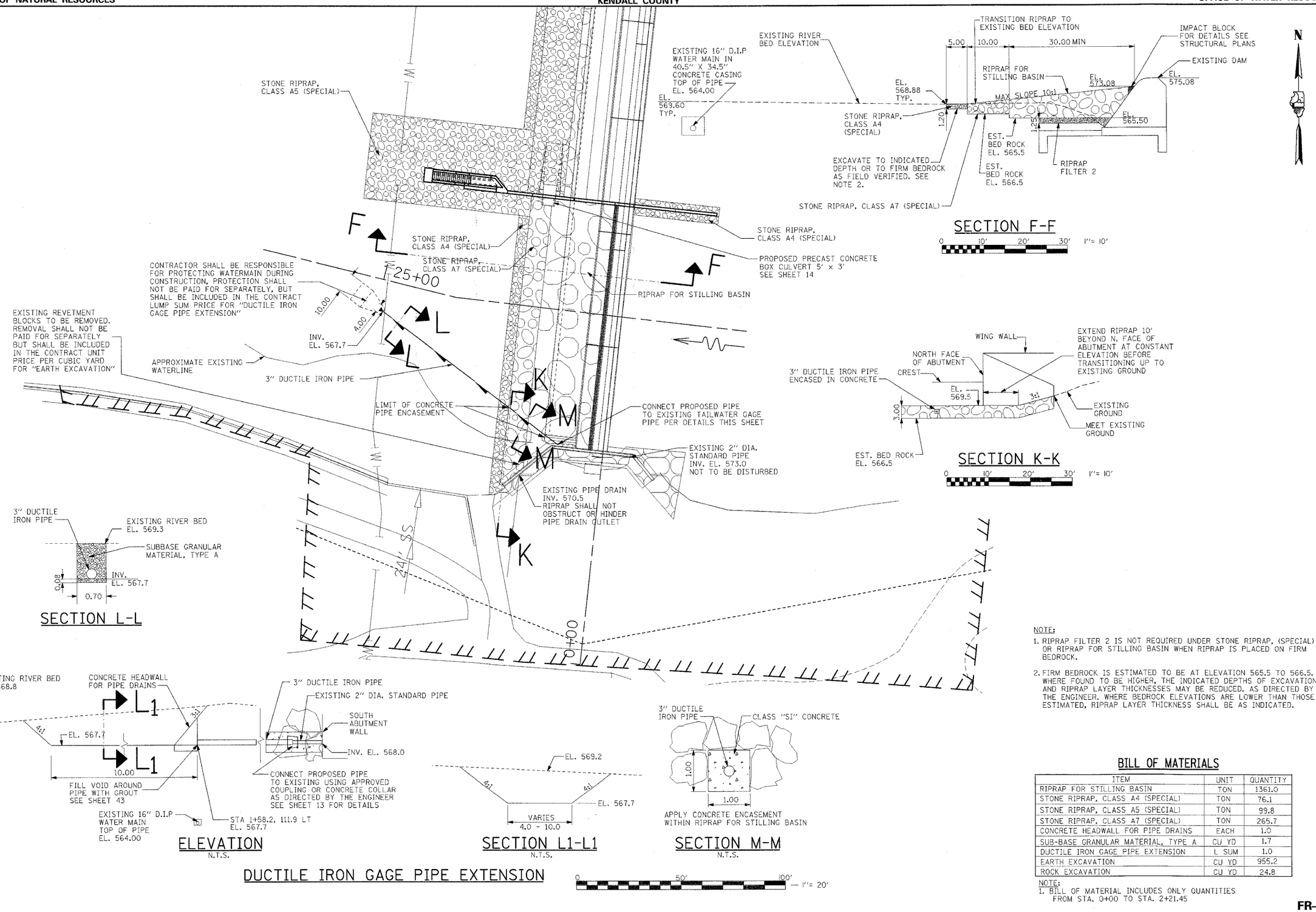

DUCTILE IRON GAGE PIPE EXTENSION

0 50' 100' 1"= 20'

NOTE:
1. RIPRAP FILTER 2 IS NOT REQUIRED UNDER STONE RIPRAP, (SPECIAL) OR RIPRAP FOR STILLING BASIN WHEN RIPRAP IS PLACED ON FIRM BEDROCK.
2. FIRM BEDROCK IS ESTIMATED TO BE AT ELEVATION 565.5 TO 566.5. WHERE FOUND TO BE HIGHER, THE INDICATED DEPTHS OF EXCAVATION AND RIPRAP LAYER THICKNESSES MAY BE REDUCED, AS DIRECTED BY THE ENGINEER. WHERE BEDROCK ELEVATIONS ARE LOWER THAN THOSE ESTIMATED, RIPRAP LAYER THICKNESS SHALL BE AS INDICATED.

BILL OF MATERIALS

ITEM	UNIT	QUANTITY
RIPRAP FOR STILLING BASIN	TON	1361.0
STONE RIPRAP, CLASS A4 (SPECIAL)	TON	76.1
STONE RIPRAP, CLASS A5 (SPECIAL)	TON	99.8
STONE RIPRAP, CLASS A7 (SPECIAL)	TON	265.7
CONCRETE HEADWALL FOR PIPE DRAINS	EACH	1.0
SUB-BASE GRANULAR MATERIAL, TYPE A	CU YD	1.7
DUCTILE IRON GAGE PIPE EXTENSION	L SUM	1.0
EARTH EXCAVATION	CU YD	955.2
ROCK EXCAVATION	CU YD	24.8

NOTE:
1. BILL OF MATERIAL INCLUDES ONLY QUANTITIES FROM STA. 0+00 TO STA. 2+21.45

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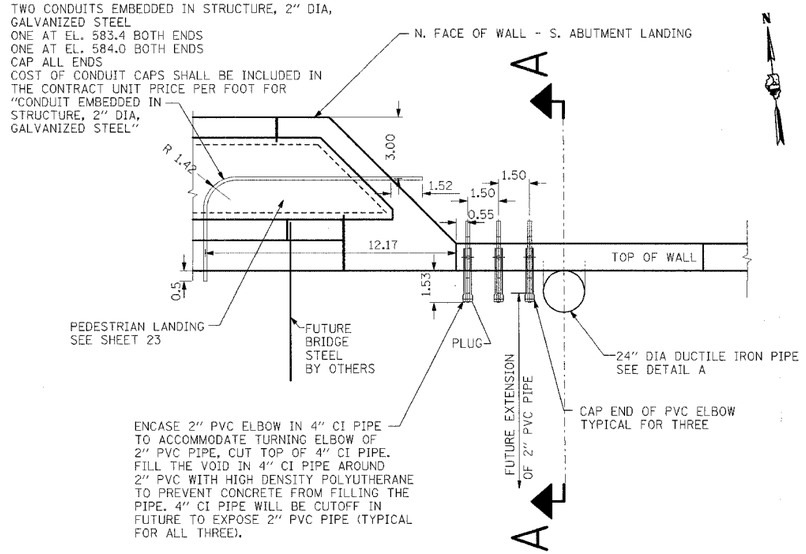
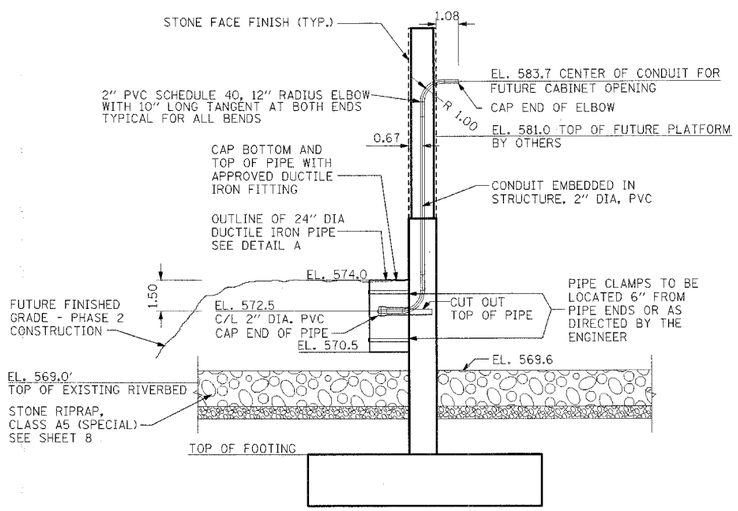


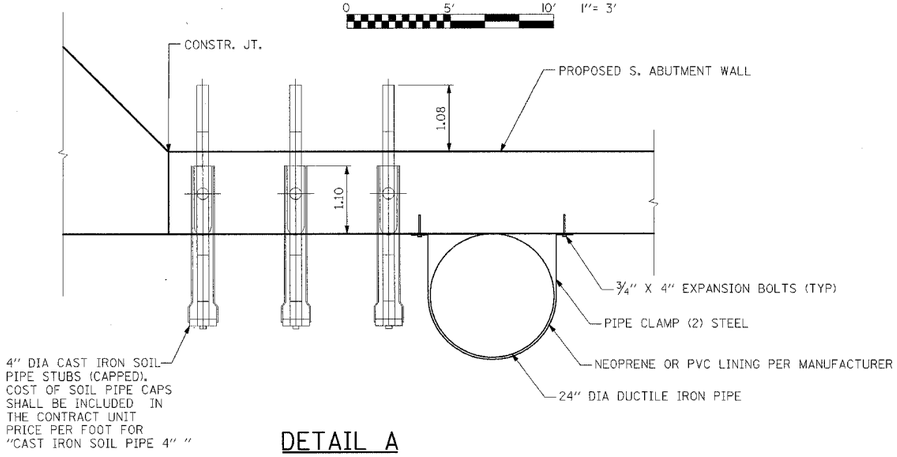
PLAN

0 5' 10' 1"= 3'



SECTION A - A

0 5' 10' 1"= 3'

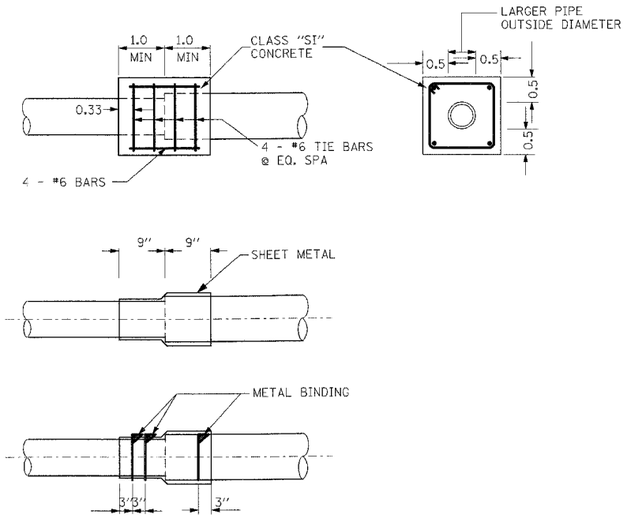


DETAIL A

NOTE:
1) 24" DUCTILE IRON PIPE, PIPE CLAMPS, EXPANSION BOLTS AND LINING WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR "DUCTILE IRON PIPE PROTECTION SYSTEM"

2) 2" PVC SCHEDULE 40, 12" RADIUS ELBOWS, AND ALL OTHER PVC FITTINGS SHALL BE PAID AT THE CONTRACT UNIT PRICE PER FOOT FOR "CONDUIT EMBEDDED IN STRUCTURE, 2" DIA, PVC"

CONDUIT EMBEDDED IN CONCRETE AND DUCTILE IRON PIPE PROTECTION



CONSTRUCTION SEQUENCE

1. CUT THE EXISTING END OF THE PIPE SO AS TO PRESENT A FLUSH BUTT JOINT, BRUSH AND CLEAN ALL PIPES.
2. APPLY THE MASTIC JOINT SEALANT TO THE FIRST (6") OF EACH PIPE.
3. BUTT THE PIPES TOGETHER LEAVING A MINIMUM OF 12" x 6" DEEP EXCAVATION UNDER AND AROUND EACH PIPE END.
4. CUT A PIECE OF SHEET METAL GAGE NO. 19 18" WIDE BY THE OUTSIDE CIRCUMFERENCE OF THE LARGER PIPE PLUS 3" LONG.
5. WRAP THE SHEET METAL AROUND THE PIPES. 9" ON EACH SIDE OF THE JOINT. STARTING AT THE TOP OF THE PIPE.
6. LAP THE SHEET METAL AT LEAST 3" AT THE TOP OF THE PIPE AND PLACE THE MASTIC JOINT SEALANT BETWEEN THE LAP.
7. PLACE THREE METAL BANDS AROUND THE SHEET METAL AND TIGHTEN.
8. WIPE OFF ANY EXCESS MASTIC JOINT SEALANT THAT OOZES OUT FROM BETWEEN THE SHEET METAL AND THE PIPES.
9. PLACE CLASS SI CONCRETE AROUND THE JOINT.

DETAIL OF CLASS "SI" CONCRETE COLLAR

BILL OF MATERIALS

ITEM	UNIT	QUANTITY
CONDUIT EMBEDDED IN STRUCTURE, 2" DIA, GALVANIZED STEEL	FT	29.8
CONDUIT EMBEDDED IN STRUCTURE, 2" DIA, PVC	FT	42.7
DUCTILE IRON PIPE PROTECTION SYSTEM	L SUM	1
CAST IRON SOIL PIPE 4"	FOOT	7.9

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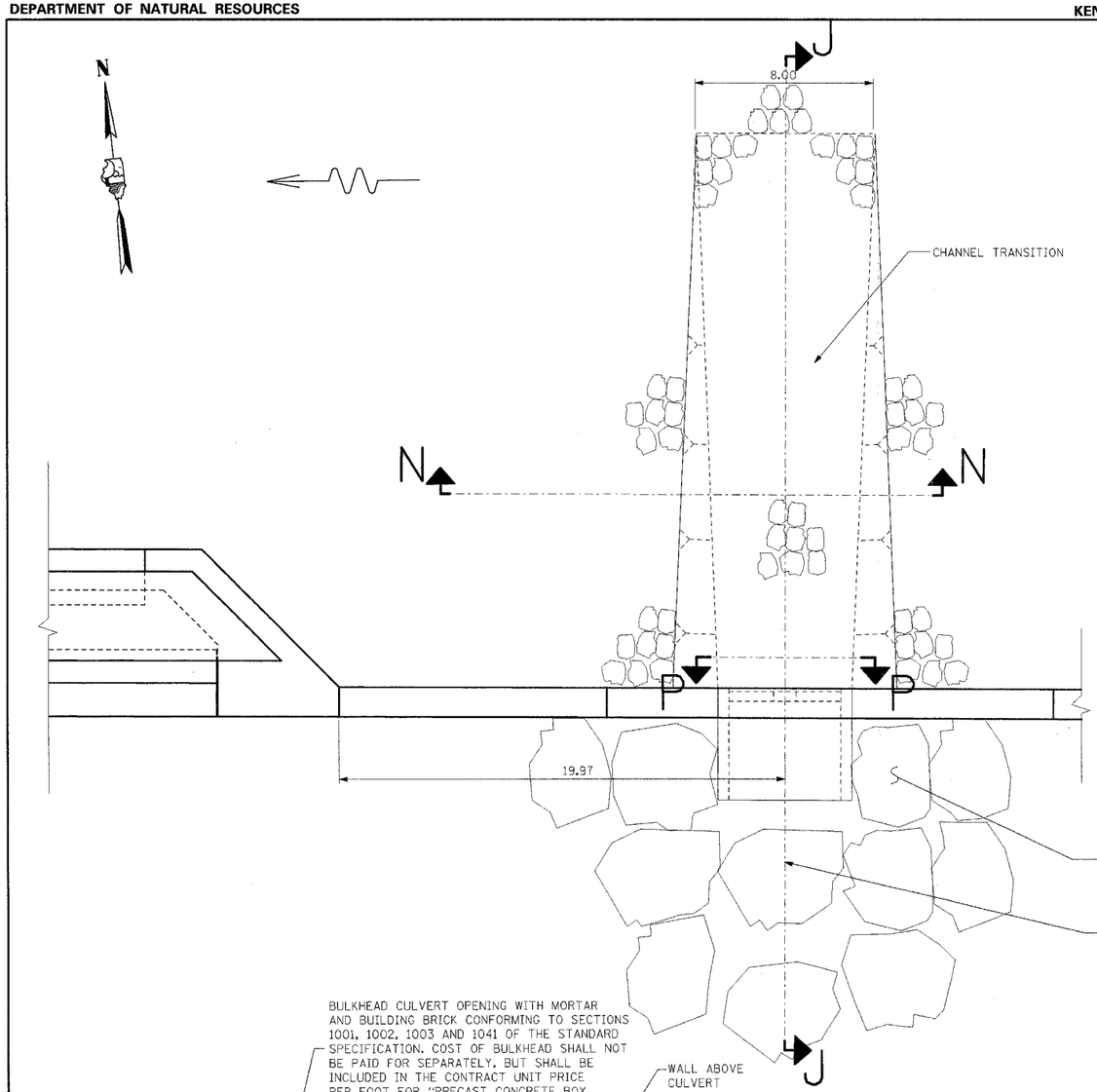

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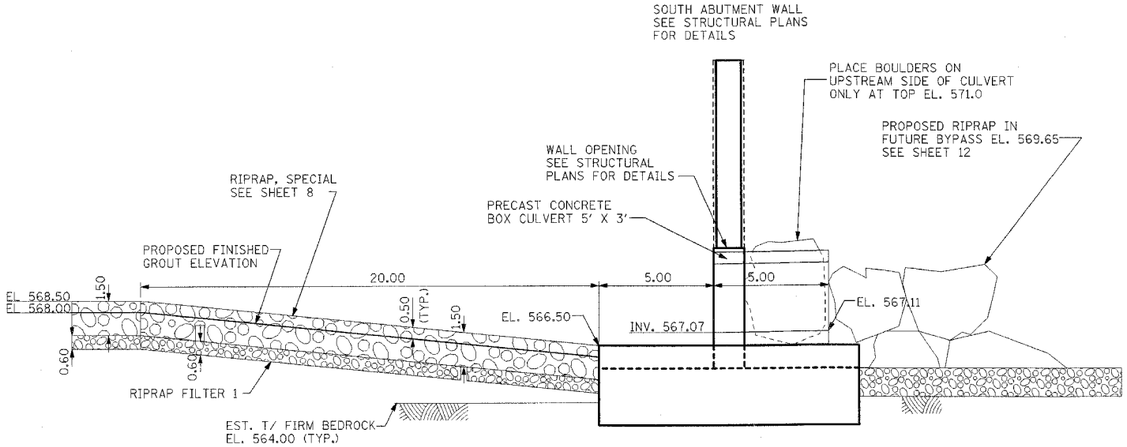
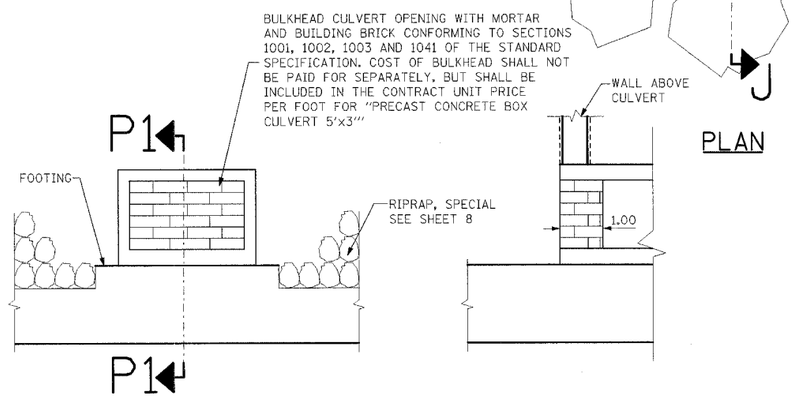
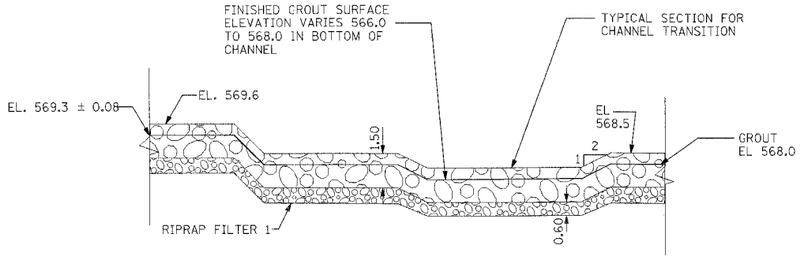


5' X 3' BOX CULVERT SECTION
SECTION J - J



SECTION P - P
N. T. S.

SECTION P1 - P1
N. T. S.



SECTION N - N
N. T. S.

BILL OF MATERIALS

ITEM	UNIT	QUANTITY
PRECAST CONCRETE BOX CULVERT 5' X 3'	FOOT	5.0

CHANNEL TRANSITION DETAILS

0 5' 10' 1"= 3'

FR-422

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STONE RIPRAP, CLASS A7 (SPECIAL)
TOP OF RIPRAP TO MATCH EXISTING GROUND FOR ALL ELEVATIONS GREATER THAN 568.5; FOR ELEVETIONS LESS THAN 568.5 SEE SHEET 7

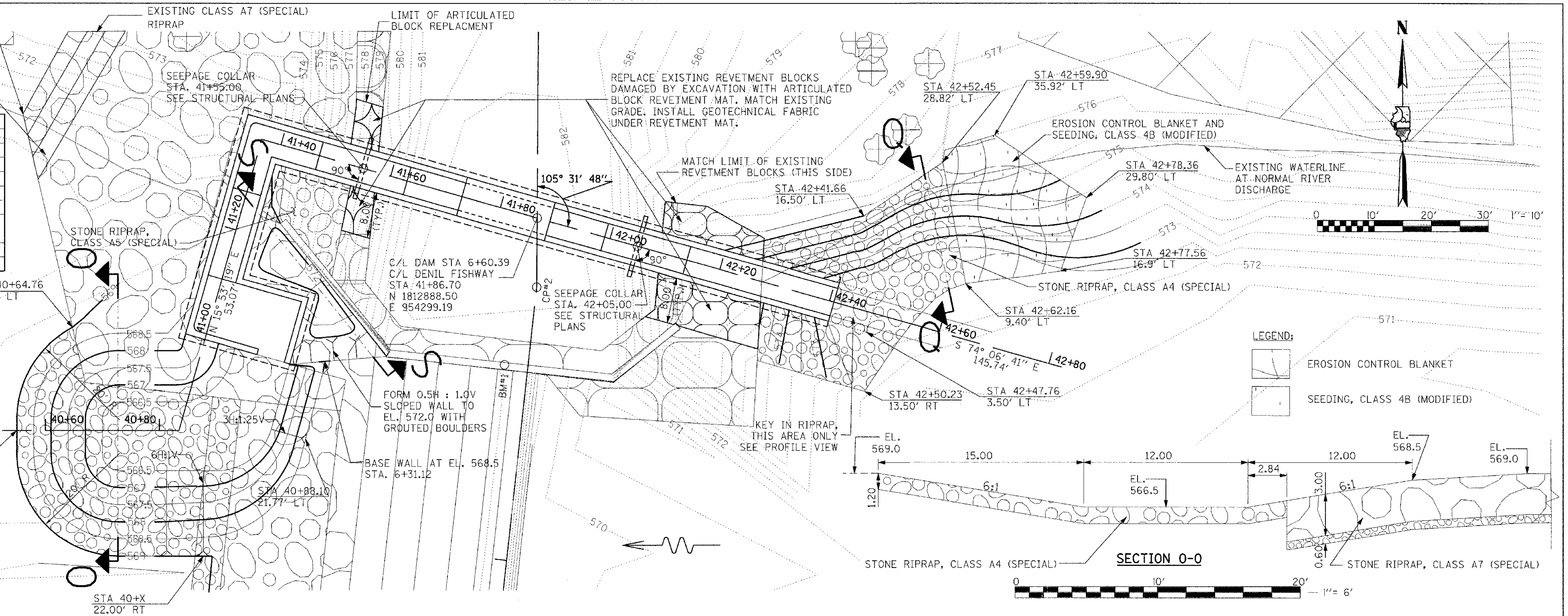
BILL OF MATERIALS

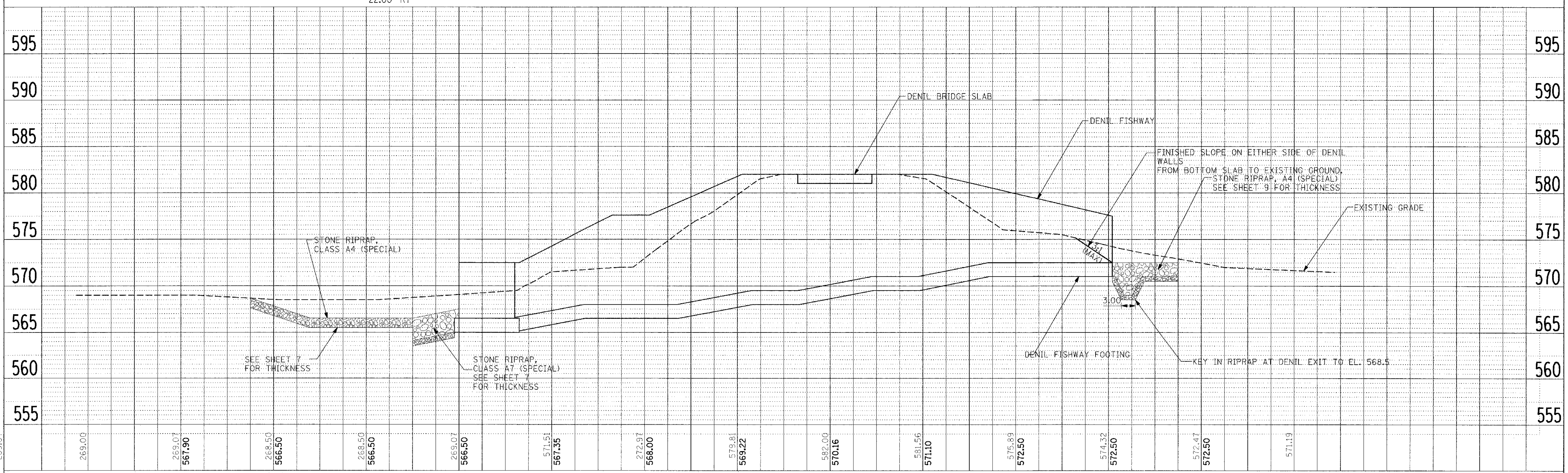
ITEM	UNIT	QUANTITY
STONE RIPRAP, CLASS A4 (SPECIAL)	TON	160.7
STONE RIPRAP, CLASS A7 (SPECIAL)	TON	630
STONE RIPRAP, CLASS A5 (SPECIAL)	TON	19.2
GROUTED BOULDERS	CU YD	34.4
EARTH EXCAVATION	CU YD	761.1
ARTICULATED BLOCK REVETMENT MAT	SQ YD	36.6
GEOTECHNICAL FABRIC FOR GROUND STABILIZATION	SQ YD	36.6
EROSION CONTROL BLANKET	SQ YD	50.7
SEEDING, CLASS 4B (MODIFIED)	ACRE	0.01

NOTE:

1. BILL OF MATERIALS INCLUDES ONLY QUANTITIES GREATER THAN STA. 6+22.80, EXCEPT THAT EXCAVATION AND STONE RIPRAP, CLASS A4 (SPECIAL) DOWNSTREAM OF STA. 40+83.43 ARE ALSO INCLUDED.
2. SLOPED WALL OF GROUTED BOULDERS WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER CUBIC YARD FOR "GROUTED BOULDERS"

   40+00 — 40+20 — 40+40
   N 90° 00' 00" E
   83.42'
3. ARTICULATED BLOCK REVETMENT MAT SHALL MATCH ADJACENT MAT IF POSSIBLE. MAT/BLOCKS MAY BE SALVAGED FROM THE REMOVAL AREAS AND REUSED IF IN GOOD CONDITION.
4. FOR SECTIONS Q-Q AND S-S, SEE SHEET 9
5. REMOVAL OF EXISTING REVETMENT BLOCKS WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE PER CUBIC YARD FOR "STRUCTURE EXCAVATION"

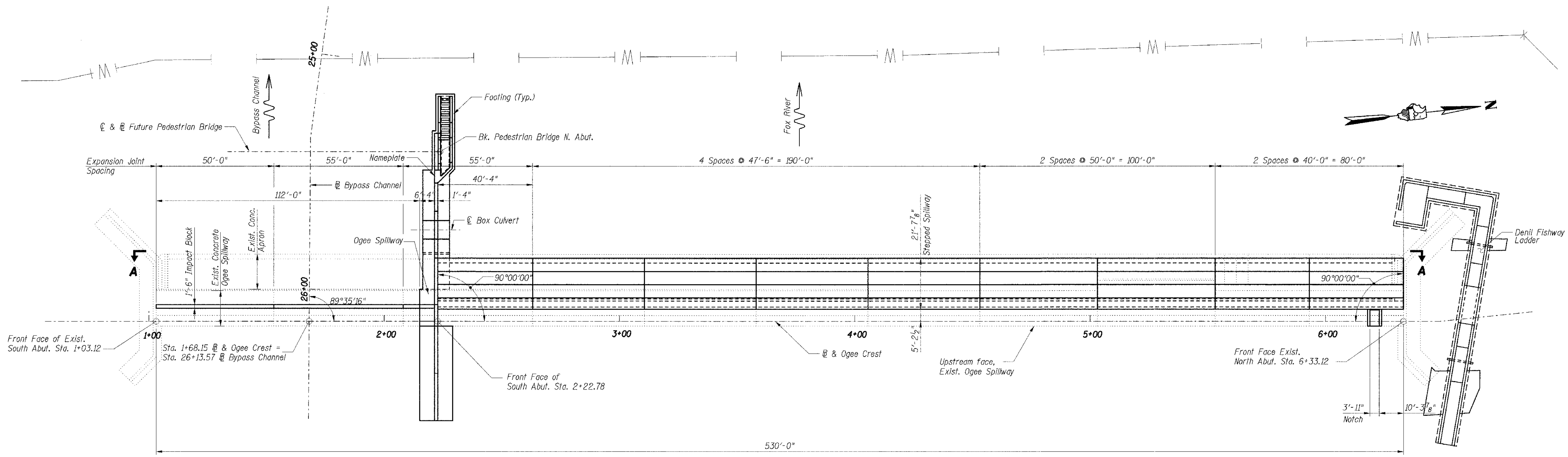

STA 6+77.83
90.27' LT
EXISTING CLASS A7 (SPECIAL) RIPRAP
LIMIT OF ARTICULATED BLOCK REPLACMENT
SEEPAGE COLLAR
STA. 41+55.00
SEE STRUCTURAL PLANS
REPLACE EXISTING REVETMENT BLOCKS DAMAGED BY EXCAVATION WITH ARTICULATED BLOCK REVETMENT MAT. MATCH EXISTING GRADE. INSTALL GEOTECHNICAL FABRIC UNDER REVETMENT MAT.
STA 42+52.45
28.82' LT
STA 42+59.90
35.92' LT
EROSION CONTROL BLANKET AND SEEDING, CLASS 4B (MODIFIED)
STA 42+78.36
29.80' LT
EXISTING WATERLINE AT NORMAL RIVER DISCHARGE
N
1"= 10'
105° 31' 48"
MATCH LIMIT OF EXISTING REVETMENT BLOCKS (THIS SIDE)
STA 42+41.66
16.50' LT
STONE RIPRAP, CLASS A5 (SPECIAL)
STA 40+64.76
18.00' LT
C/L DAM STA 6+60.39
C/L DENIL FISHWAY
STA 41+86.70
N 1812888.50
E 954299.19
SEEPAGE COLLAR
STA. 42+05.00
SEE STRUCTURAL PLANS
STA 42+77.56
16.9' LT
STONE RIPRAP, CLASS A4 (SPECIAL)
STA 42+62.16
9.40' LT
S 74° 06' 41" E
145.74'
LEGEND:
EROSION CONTROL BLANKET
SEEDING, CLASS 4B (MODIFIED)
FORM 0.5H : 1.0V SLOPED WALL TO EL. 572.0 WITH GROUTED BOULDERS
KEY IN RIPRAP, THIS AREA ONLY SEE PROFILE VIEW
STA 42+50.23
13.50' RT
STA 42+47.76
3.50' LT
STA 40+55.00
0.00' RT
BASE WALL AT EL. 568.5
STA. 6+31.12
STA 40+88.10
21.77' LT
STA 40+X
22.00' RT
EL. 569.0
15.00
12.00
2.84
12.00
EL. 568.5
EL. 569.0
EL. 566.5
6:1
STONE RIPRAP, CLASS A4 (SPECIAL)
SECTION O-O
STONE RIPRAP, CLASS A7 (SPECIAL)
1"= 6'


595
590
585
580
575
570
565
560
555
DENIL BRIDGE SLAB
DENIL FISHWAY
FINISHED SLOPE ON EITHER SIDE OF DENIL WALLS FROM BOTTOM SLAB TO EXISTING GROUND.
STONE RIPRAP, A4 (SPECIAL)
SEE SHEET 9 FOR THICKNESS
EXISTING GRADE
STONE RIPRAP, CLASS A4 (SPECIAL)
SEE SHEET 7 FOR THICKNESS
STONE RIPRAP, CLASS A7 (SPECIAL) SEE SHEET 7 FOR THICKNESS
DENIL FISHWAY FOOTING
KEY IN RIPRAP AT DENIL EXIT TO EL. 568.5
3.00
40+20
40+40
40+60
40+80
41+00
41+20
41+40
41+60
41+80
42+00
42+20
42+40
42+60
42+80
43+00
43+20

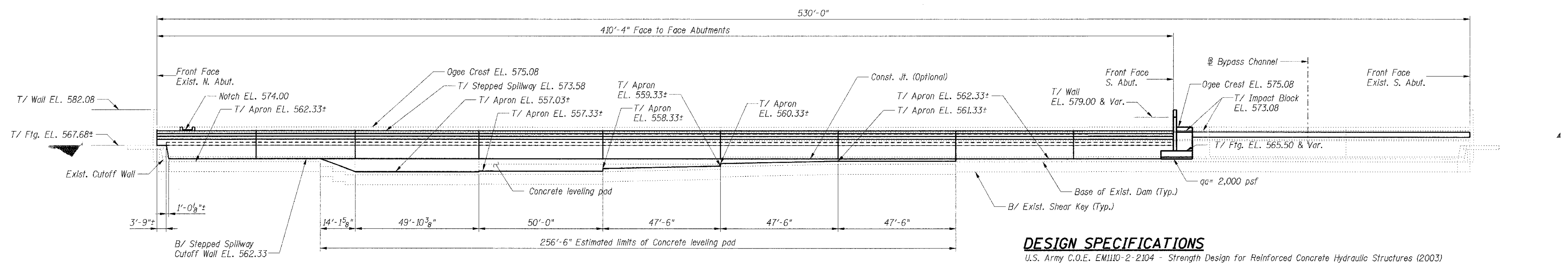
DESIGNED BY: NDD CHECKED BY: BGC
DRAWN BY: MEF CHECKED BY: BGC

TENG
TENG & ASSOCIATES, INC.
ENGINEERS/ARCHITECTS/PLANNERS
205 N. MICHIGAN AVE. CHICAGO, IL 60601
Cochran & Wilken, Inc.
Consulting Engineers & Scientists

DENIL FISH LADDER PLAN AND PROFILE



PLAN



VIEW A-A

(Elevation Looking East)

DESIGN SPECIFICATIONS

U.S. Army C.O.E. EM1110-2-2104 - Strength Design for Reinforced Concrete Hydraulic Structures (2003)
U.S. Army C.O.E. EC1110-2-6058 - Stability Analysis of Concrete Structures (2003)

DESIGN LOADING

	Fox River		Bypass Channel	
Load Case	Headwater	Tailwater	Headwater	Tailwater
Case 1 - Normal Operating Condition	577.7	574.7	575.6	575.6
Case 2 - Maintenance Condition	577.7 or 565.0	574.7 or 565.0	575.6 or 565.0	575.6 or 565.0
Case 3 - Seismic Condition	575.6	569.8	572.4	571.0
Case 4 - Design Flood Condition	579.7	578.6	579.0	579.0

(Headwater is upstream and Tailwater is downstream of the existing dam)

DESIGN STRESSES

Concrete, f'c = 3,500 psi
Reinforcement, fy = 60,000 psi
Allowable rock bearing pressure, Qall = 50 tsf

SEISMIC DATA

Seismic Coeffecient = 0.05g

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FR-422

TENG
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ENGINEERS/ARCHITECTS/PLANNERS
205 N. MICHIGAN AVE. CHICAGO, IL 60601
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GENERAL PLAN & ELEVATION

INDEX OF SHEETS

S1 GENERAL PLAN & ELEVATION
S2 GENERAL NOTES, BILL OF MATERIAL, & TYPICAL DETAILS
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S8 SOUTH ABUTMENT PLAN
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S12 SOUTH ABUTMENT WALL FINISH DETAILS
S13 SOUTH ABUTMENT BILL OF MATERIAL & BAR DETAILS
S14 DENIL FISH LADDER FOOTING PLAN
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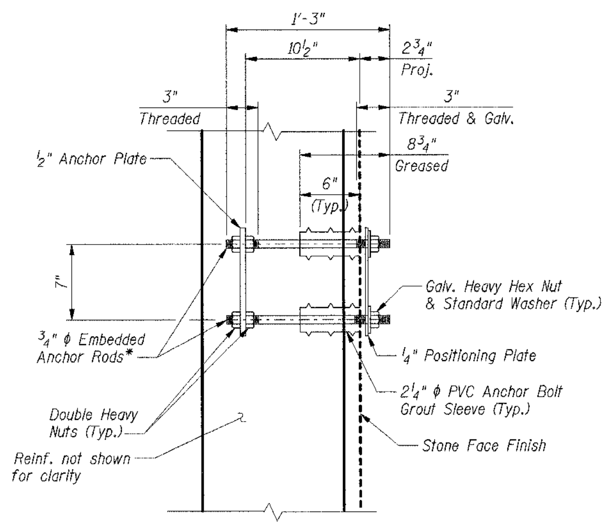
S19 DENIL FISH LADDER SECTIONS & DETAILS

GENERAL NOTES

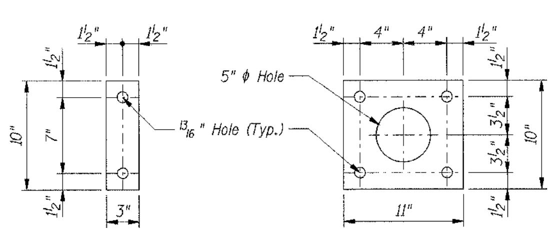
1. Anchor Rods shall conform to AASHTO M314 Gr. 36 or 55 with a minimum Charpy V-Notch (CVN) energy of 15 lb.-ft. at 40° F. Cost of furnishing and installing Anchor Rods is included with Concrete Structures.
2. Reinforcement bars shall conform to the requirements of AASHTO M31 or M322, Grade 60.
3. Plan dimensions and details relative to existing structures have been taken from existing plans and/or past surveys and reports and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in the scope of work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.
4. Bridge Seat Sealer shall be applied to the seat area of the Pedestrian Bridge Abutment.
5. All construction joints shall be bonded.
6. Excavation for structures within the construction stage cofferdam will not be paid for as Cofferdam Excavation but shall be paid for as Structure Excavation according to Section 502 of the Standard Specifications.

Bill of Material

Item	Unit	Dam	Denil Fish Ladder	Total
ROCK EXCAVATION	CU YD	93	-	93
POROUS GRANULAR EMBANKMENT	CU YD	42	70	112
CONCRETE REMOVAL	CU YD	64.3	-	64.3
STRUCTURE EXCAVATION	CU YD	1,150	610	1,760
CONCRETE STRUCTURES	CU YD	1,753.2	192.9	1,946.1
REINFORCEMENT BARS, EPOXY COATED	POUND	195,930	31,740	227,670
BRIDGE SEAT SEALER	SQ FT	23	-	23
STONE FACE FINISH	SQ FT	2,905	-	2,905
GALVANIZED WELDED STEEL BAR GRATING	SQ FT	-	820	820
STAINLESS STEEL DEBRIS GRATE	EACH	-	1	1
ALUMINUM BAFFLES AND GUIDES	EACH	-	24	24



EMBEDMENT DETAIL



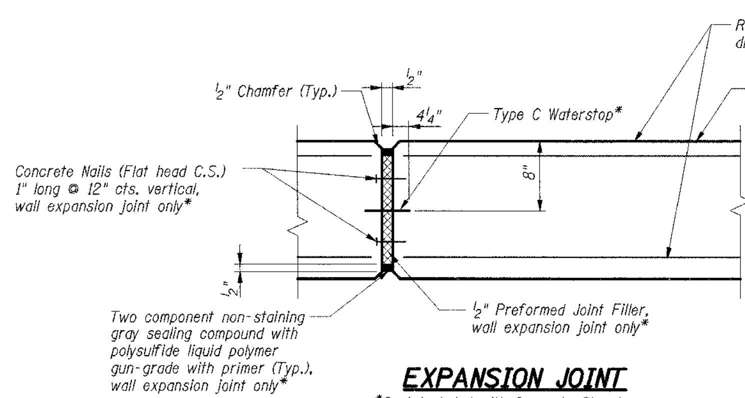
2 BOLT ARRANGEMENT   4 BOLT ARRANGEMENT

ANCHOR PLATE & POSITIONING PLATE

ANCHOR ROD ASSEMBLY

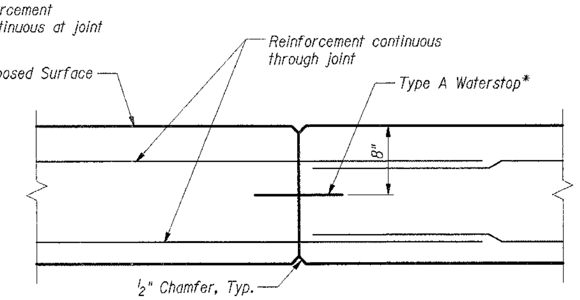
(16 Required. Cost included with Concrete Structures)

* For Anchor Rod locations, see Drwg. S9

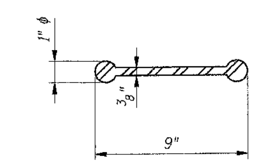


EXPANSION JOINT

*Cost included with Concrete Structures

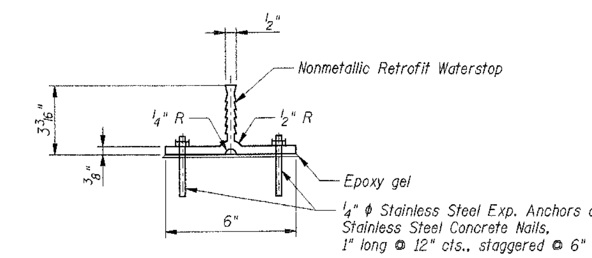


CONSTRUCTION JOINT



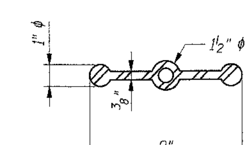
TYPE A WATERSTOP

Two Bulb Waterstop shall be provided at all vertical construction joints and as noted on the plans (Cost included with Concrete Structures)



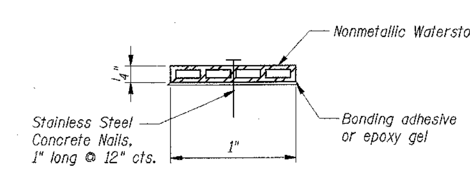
TYPE B WATERSTOP

Existing concrete surfaces in contact with waterstop shall be cleaned by sand blasting or grinding to assure a good bond. An epoxy gel bonding agent shall be applied per the manufacturer's instructions. (Cost included with Concrete Structures)



TYPE C WATERSTOP

Three Bulb Waterstop shall be provided at all expansion joints. (Cost included with Concrete Structures)



TYPE D WATERSTOP

Existing concrete surfaces in contact with waterstop shall be cleaned by sand blasting or grinding to assure a good bond. An epoxy gel bonding agent or bonding adhesive shall be applied per the manufacturer's instructions. (Cost included with Concrete Structures)

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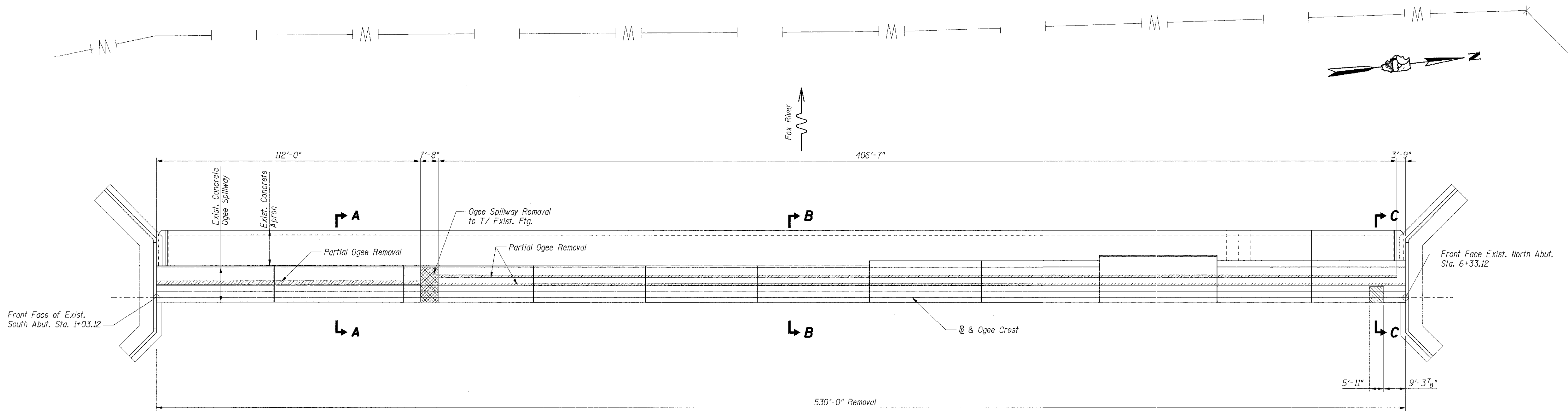
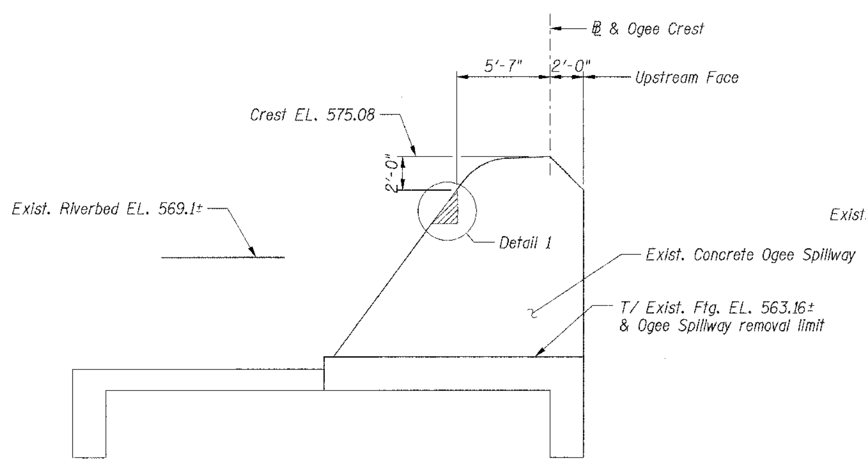
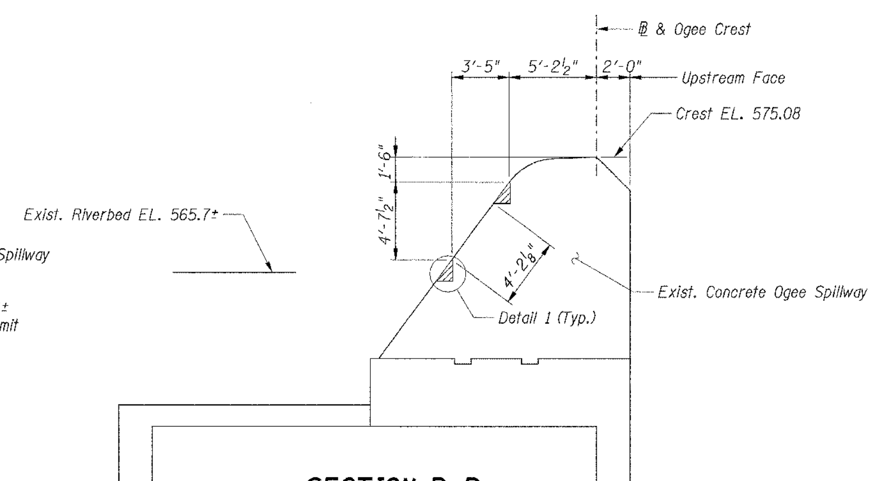


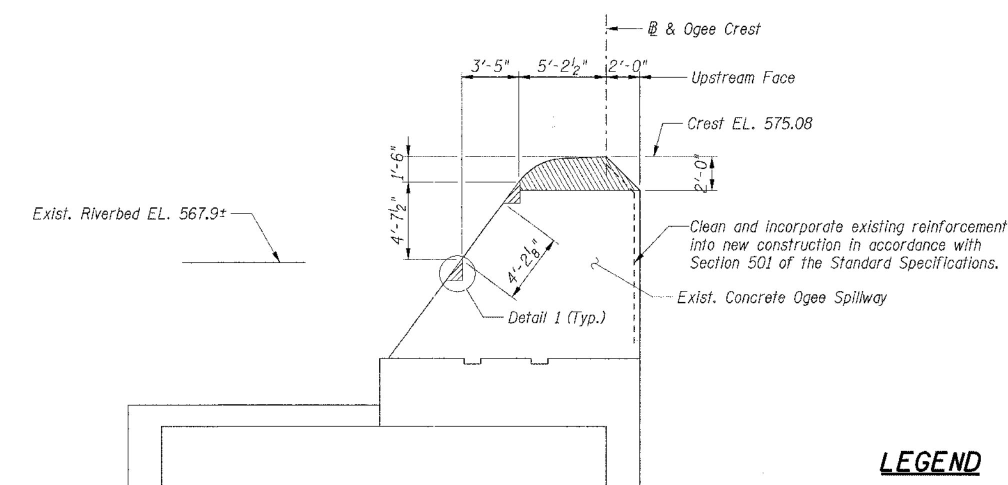
PLAN



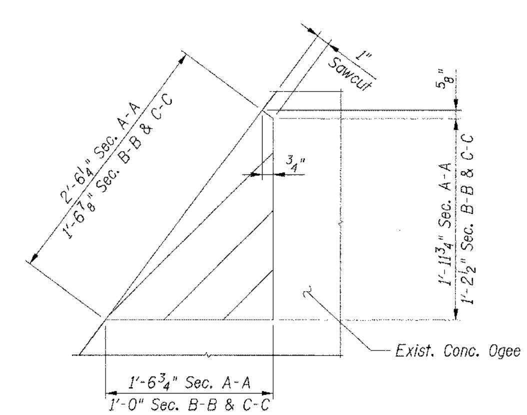
SECTION A-A



SECTION B-B



SECTION C-C



DETAIL 1

LEGEND

- Partial concrete removal
- Full concrete removal

Notes:

1. Existing plans indicate reinforcement on back face of Ogee Spillway only.
2. Sawcut shall be perpendicular to Ogee Spillway face.

BILL OF MATERIAL

Item	Unit	Total
Concrete Removal	Cu yd	64.3

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REMOVAL PLAN

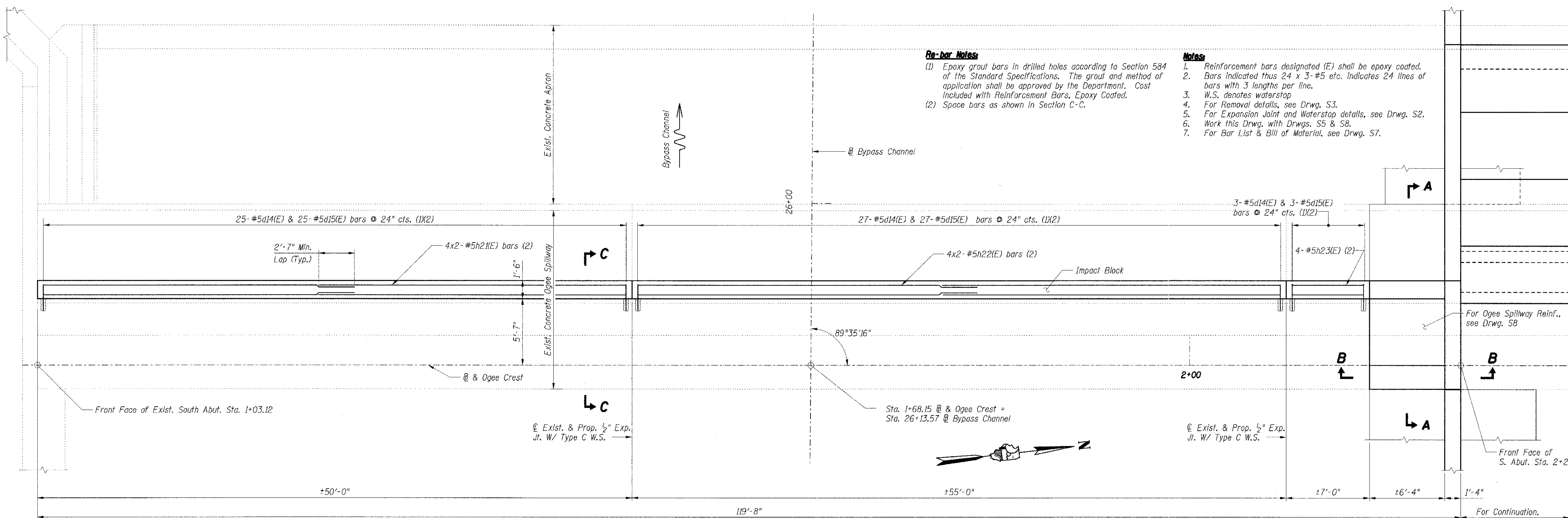
Re-bar Notes:

(1) Epoxy grout bars in drilled holes according to Section 584 of the Standard Specifications. The grout and method of application shall be approved by the Department. Cost included with Reinforcement Bars, Epoxy Coated.

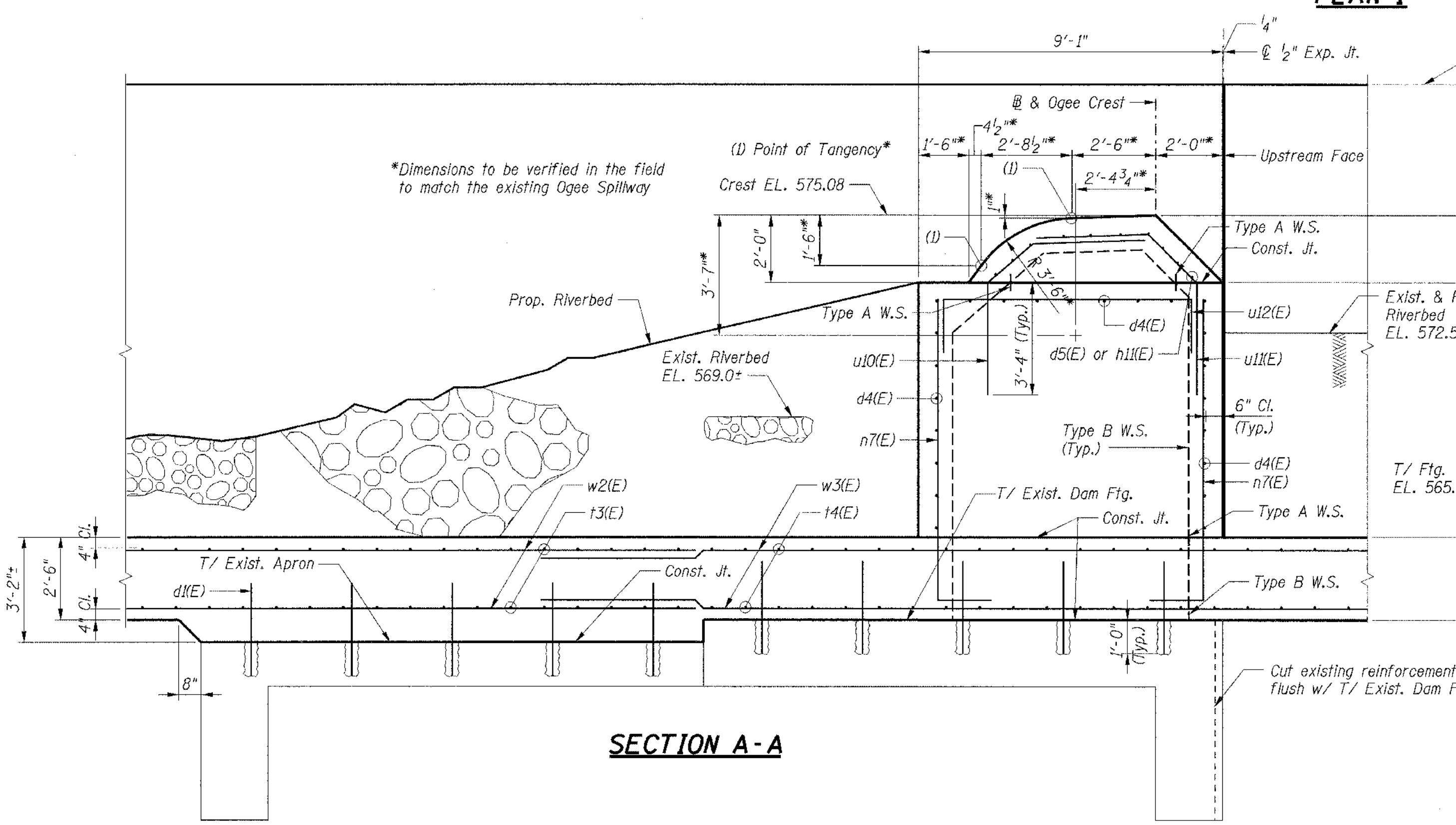
(2) Space bars as shown in Section C-C.

Notes:

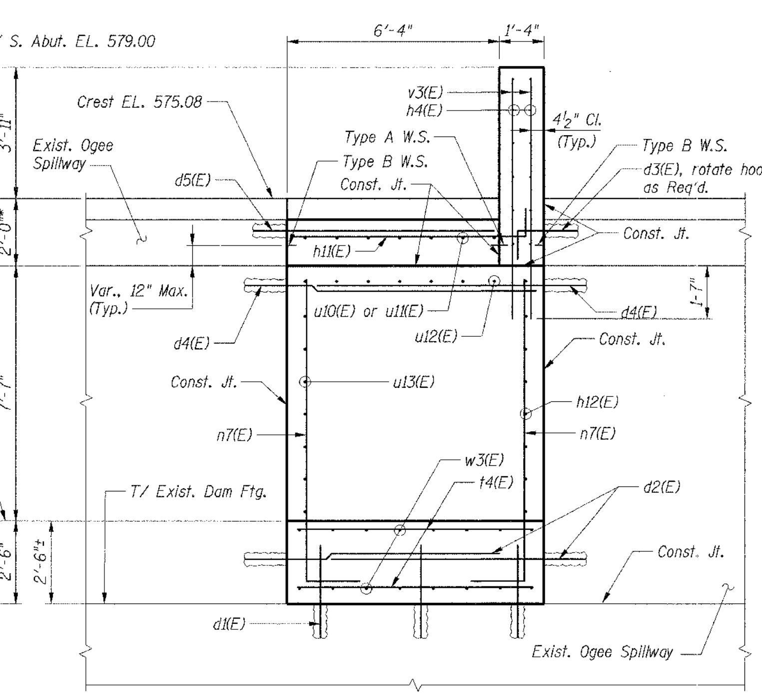
1. Reinforcement bars designated (E) shall be epoxy coated.
2. Bars indicated thus 24 x 3-#5 etc. indicates 24 lines of bars with 3 lengths per line.
3. W.S. denotes waterstop
4. For Removal details, see Drwg. S3.
5. For Expansion Joint and Waterstop details, see Drwg. S2.
6. Work this Drwg. with Drwgs. S5 & S8.
7. For Bar List & Bill of Material, see Drwg. S7.



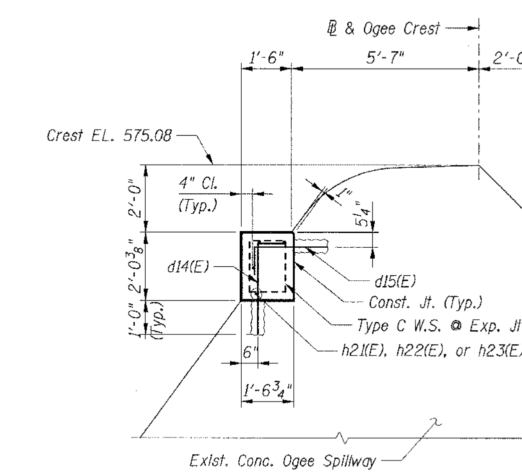
PLAN I



SECTION A-A



SECTION B-B



SECTION C-C

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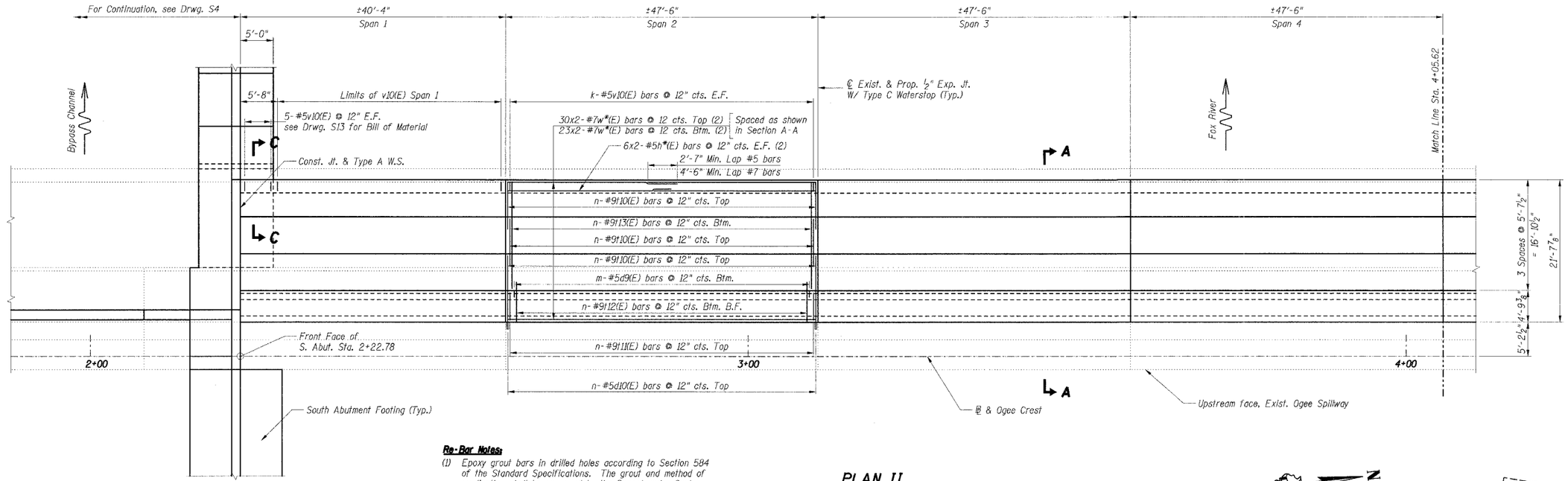
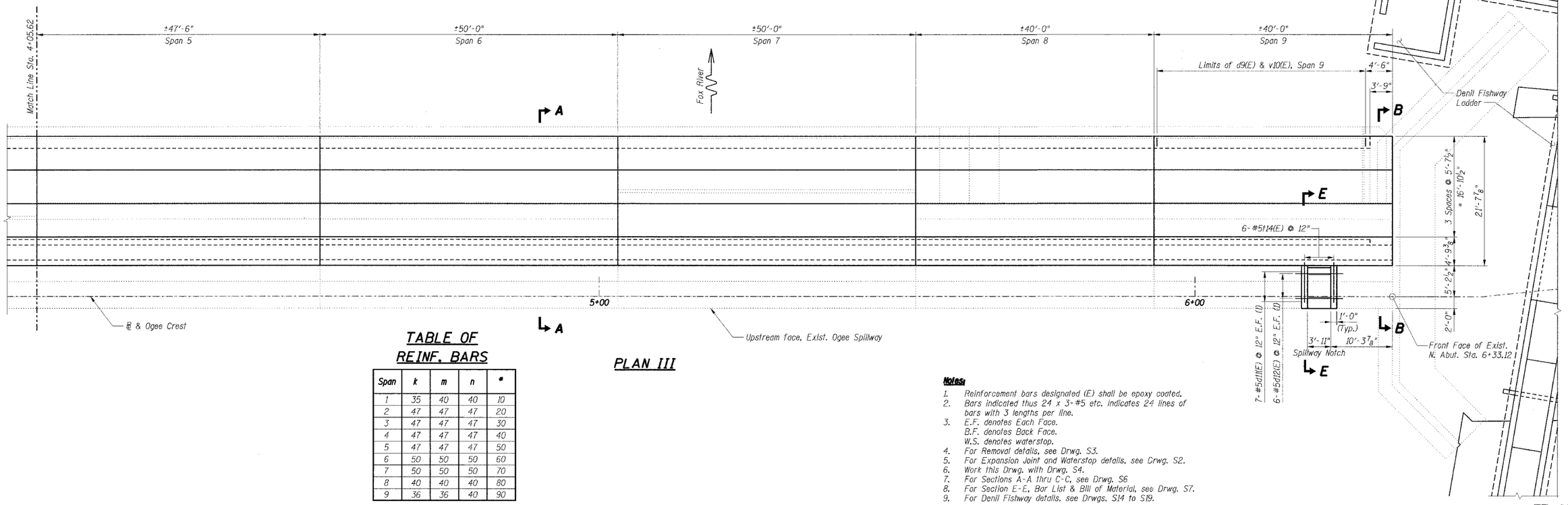


Re-Bar Notes:

(1) Epoxy grout bars in drilled holes according to Section 584 of the Standard Specifications. The grout and method of application shall be approved by the Department. Cost included with Reinforcement Bars, Epoxy Coated.
(2) For designation of reinforcement bars, *, see Table of Reinforcement Bars.

PLAN II



PLAN III

TABLE OF REINF. BARS

Span	k	m	n	*
1	35	40	40	10
2	47	47	47	20
3	47	47	47	30
4	47	47	47	40
5	47	47	47	50
6	50	50	50	60
7	50	50	50	70
8	40	40	40	80
9	36	36	40	90

Notes:

1. Reinforcement bars designated (E) shall be epoxy coated.
2. Bars indicated thus 24 x 3-#5 etc. indicates 24 lines of bars with 3 lengths per line.
3. E.F. denotes Each Face.
   B.F. denotes Back Face.
   W.S. denotes waterstop.
4. For Removal details, see Drwg. S3.
5. For Expansion Joint and Waterstop details, see Drwg. S2.
6. Work this Drwg. with Drwg. S4.
7. For Sections A-A thru C-C, see Drwg. S6
8. For Section E-E, Bar List & Bill of Material, see Drwg. S7.
9. For Denil Fishway details, see Drwgs. S14 to S19.

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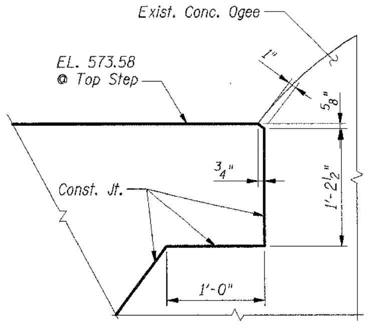
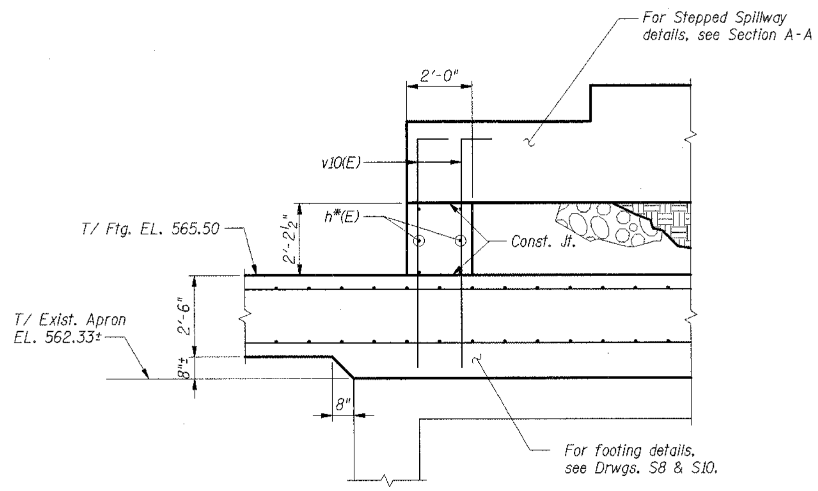
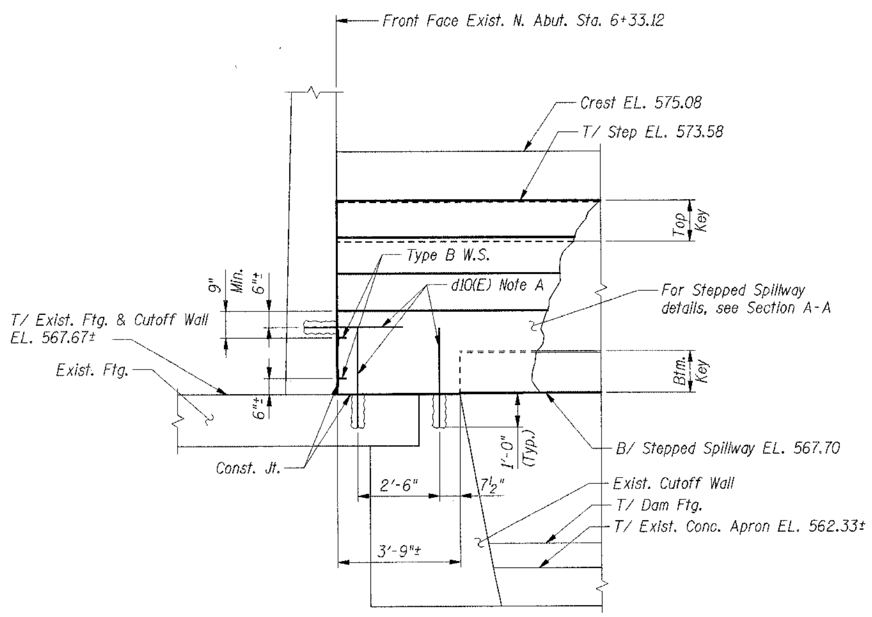


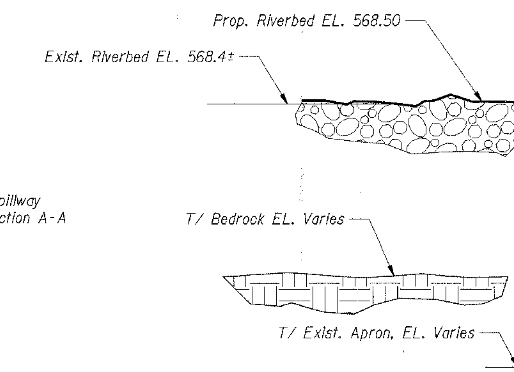
DETAIL 1



SECTION C-C



SECTION D-D

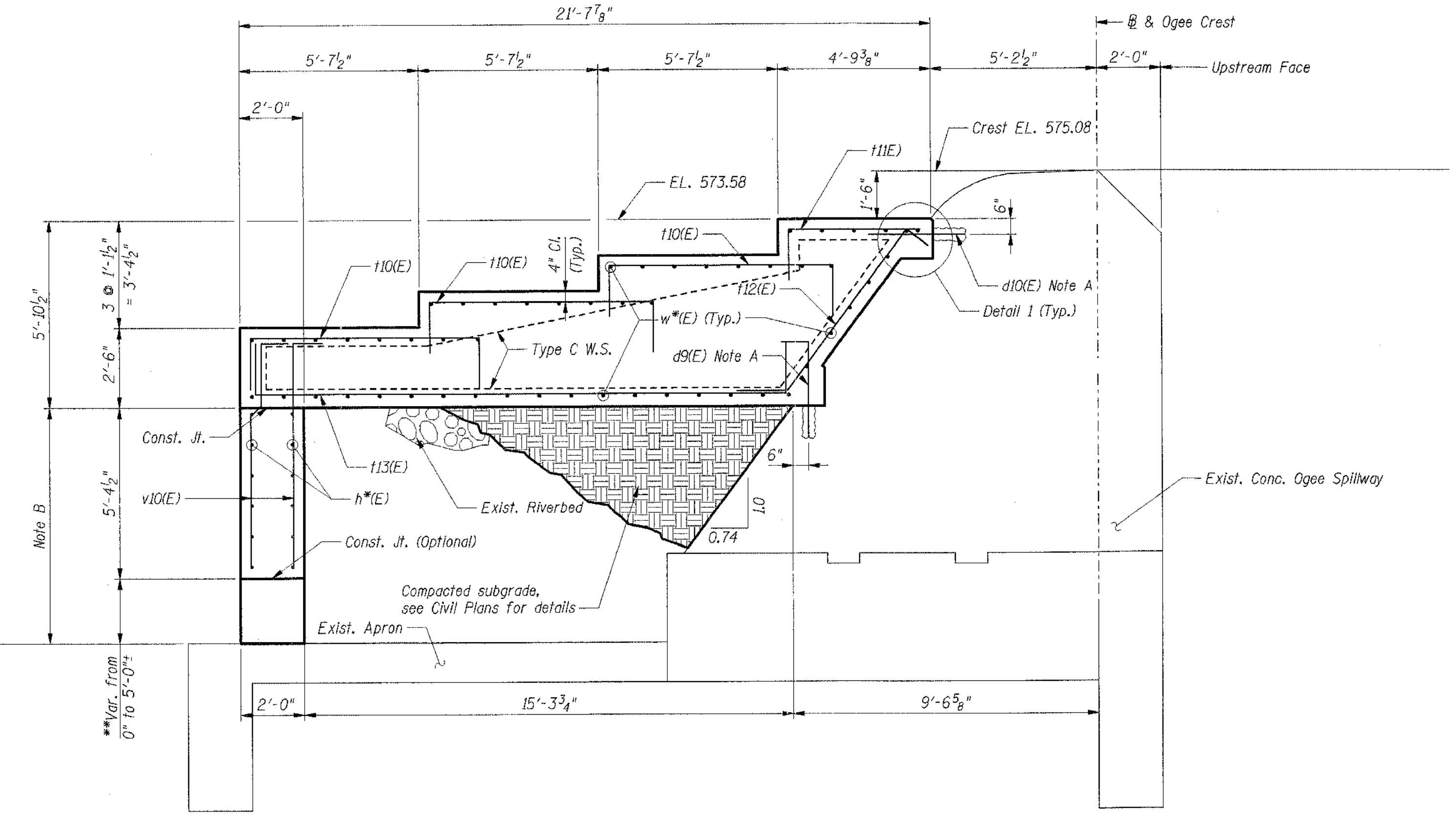


*For locations of reinforcement and bar designations, see Table of Reinforcement Bars on Drwg. S5.

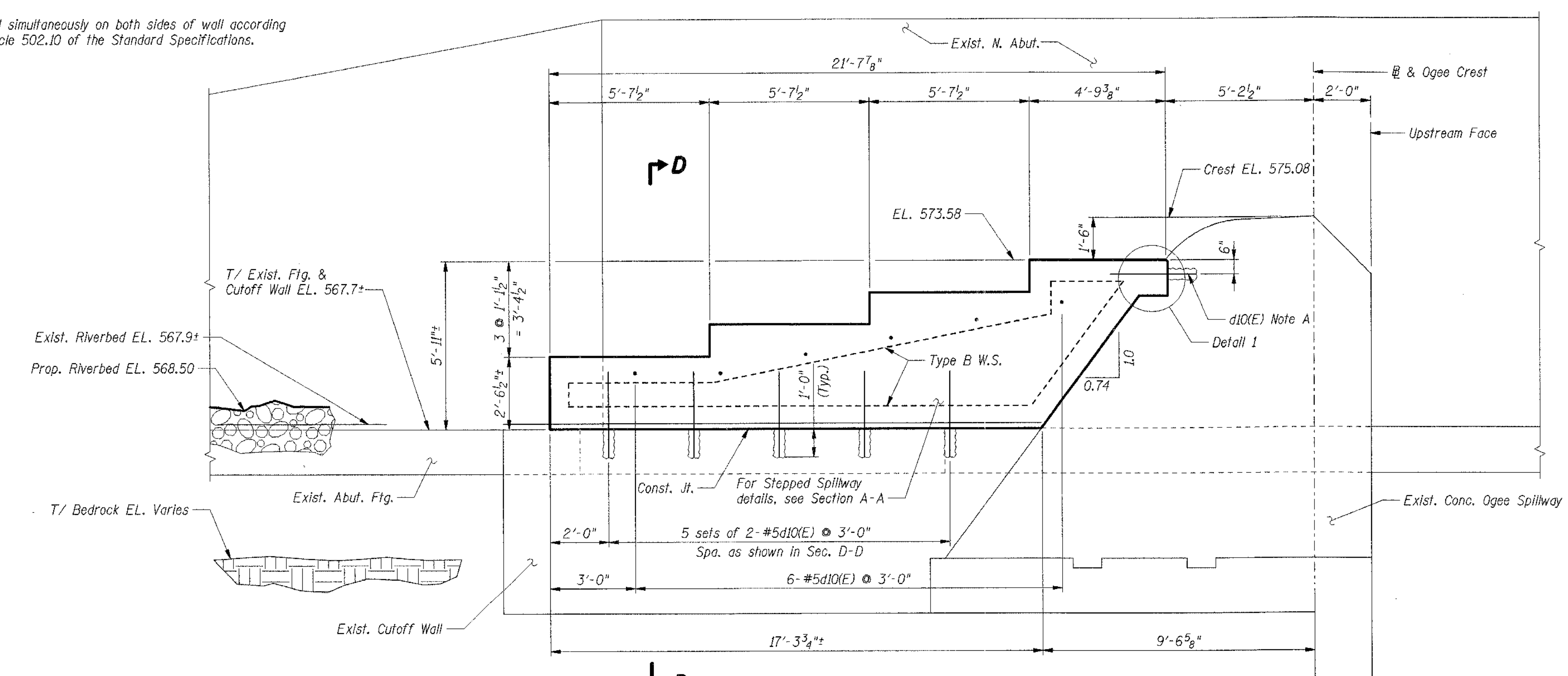
**Concrete leveling pad, paid for as Concrete Structures. Contractor may place in accordance with Article 503.08 of the Standard Specifications.

Note A: Epoxy grout bars in drilled holes according to Section 584 of the Standard Specifications. The grout and method of application shall be approved by the Department. Cost included with Reinforcement Bars, Epoxy Coated.

Note B: Backfill simultaneously on both sides of wall according to Article 502.10 of the Standard Specifications.



SECTION A-A



SECTION B-B

Notes

1. Reinforcement bars designated (E) shall be epoxy coated.
2. W.S. denotes waterstop.
3. For Waterstop details, see Drwg. S2.
4. Work this Drwg. with Drwg. S5.
5. For Bar List & Bill of Material, see Drwg. S7.

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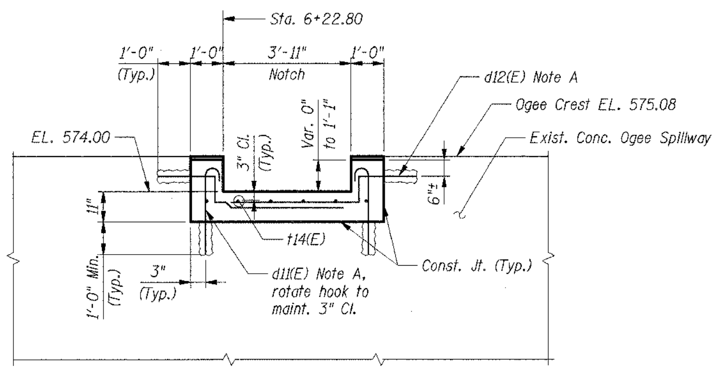
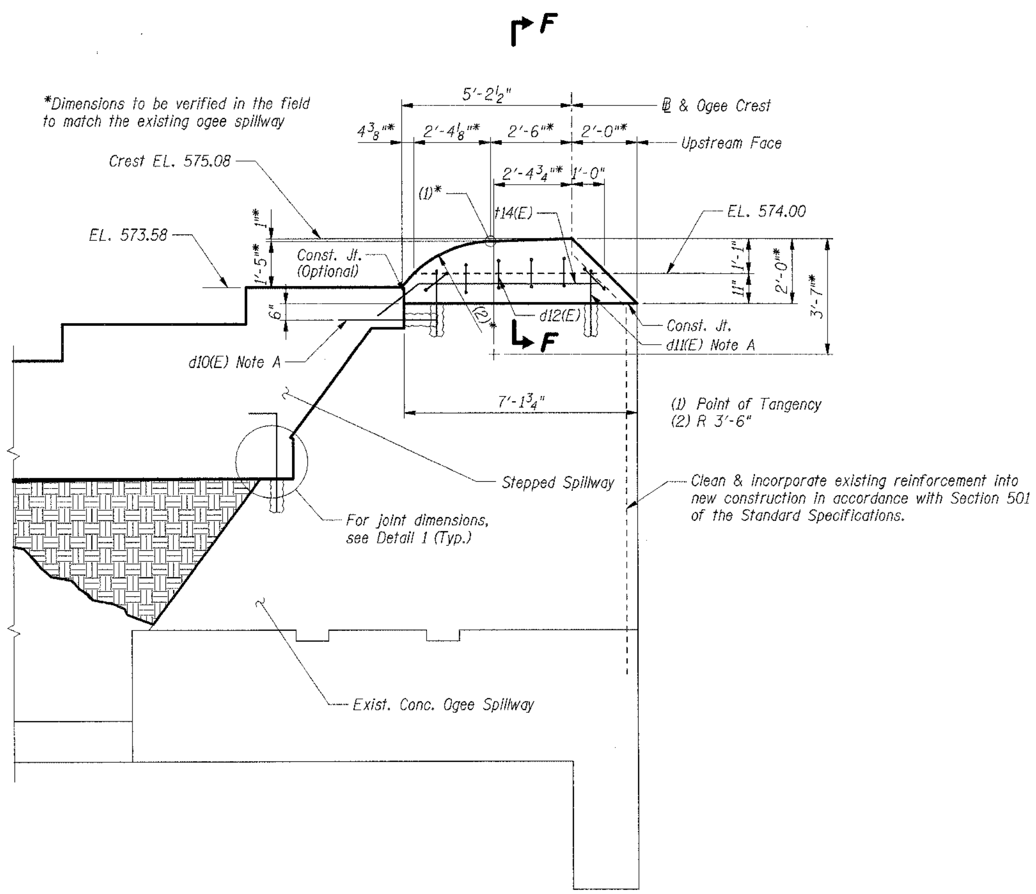
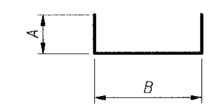


SECTION F-F

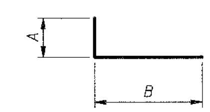
Note A: Epoxy grout bars in drilled holes according to Section 584 of the Standard Specifications. The grout and method of application shall be approved by the Department. Cost included with Reinforcement Bars, Epoxy Coated.



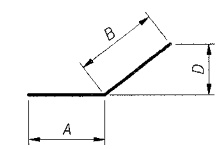
SECTION E-E



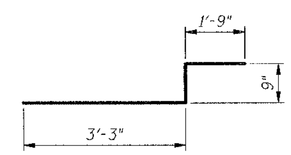
Bar	A	B
t10(E)	1'-7"	7'-0"
t13(E)	1'-7"	17'-6"



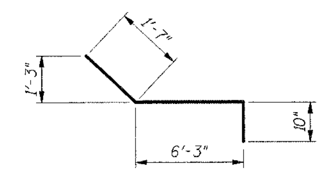
Bar	A	B
d9(E)	0'-10"	3'-0"
d14(E)	0'-10"	2'-7"
d15(E)	0'-10"	2'-2"
t11(E)	1'-7"	4'-3"
v10(E)	0'-10"	7'-0"



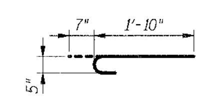
Bar	A	B	D
t14(E)	5'-6"	1'-8"	1'-4"



Bar d12(E)



Bar t12(E)



Bar d11(E)

BAR LIST

Bar	No. Stage 1	No. Stage 2	Size	Length	Shape
d9(E)	134	270	#5	3'-10"	
d10(E)	134	290	#5	3'-0"	
d11(E)		14	#5	2'-5"	
d12(E)		12	#5	5'-9"	
d14(E)	55		#5	3'-5"	
d15(E)	55		#5	3'-0"	
h10(E)	24		#5	21'-2"	
h20(E)	24		#5	24'-10"	
h21(E)	8		#5	26'-0"	
h22(E)	8		#5	28'-6"	
h23(E)	4		#5	6'-4"	
h30(E)	24		#5	24'-10"	
h40(E)		24	#5	24'-10"	
h50(E)		24	#5	24'-10"	
h60(E)		24	#5	26'-0"	
h70(E)		24	#5	26'-0"	
h80(E)		24	#5	21'-0"	
h90(E)		24	#5	18'-10"	
t10(E)	402	822	#9	10'-2"	
t11(E)	134	274	#9	5'-10"	
t12(E)	134	274	#9	8'-8"	
t13(E)	134	274	#9	20'-8"	
t14(E)		6	#5	7'-2"	
v10(E)	258	540	#5	7'-10"	
w10(E)	106		#7	22'-1"	
w20(E)	106		#7	25'-9"	
w30(E)	106		#7	25'-9"	
w40(E)		106	#7	25'-9"	
w50(E)		106	#7	25'-9"	
w60(E)		106	#7	27'-0"	
w70(E)		106	#7	27'-0"	
w80(E)		106	#7	22'-0"	
w90(E)		106	#7	22'-0"	

Item	Unit	Total
Structure Excavation	Cu yd	725
Concrete Structures	Cu yd	1421.2
Reinforcement Bars, Epoxy Coated	lb	155,210

Notes:

1. Reinforcement bars designated (E) shall be epoxy coated.
2. For Detail 1 & Stepped Spillway details, see Drwg. S6.
3. Work this Drwg. with Drwgs. S4 to S6.

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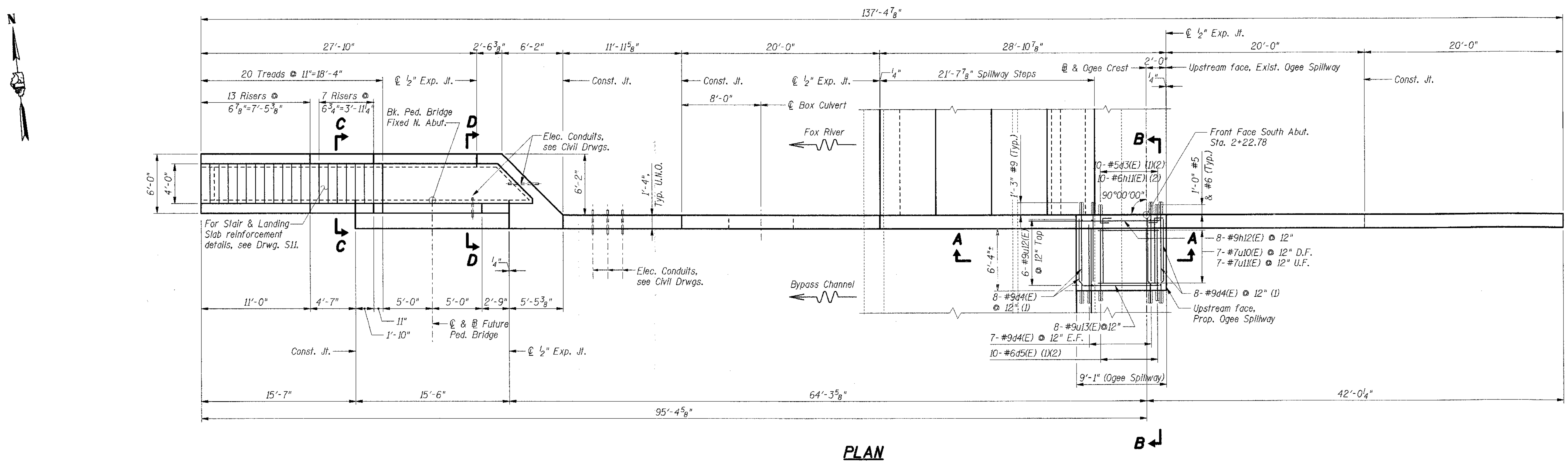
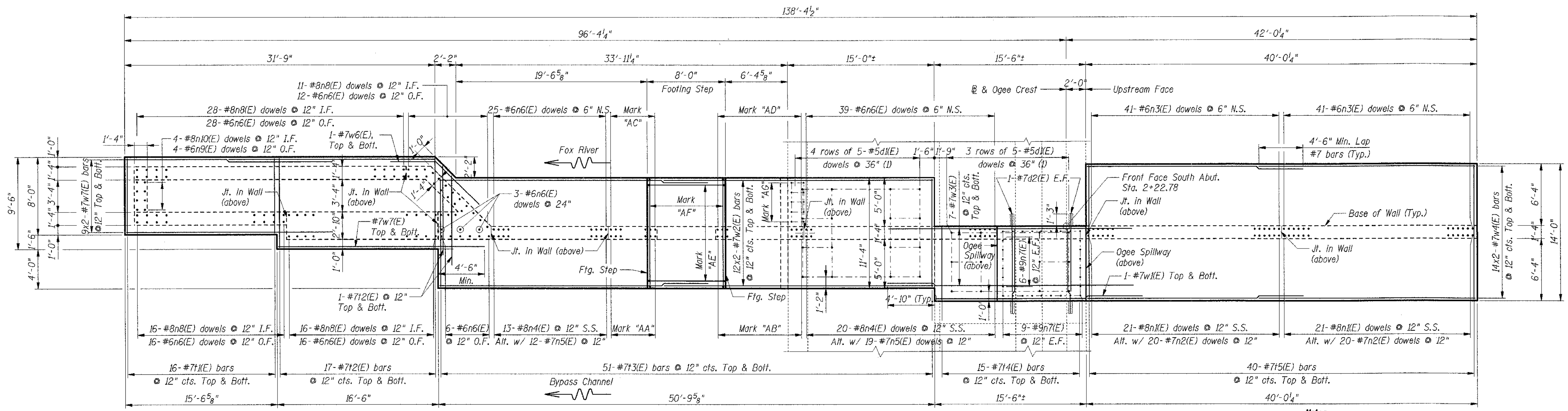
SPILLWAY SECTIONS II, BILL OF MATERIAL & BAR DETAILS



PLAN



FOOTING PLAN

TABLE OF REINFORCEMENT BARS

Mark	Reinforcement
AA	10-#8n4(E) dowels @ 6" S.S.
AB	18-#8n4(E) dowels @ 6" S.S.
AC	10-#7n5(E) dowels @ 6" N.S.
AD	18-#7n5(E) dowels @ 6" N.S.
AE	12-#7w5(E) bars @ 12" cts. Top
AF	8-#7t6(E) bars @ 12" cts. Top
AG	5-#5v10(E) dowels @ 12" E.F.

Rebars Notes:

(1) Epoxy grout bars in drilled holes according to Section 584 of the Standard Specifications. The grout and method of application shall be approved by the Department. Cost included with Reinforcement Bars, Epoxy Coated.
(2) Space bars as shown in Section A-A.

Notes:

1. Reinforcement bars designated (E) shall be epoxy coated.
2. Bars indicated thus 12 x 2-#5 etc. indicates 12 lines of bars with 2 lengths per line.
3. I.F. denotes Inside Face.
   O.F. denotes Outside Face.
   E.F. denotes Each Face.
   D.F. denotes Downstream Face.
   U.F. denotes Upstream Face.
   N.S. denotes North Side.
   S.S. denotes South Side.
4. Work this drawing with Drwgs. S9 & S10.
5. For Sections A-A & B-B, see Drwg. S4.
6. For Stepped Spillway Plan, see Drwg. S5.
7. For Sections C-C & D-D and Stair & Landing Slab reinforcement details, see Drwg. S11.
8. For Bar List & Bill of Material, see Drwg. S13.

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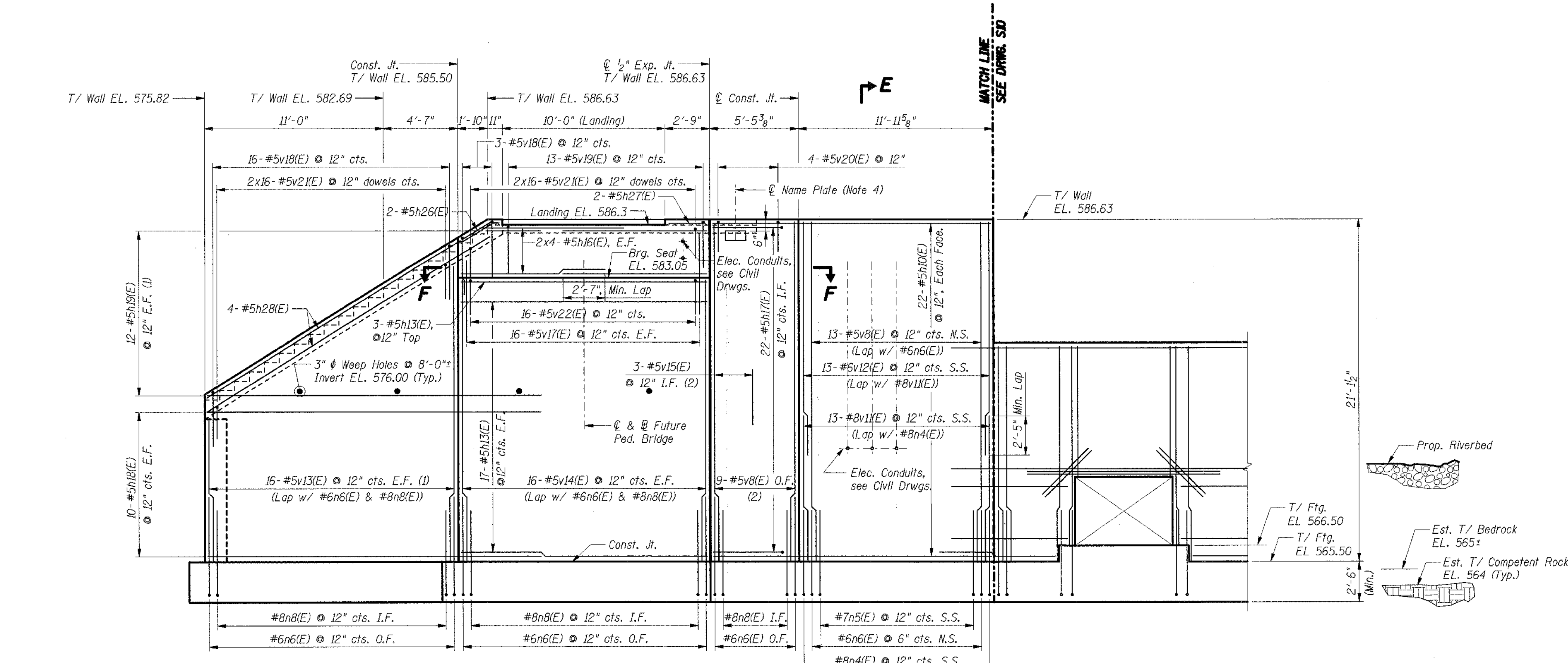
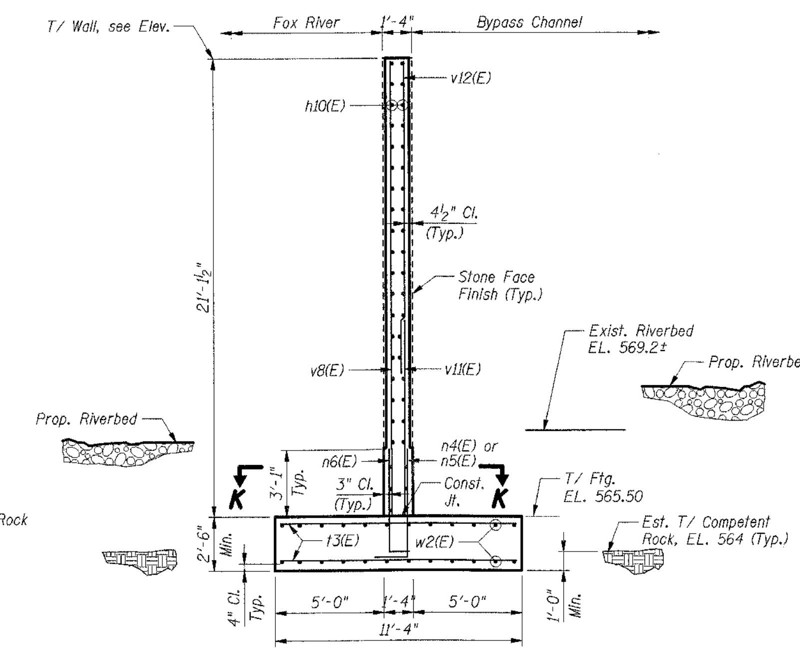
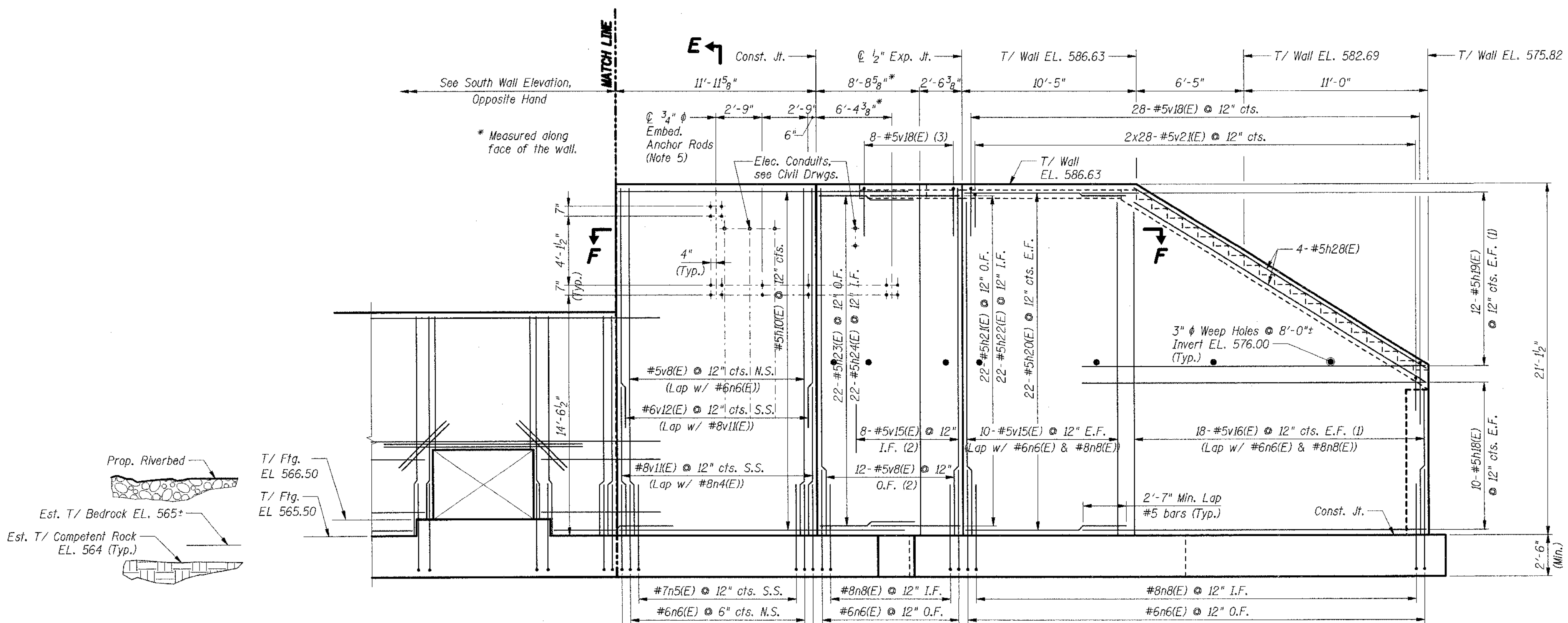
SOUTH ABUTMENT PLAN



SOUTH WALL ELEVATION
(looking north)



SECTION E-E



NORTH WALL ELEVATION
(looking south)

Re-bar Notes:

(1) Cut bars according to Cutting Diagram, Drwg. S13.
(2) Space as shown in Sec. F-F.
(3) Space Sim. to v15(E) as shown in Sec. F-F.

Notes:

1. Reinforcement bars designated (E) shall be epoxy coated.
2. E.F. denotes Each Face.
   I.F. denotes Inside Face.
   O.F. denotes Outside Face.
   N.S. denotes North Side.
   S.S. denotes South Side.
3. Work this drawing with Drwgs. S8 & S10.
4. For Name Plate details, see Drwgs. G2 & G3.
5. Embedded Anchor Rods for future platform. For details, see Drwg. S2.
6. For Section K-K, see Drwg. S10.
7. For Section F-F and Stair & Landing Slab Reinforcement Details, see Drwg. S11.
8. For Stone Face Finish, see Drwg. S12.
9. For Bar List & Bill of Material, see Drwg. S13.

FR-422

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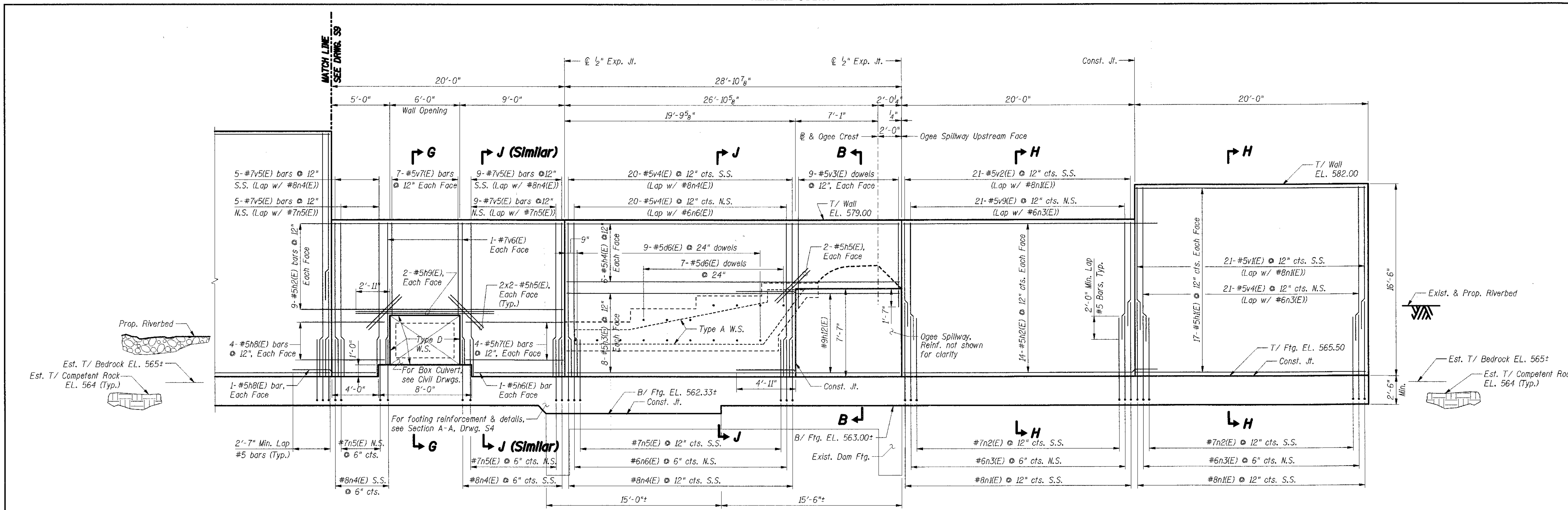
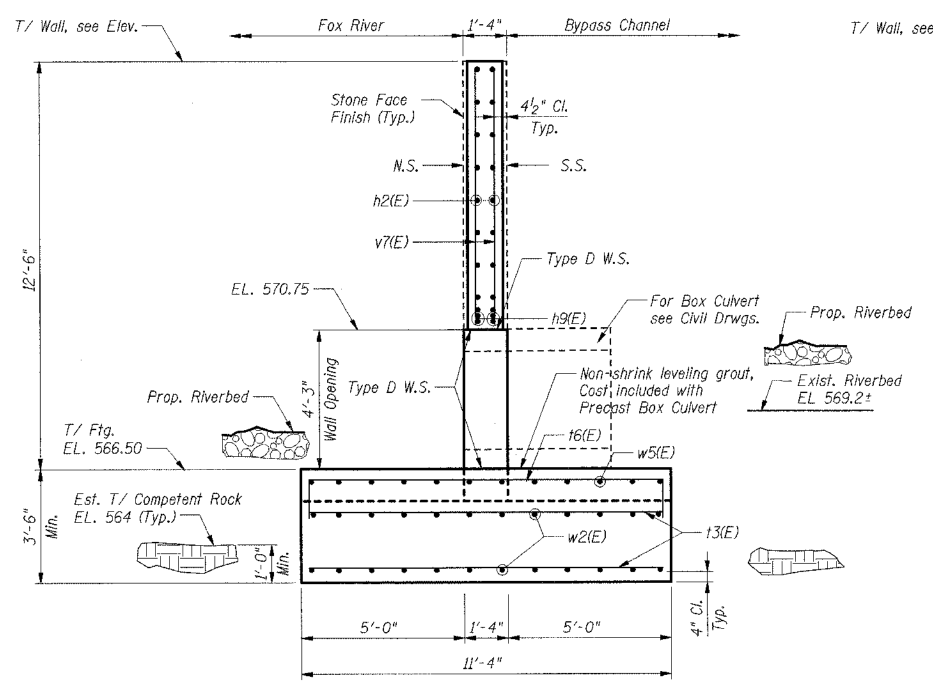
SOUTH ABUTMENT ELEVATIONS I

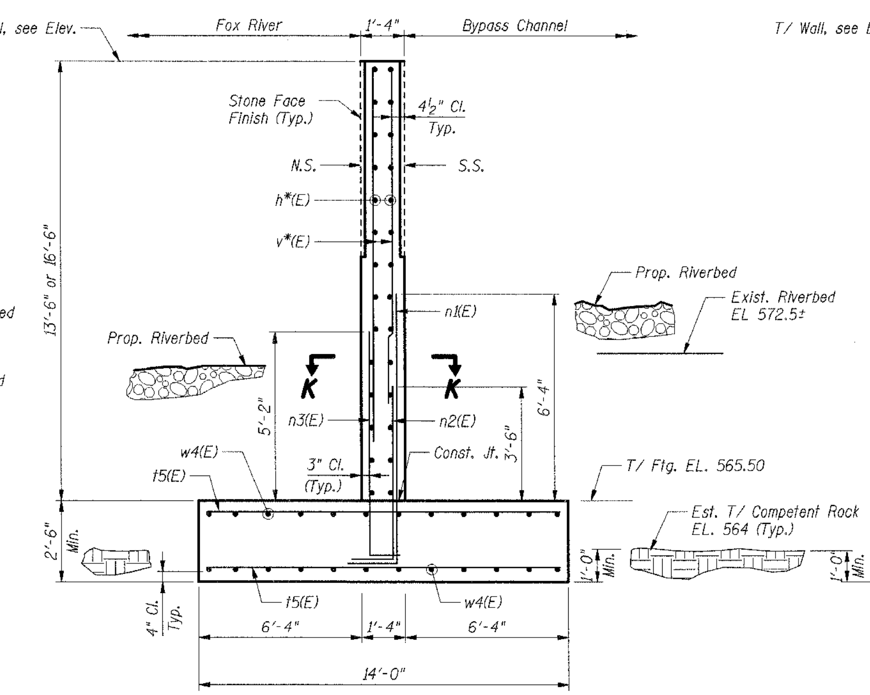


SOUTH WALL ELEVATION

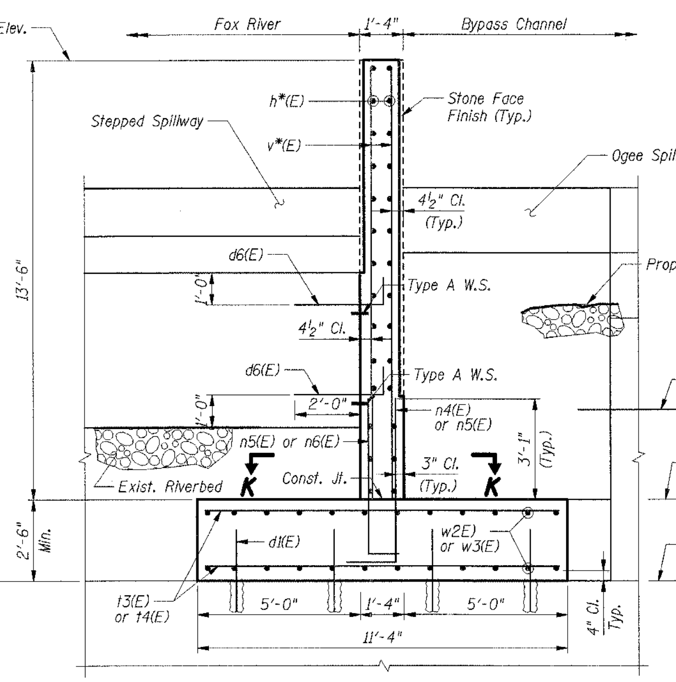
(looking north)



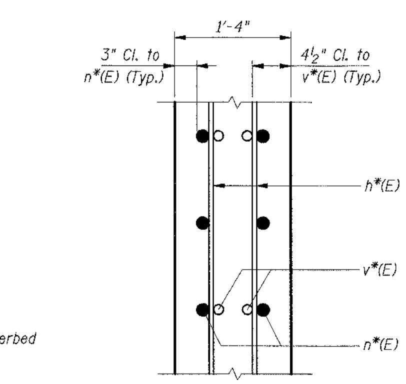
SECTION G-G



SECTION H-H



SECTION J-J



SECTION K-K

* See South Wall Elevation this sheet for locations, designations, and quantity of bars.

Notes:

1. Reinforcement bars designated (E) shall be epoxy coated.
2. N.S. denotes North Side.
   S.S. denotes South Side.
   W.S. denotes Waterstop.
3. Work this drawing with Drwgs. S8 & S9.
4. For Expansion Joint & Waterstop details see Drwg. S2.
5. For Section B-B & Ogee Spillway details, see Drwg. S4.
6. For Stepped Spillway details, see Drwg. S6.
7. For Stone Face Finish, see Drwg. S12.
8. For Bar List & Bill of Material, see Drwg. S13.

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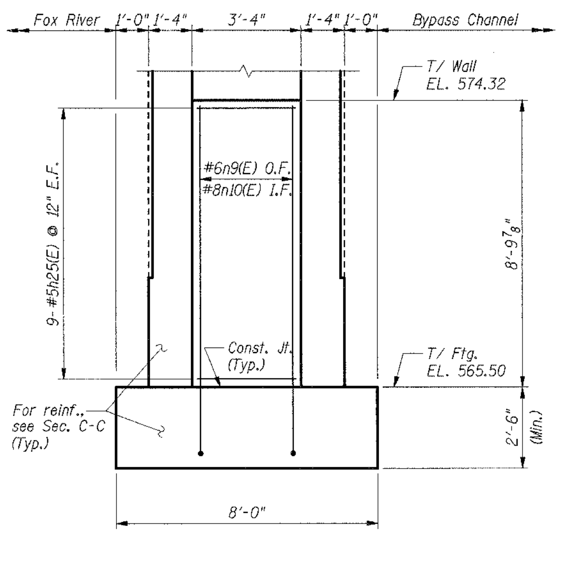
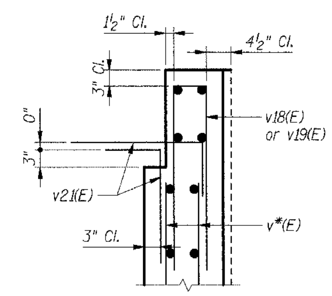
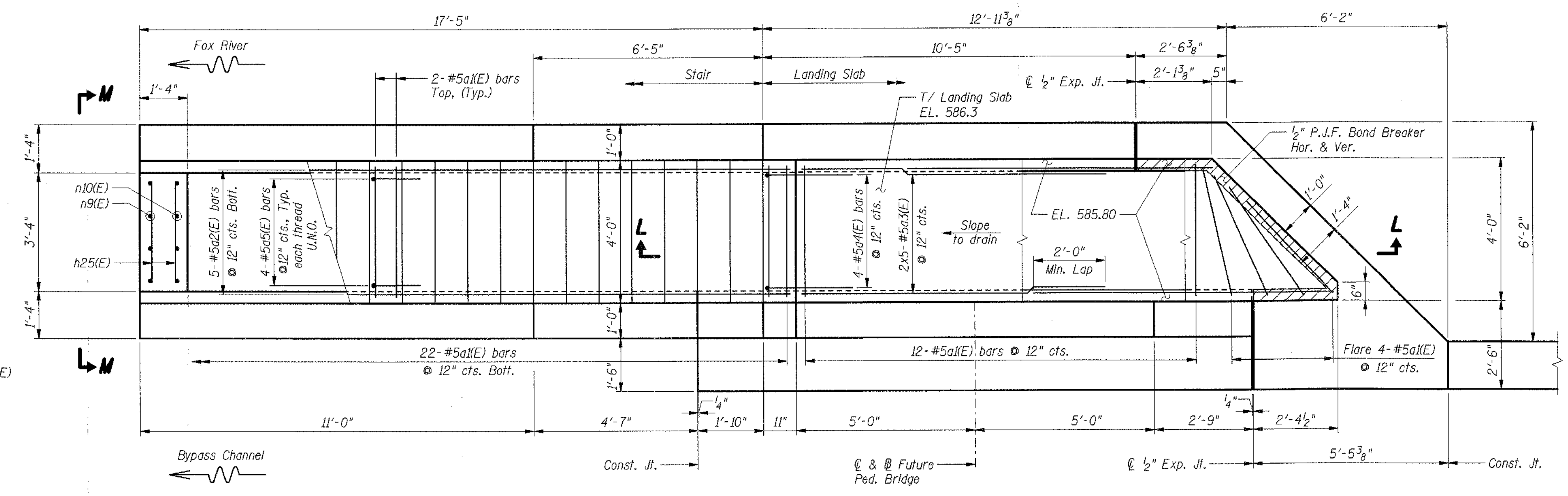
Drawn By NK Checked By RDS



SECTION M-M

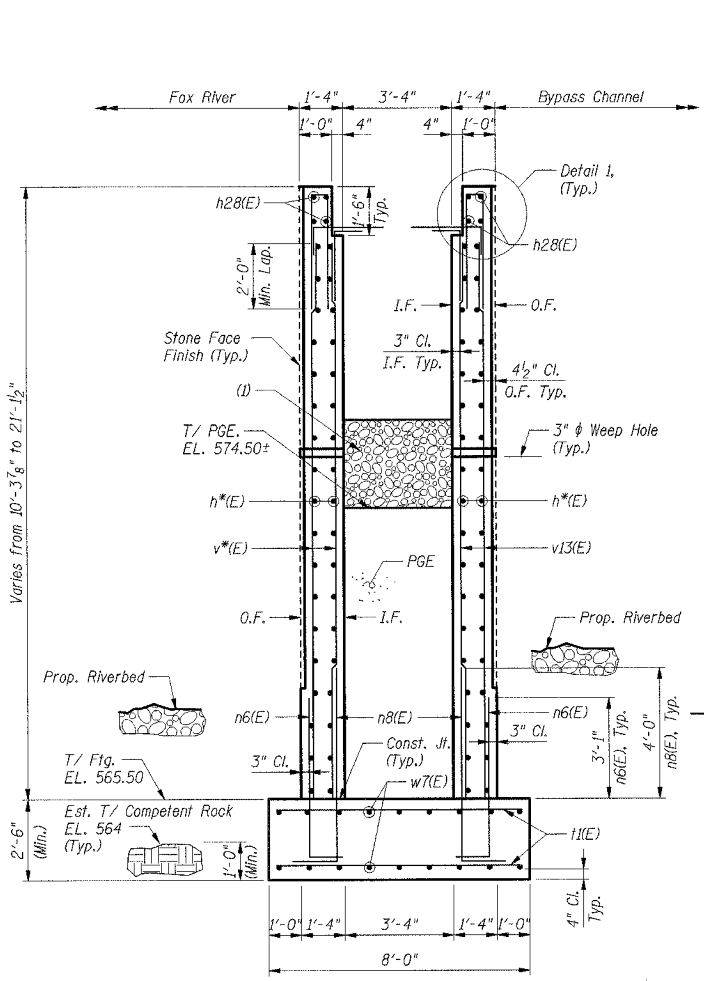


DETAIL 1

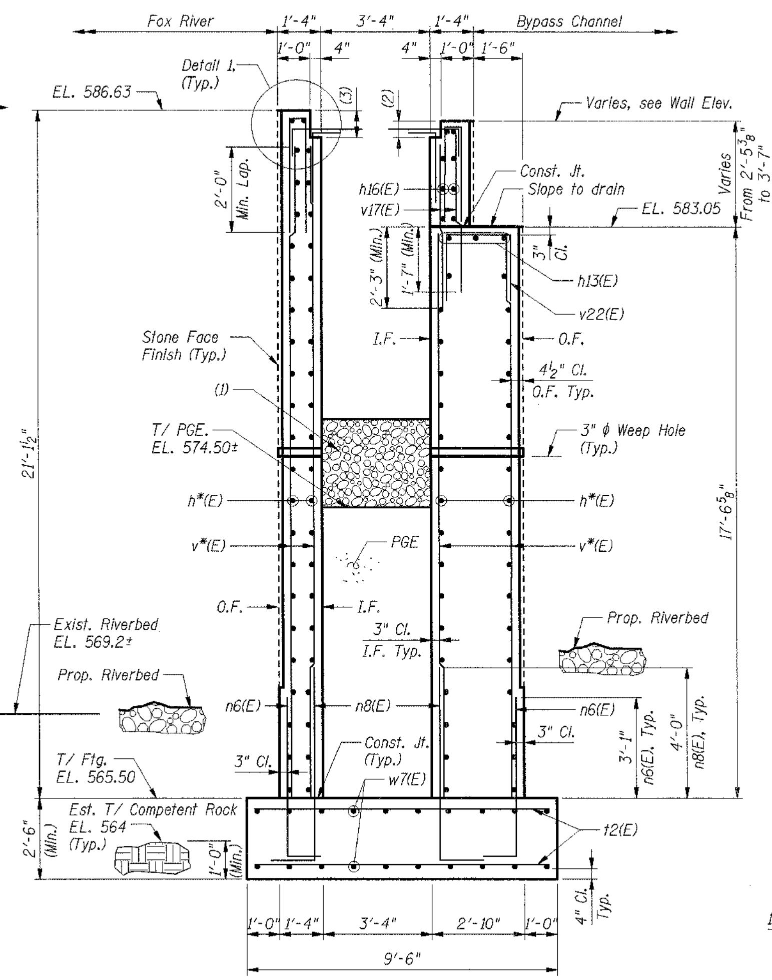


STAIR & LANDING SLAB DETAIL

(2) Var. from 6" at landing to 1'-6" at stairs.
(3) Var. from 10" at landing to 1'-6" at stairs.



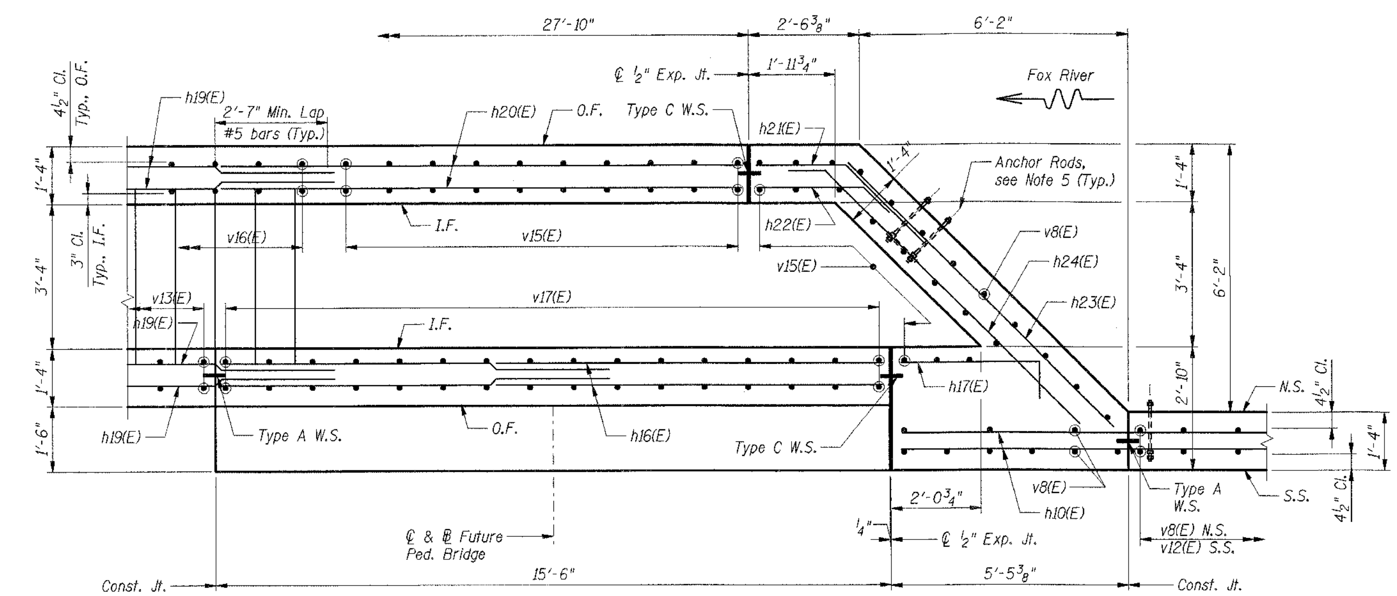
SECTION C-C



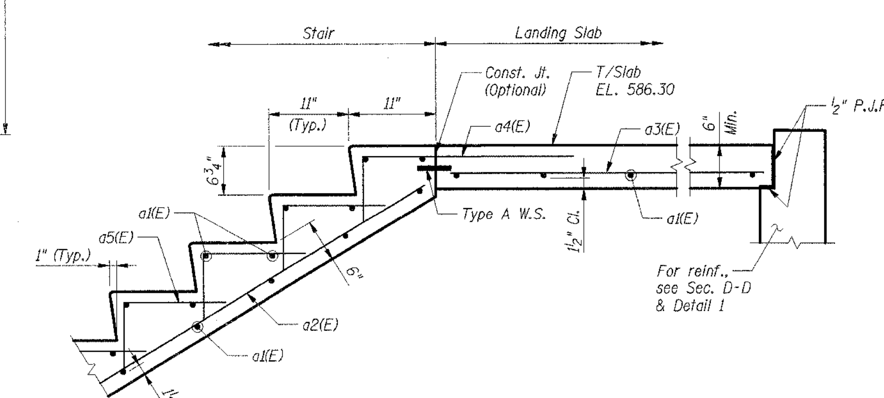
SECTION D-D

* For designations, locations, and quantities of bars, see Wall Elevations.

(1) 3' x 3' x 3'-4" cube of CA-5 or CA-7 Coarse Aggregate at each weep hole completely enclosed in a fabric envelope according to Article 502.10 of the Standard Specifications. Cost included with Porous Granular Embankment.



SECTION F-F



SECTION L-L

Notes:

1. Reinforcement bars designated (E) shall be epoxy coated.
2. I.F. denotes Inside Face.
   O.F. denotes Outside Face.
   N.S. denotes North Side.
   S.S. denotes South Side.
   W.S. denotes Waterstop.
3. Work this drawing with Drwgs. S8 & S9.
4. For Expansion Joint, Waterstop, and Anchor Rod details, see Drwg. S2.
5. For Embedded Anchor Rod locations see Drwg. S9.
6. For Stone Face Finish, see Drwg. S12.
7. For Bar List & Bill of Material, see Drwg. S13.

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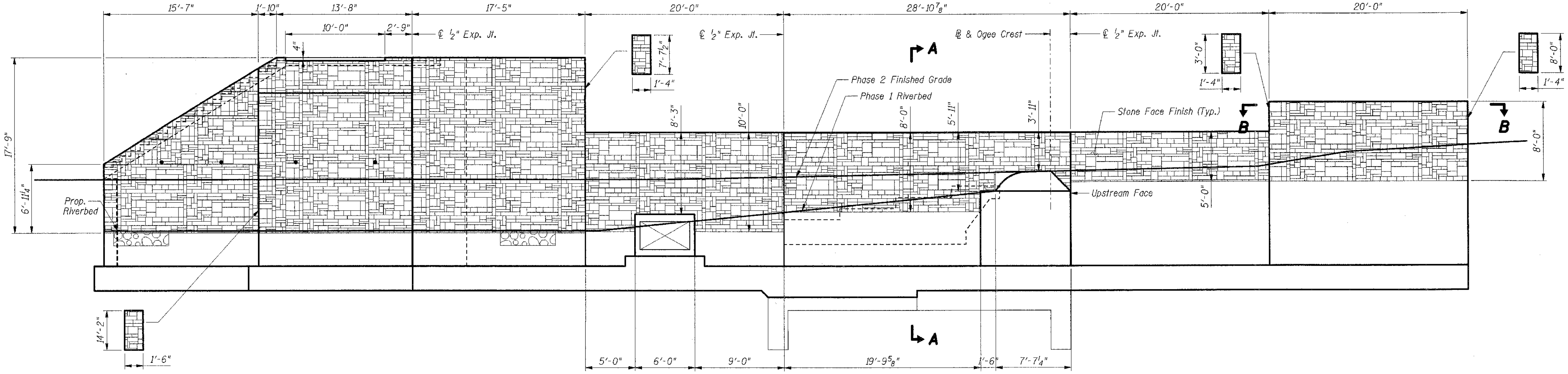
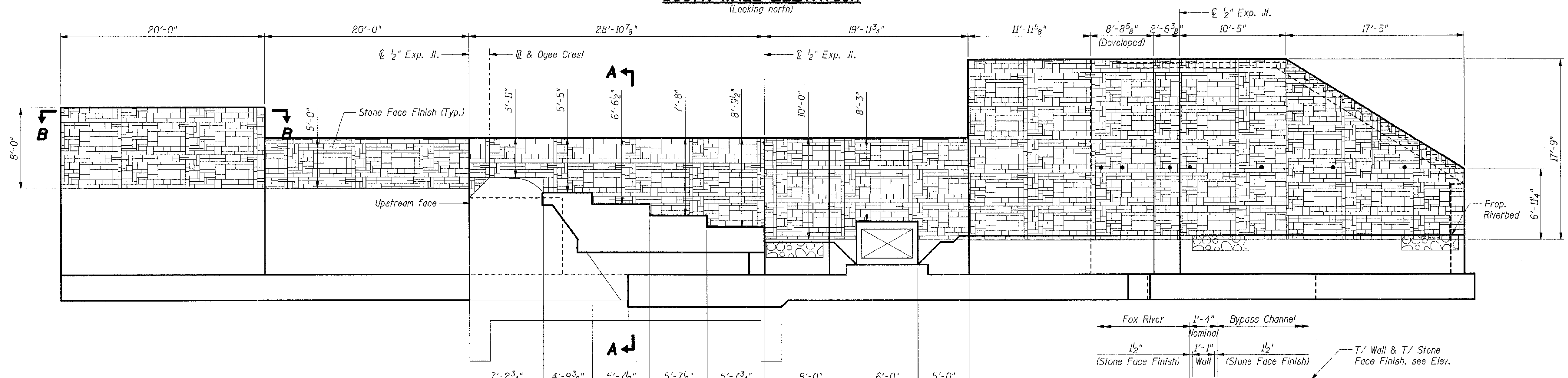
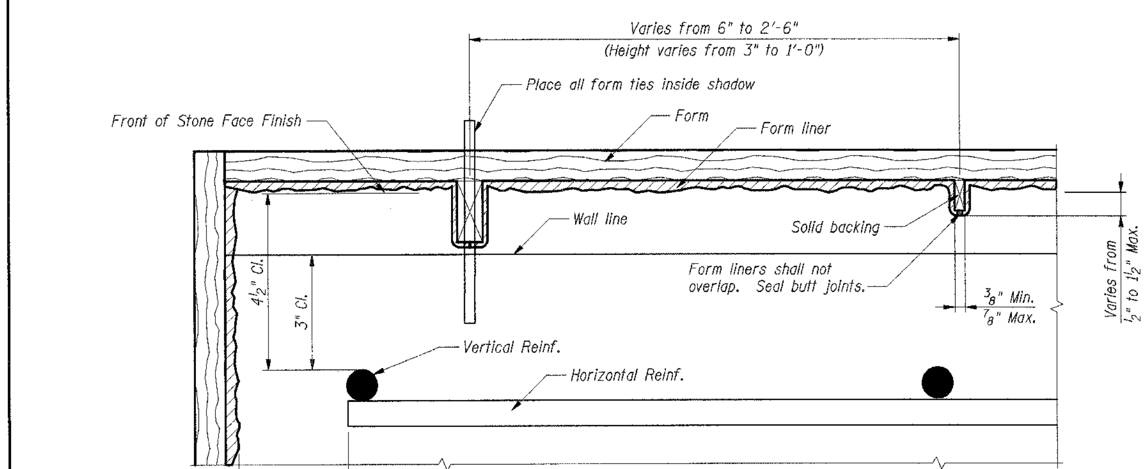


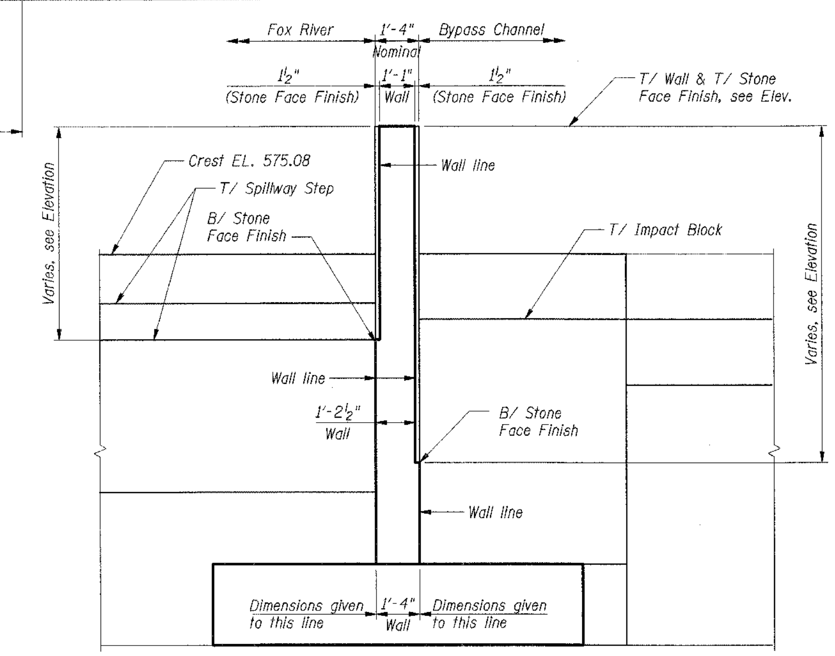
SOUTH WALL ELEVATION
(Looking north)



NORTH WALL ELEVATION
(Looking south)



SECTION B-B
(With suggested formwork detail)



SECTION A-A

Notes:
1. For Bill of Material, see Drwg. S13.

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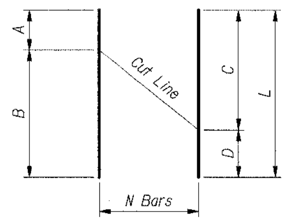
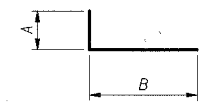
SOUTH ABUTMENT WALL FINISH DETAILS

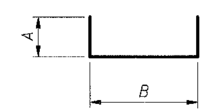
BAR CUTTING DIAGRAM



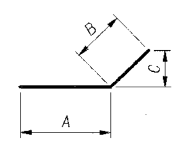
Bar	N	L	A	B	C	D
h19(E)	12	24'-0"	3'-6"	20'-6"	20'-6"	3'-6"
v13(E)	16	26'-9"	8'-8"	18'-1"	18'-1"	8'-8"
v16(E)	18	28'-0"	8'-8"	19'-4"	19'-4"	8'-8"



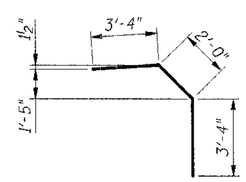
Bar	A	B
a4(E)	0'-9"	2'-5"
a5(E)	0'-9"	1'-2"
d3(E)	0'-10"	1'-11"
d6(E)	0'-10"	3'-0"
h11(E)	1'-0"	5'-8"
h17(E)	0'-10"	3'-3"
n1(E)	1'-4"	8'-5"
n2(E)	1'-2"	5'-7"
n3(E)	1'-0"	7'-3"
n4(E)	1'-4"	5'-2"
n5(E)	1'-2"	5'-2"
n6(E)	1'-0"	5'-2"
n7(E)	1'-7"	9'-1"
n8(E)	1'-4"	6'-2"
n9(E)	1'-0"	10'-7"
n10(E)	1'-4"	10'-7"
v10(E)	0'-10"	7'-0"
v21(E)	0'-10"	2'-2"



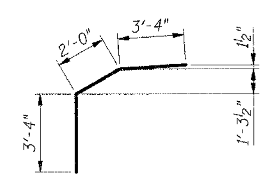
Bar	A	B
v18(E)	3'-6"	0'-6"
v19(E)	2'-10"	0'-6"
v20(E)	2'-10"	1'-10"
v22(E)	2'-0"	2'-2"
t6(E)	1'-2"	10'-8"
u12(E)	1'-7"	7'-11"
u13(E)	1'-7"	8'-1"
w5(E)	1'-2"	7'-4"



Bar	A	B	C
h21(E)	2'-1"	2'-7"	1'-10"
h22(E)	2'-7"	0'-10"	0'-7"
h24(E)	8'-6"	0'-10"	0'-7"
h26(E)	0'-7"	1'-11"	1'-0"
w6(E)	4'-6"	6'-6"	4'-7"



Bar u11(E)



Bar u10(E)

BAR LIST

Bar	No.	Size	Length	Shape
a1(E)	78	#5	3'-8"	straight
a2(E)	5	#5	21'-3"	straight
a3(E)	10	#5	8'-9"	straight
a4(E)	4	#5	3'-2"	L
a5(E)	76	#5	1'-11"	L
d1(E)	35	#5	2'-7"	straight
d2(E)	4	#7	7'-6"	straight
d3(E)	10	#5	2'-9"	L
d4(E)	46	#9	8'-3"	straight
d5(E)	10	#6	5'-9"	straight
d6(E)	16	#5	3'-10"	L
h1(E)	34	#5	19'-6"	straight
h2(E)	46	#5	22'-7"	straight
h3(E)	16	#5	19'-3"	straight
h4(E)	12	#5	28'-4"	straight
h5(E)	12	#5	4'-0"	straight
h6(E)	2	#5	7'-6"	straight
h7(E)	8	#5	8'-6"	straight
h8(E)	10	#5	7'-7"	straight
h9(E)	4	#5	11'-10"	straight
h10(E)	44	#5	16'-11"	straight
h11(E)	10	#6	6'-8"	L
h12(E)	8	#9	13'-6"	straight
h13(E)	37	#5	14'-11"	straight
h16(E)	16	#5	8'-11"	straight
h17(E)	22	#5	4'-1"	L
h18(E)	40	#5	20'-6"	straight
h19(E)	24	#5	24'-0"	straight
h20(E)	44	#5	9'-6"	straight
h21(E)	22	#5	4'-8"	bent
h22(E)	22	#5	3'-5"	bent
h23(E)	22	#5	8'-8"	straight
h24(E)	22	#5	9'-4"	bent
h25(E)	18	#5	2'-10"	straight
h26(E)	2	#5	2'-6"	bent
h27(E)	2	#5	2'-3"	straight
h28(E)	8	#5	20'-0"	straight
n1(E)	42	#8	9'-9"	L
n2(E)	40	#7	6'-9"	L
n3(E)	82	#6	8'-3"	L
n4(E)	61	#8	6'-6"	L
n5(E)	59	#7	6'-4"	L
n6(E)	145	#6	6'-2"	L
n7(E)	30	#9	10'-8"	L
n8(E)	71	#8	7'-6"	L
n9(E)	4	#6	11'-7"	L
n10(E)	4	#8	11'-11"	L

BAR LIST

Bar	No.	Size	Length	Shape
v1(E)	21	#5	12'-3"	straight
v2(E)	21	#5	9'-0"	straight
v3(E)	18	#5	7'-4"	straight
v4(E)	61	#5	13'-3"	straight
v5(E)	28	#7	13'-3"	straight
v6(E)	4	#7	12'-3"	straight
v7(E)	14	#5	7'-9"	straight
v8(E)	34	#5	20'-10"	straight
v9(E)	21	#5	10'-2"	straight
v10(E)	10	#5	7'-10"	L
v11(E)	13	#8	9'-0"	straight
v12(E)	13	#6	14'-6"	straight
v13(E)	16	#5	26'-9"	straight
v14(E)	32	#5	17'-3"	straight
v15(E)	31	#5	20'-0"	straight
v16(E)	18	#5	28'-0"	straight
v17(E)	32	#5	5'-0"	straight
v18(E)	55	#5	7'-6"	U
v19(E)	13	#5	6'-2"	U
v20(E)	4	#5	7'-6"	U
v21(E)	120	#5	3'-0"	L
v22(E)	16	#5	6'-2"	U
t1(E)	32	#7	7'-4"	straight
t2(E)	38	#7	8'-10"	straight
t3(E)	102	#7	10'-8"	straight
t4(E)	30	#7	7'-0"	straight
t5(E)	80	#7	13'-4"	straight
t6(E)	8	#7	13'-0"	U
u10(E)	7	#7	8'-8"	bent
u11(E)	7	#7	8'-8"	bent
u12(E)	6	#9	11'-1"	U
u13(E)	8	#9	11'-3"	U
w1(E)	2	#7	20'-5"	straight
w2(E)	48	#7	27'-6"	straight
w3(E)	14	#7	25'-2"	straight
w4(E)	56	#7	22'-3"	straight
w5(E)	12	#7	9'-8"	U
w6(E)	2	#7	11'-0"	bent
w7(E)	38	#7	21'-0"	straight

Notes:

1. Reinforcement bars designated (E) shall be epoxy coated.
2. Work this drawing with Drwgs. S8 to S10.

Item	Unit	Total
Rock Excavation	Cu yd	93
Porous Granular Embankment	Cu yd	42
Structure Excavation	Cu yd	425
Concrete Structures	Cu yd	332.0
Reinforcement Bars, Epoxy Coated	lb	40,720
Bridge Seat Sealer	Sq ft	23
Stone Face Finish	Sq ft	2,905

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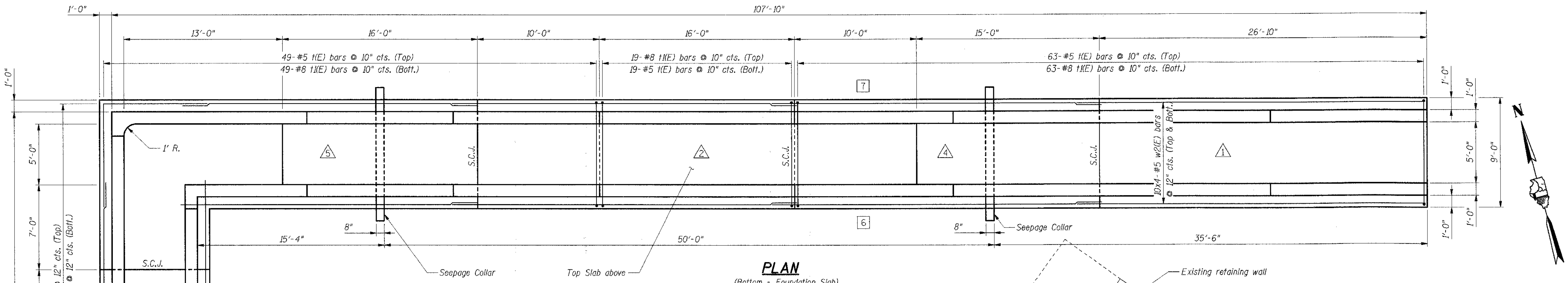
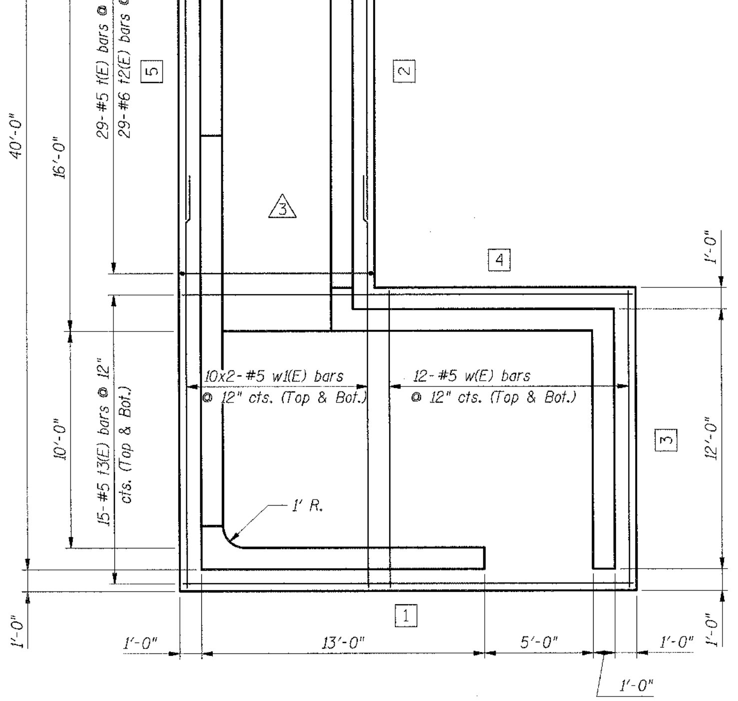
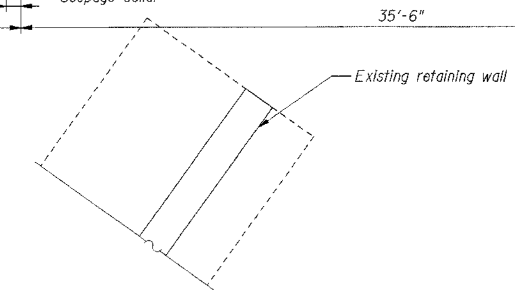






Note: E.J. = Wall Expansion Joint
C.J. = Wall Construction Joint
I.F. = Inside Face
O.F. = Outside Face
E.F. = Each Face
S.C.J. = Slab Construction Joint

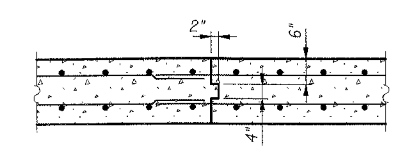
△1 Construction Sequence of Footing pours

☐1 Wall Elevation Number - See Sheets S17 & S18 of S19. for Elevations

Tilt bottom slab hooked bars if necessary to provide specified clearances.

MIN. BAR LAPS

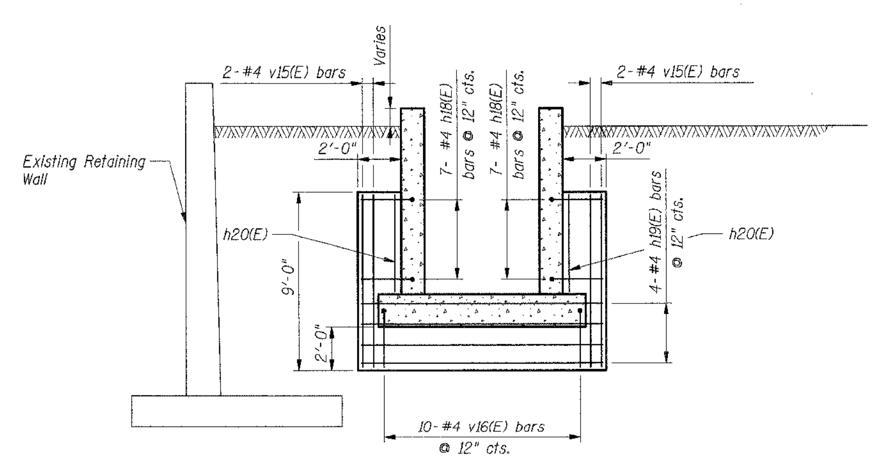
#4 = 2'-6"
#5 = 3'-2"
#5 = 3'-8" (Top Bar)
#6 = 3'-10"



SLAB CONSTRUCTION JOINT DETAIL

BILL OF MATERIAL

Structure Excavation	Cu. Yd.	610
Porous Granular Embankment	Cu. Yd.	70



ELEVATION - TYPICAL SEEPAGE COLLAR

(Looking West @ Sta. 42+05.00, 41+55.00 Similar)

Maximum Bearing Pressure = 1.0 ksf
Allowable Bearing Pressure = 1.5 ksf

* Bottom of excavation shall be proof rolled to locate any areas not meeting the Allowable Bearing Pressure. Unsuitable material shall be removed and replaced with CA-6 aggregate. The CA-6 shall be compacted to 95% of Standard Proctor Density. Cost of removal and replacement of unsuitable soil shall be included in pay item "Structure Excavation"

LOADING

Equivalent Fluid Lateral Soil Pressure = 40 lb/ft ^{3}

DESIGN SPECIFICATIONS

2002 AASHTO
U.S. Army Corps of Engineers
Engineer Manual No. 1110-2-2104
ACI 318-02

DESIGN STRESSES

FIELD UNITS

F'c = 3,500 psi
Fy = 60,000 psi (Reinf.)
Fy = 36,000 psi (Channels & misc. pieces)
Fy = 50,000 psi (Wide Flange Beams)
Fy = 28,000 psi (6061-T6 Aluminum Alloy)

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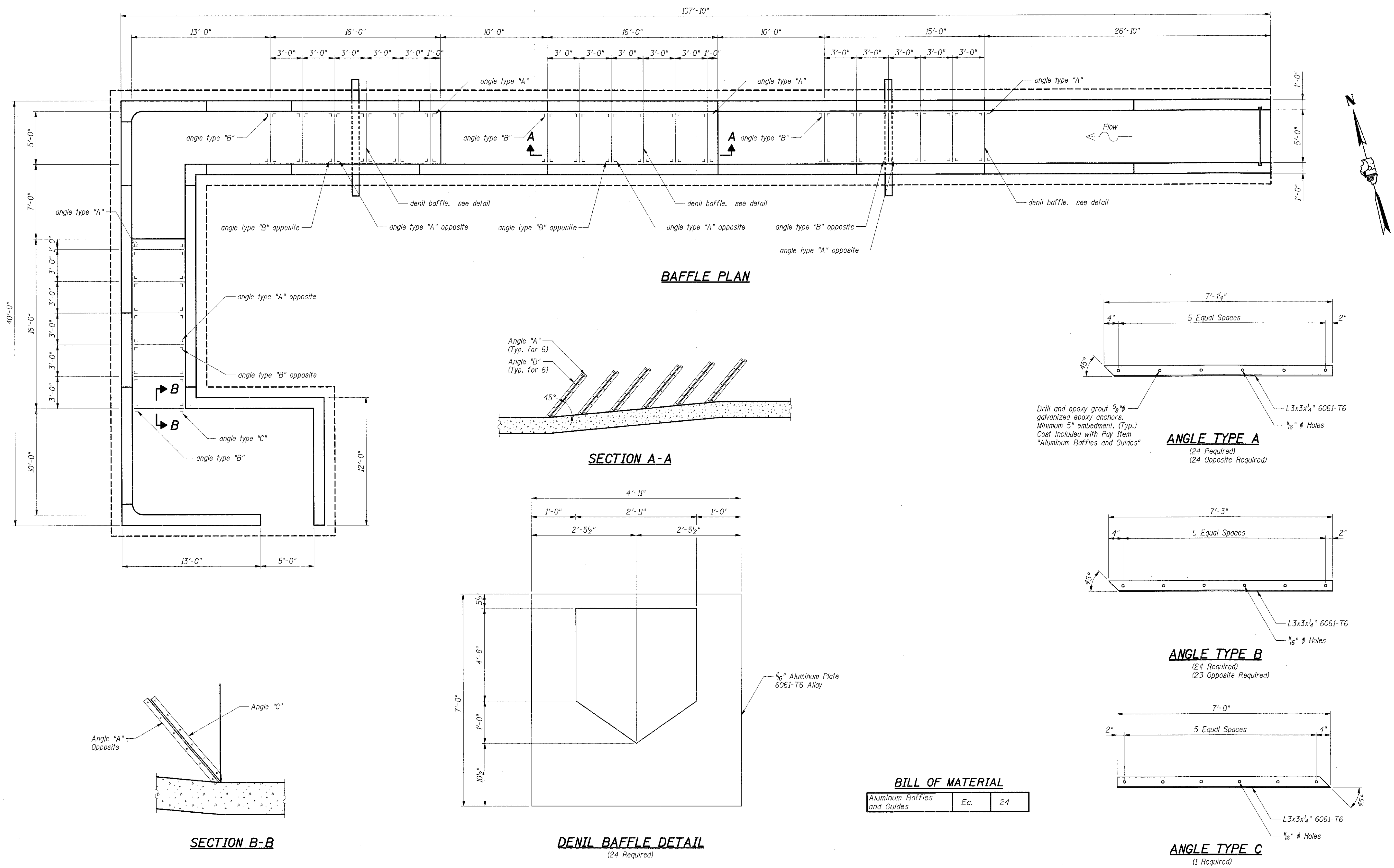

BILL OF MATERIAL

Aluminum Baffles and Guides	Ea.	24

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Drawn By NDP Checked By BGC

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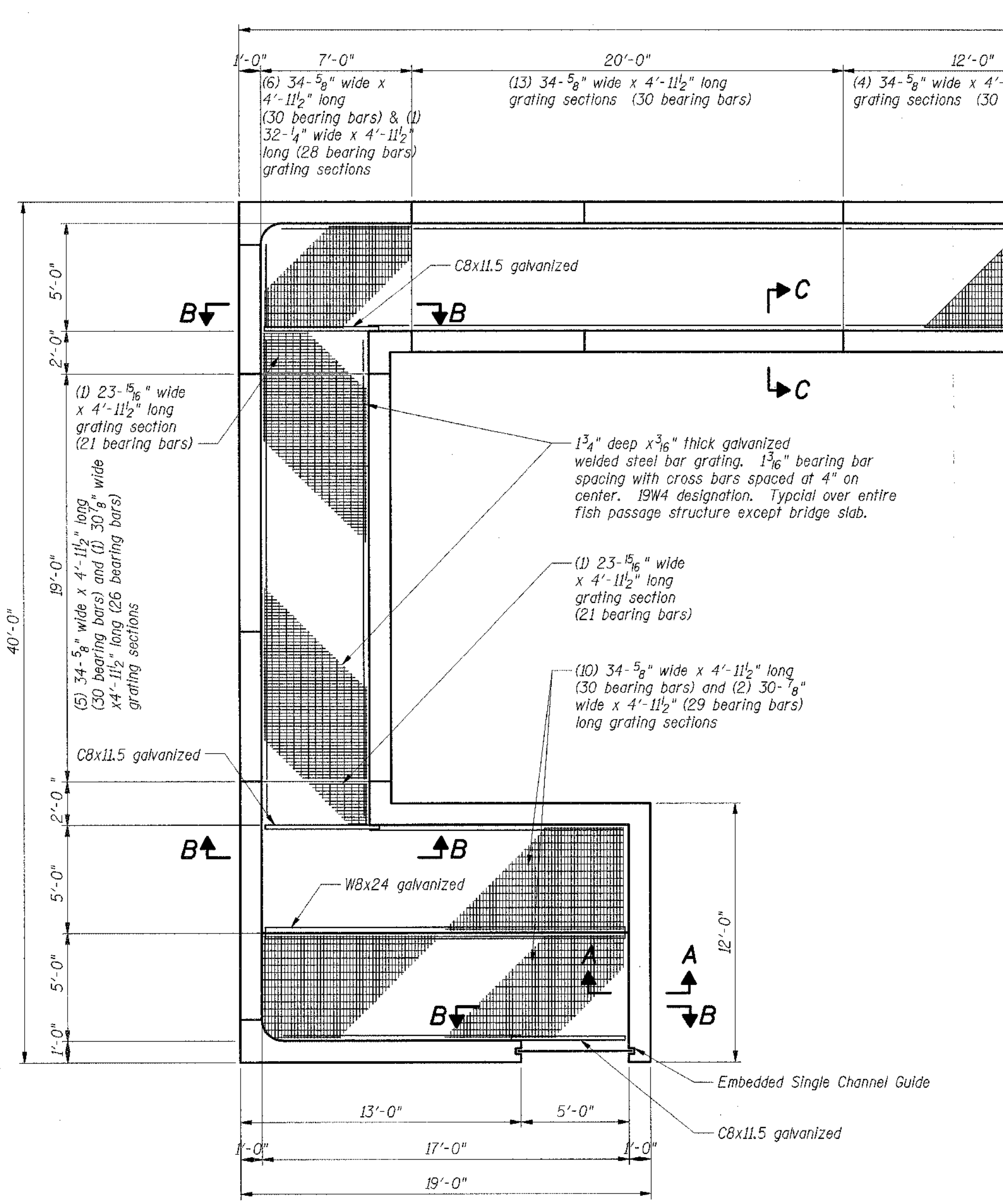
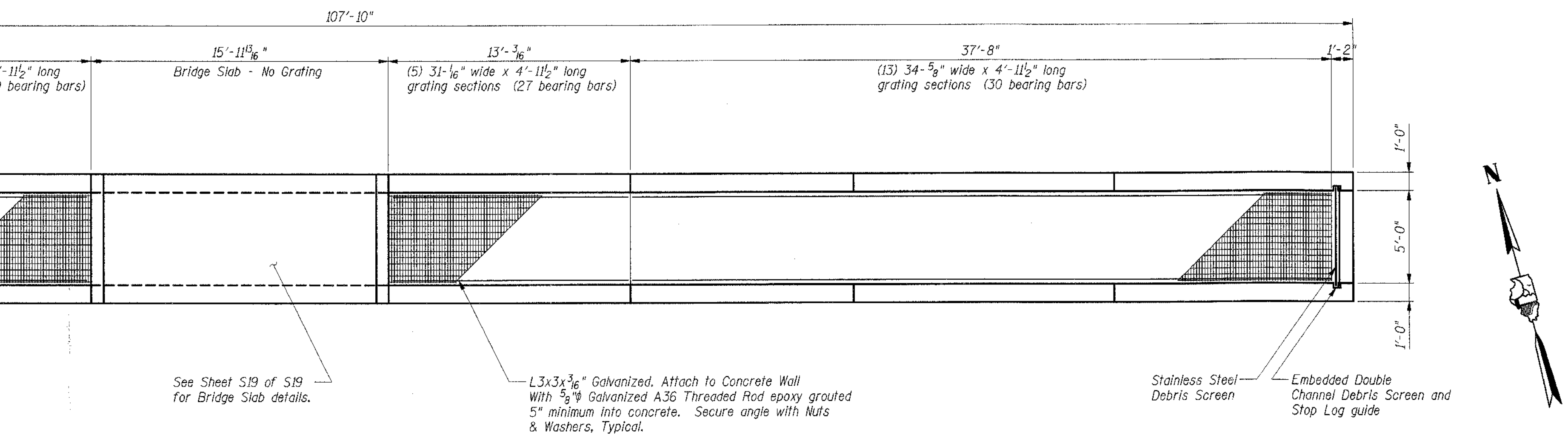
Cochran & Wilken, Inc. Consulting Engineers & Scientists

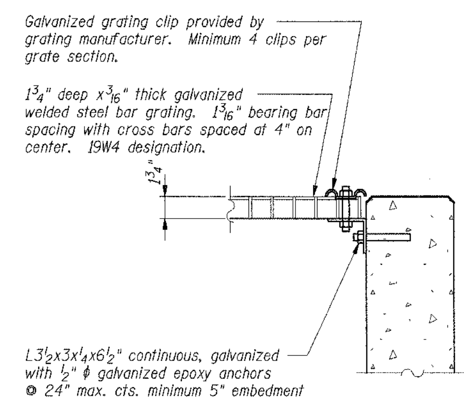
DENIL FISH LADDER PLAN





GRATING PLAN

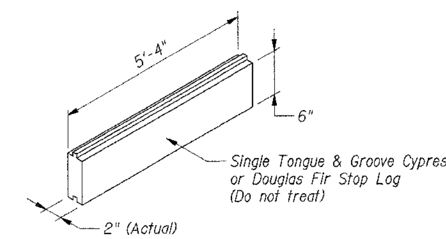
Furnishing and installing grating clips, supporting steel (beams, channels, angles, bolts, nuts, washers and epoxy anchors) shall be included in pay item "Galvanized Welded Steel Bar Grating".



SECTION C-C

BILL OF MATERIAL

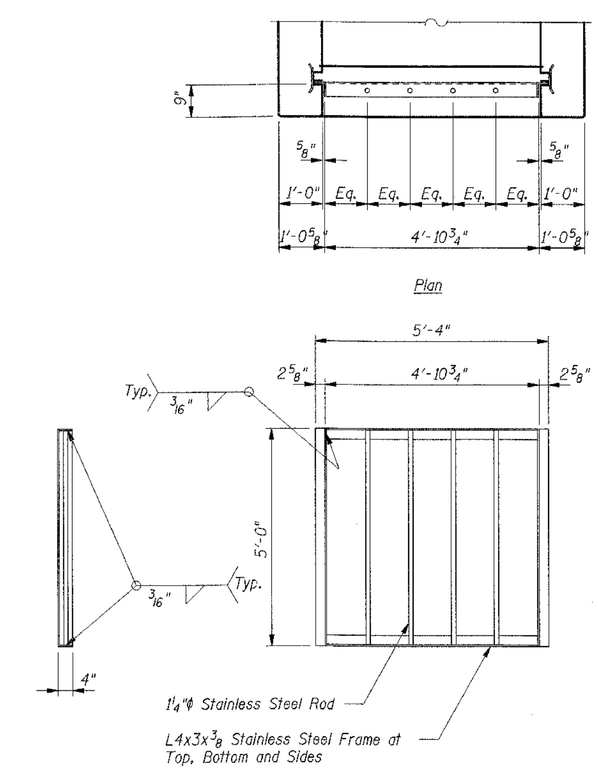
Galvanized Welded Steel Bar Grating	Sq. Ft.	820
Stainless Steel Debris Grate	Ea.	1



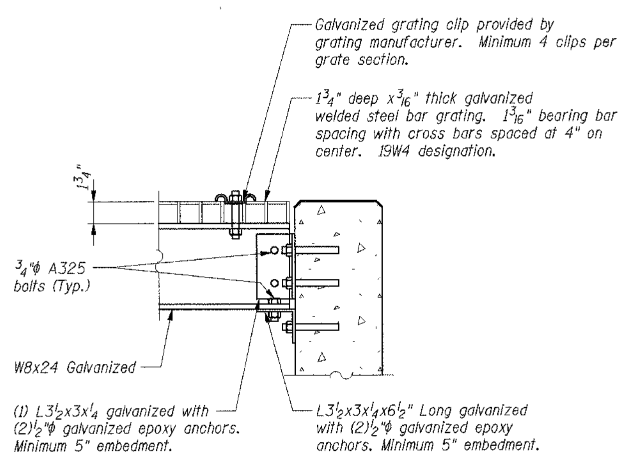
Cost of furnishing and installing Stop Logs and Stop Log guides shall be included in pay item "Concrete Structures".

STOP LOG DETAIL

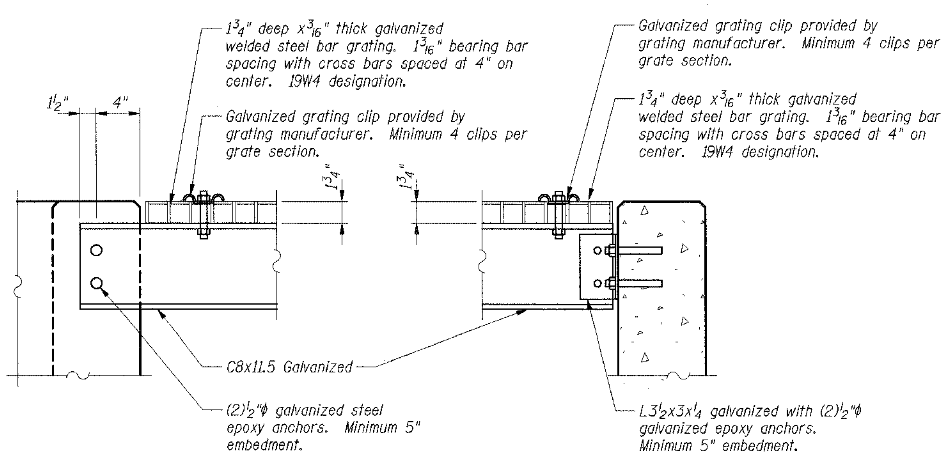
(22 Required)



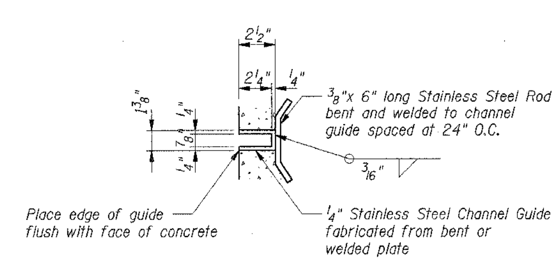
STAINLESS STEEL DEBRIS GRATE



SECTION A-A

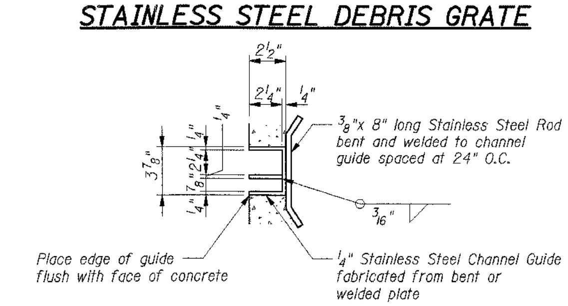


SECTION B-B



CHANNEL GUIDE DETAIL

(2 Required)



DOUBLE CHANNEL GUIDE DETAIL

(2 Required)

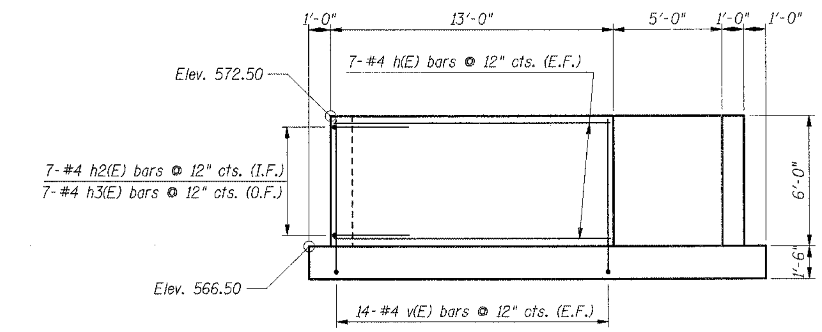
Designed By MEF Checked By BGC
Drawn By NDD Checked By BGC

FR-422

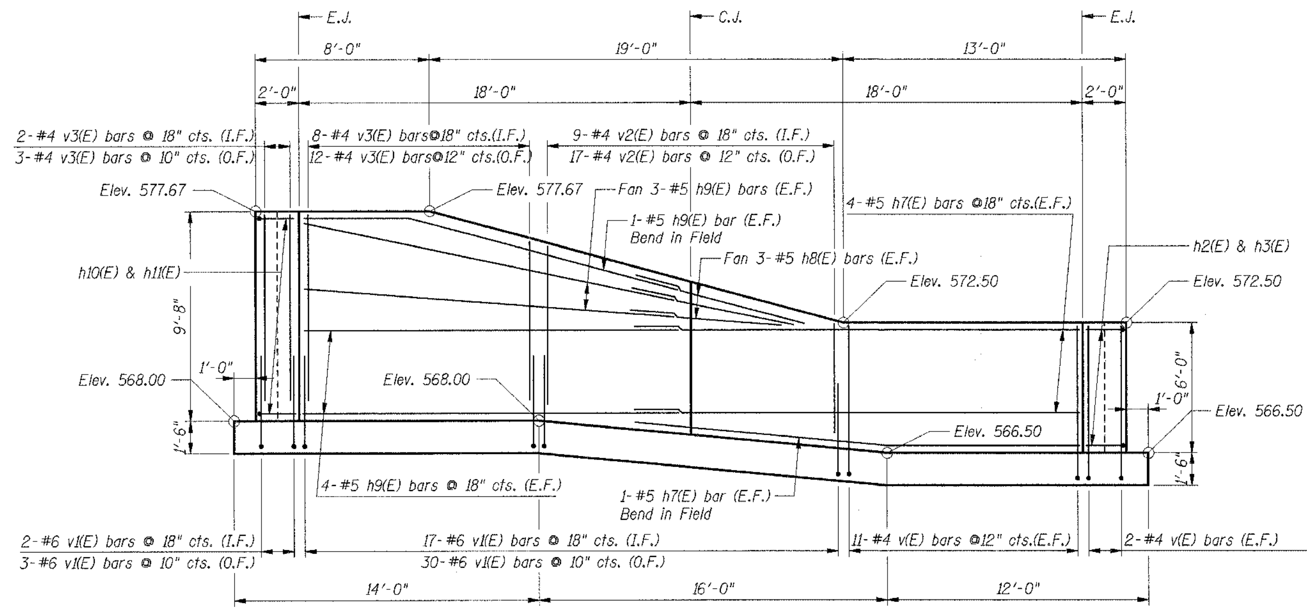
Cochran & Wilken, Inc. Consulting Engineers & Scientists

MIN. BAR LAPS

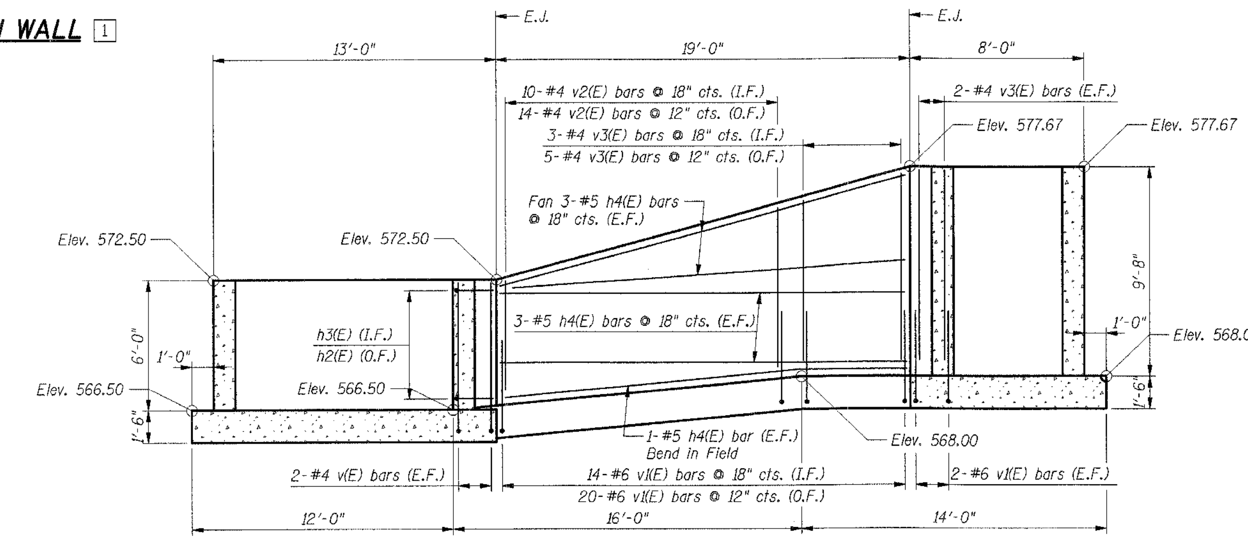
#4 = 2'-6"
#5 = 3'-2"
#5 = 3'-8" (Top Bar)
#6 = 3'-10"



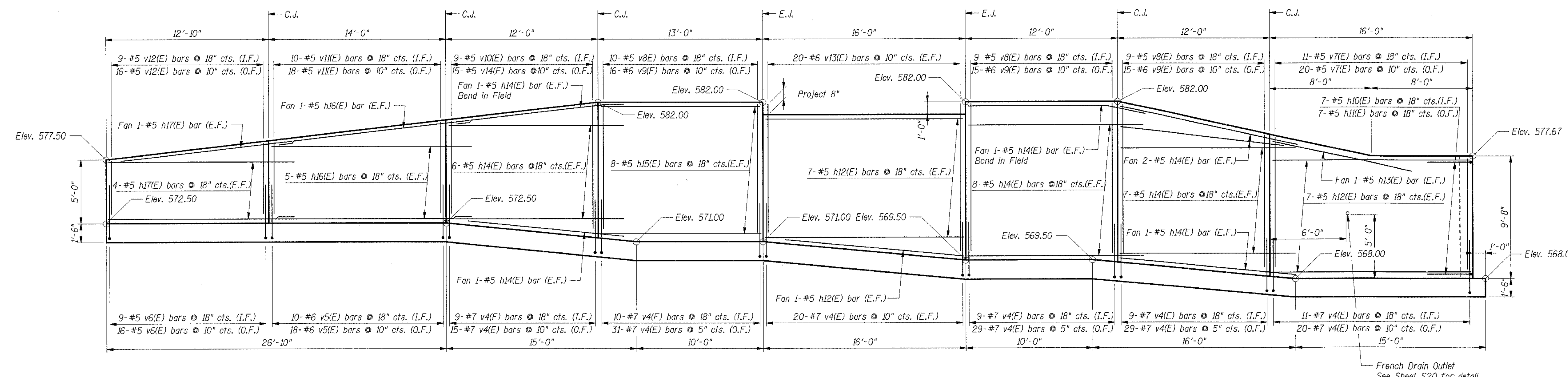
ELEVATION - SOUTH WALL 1
(Looking North)



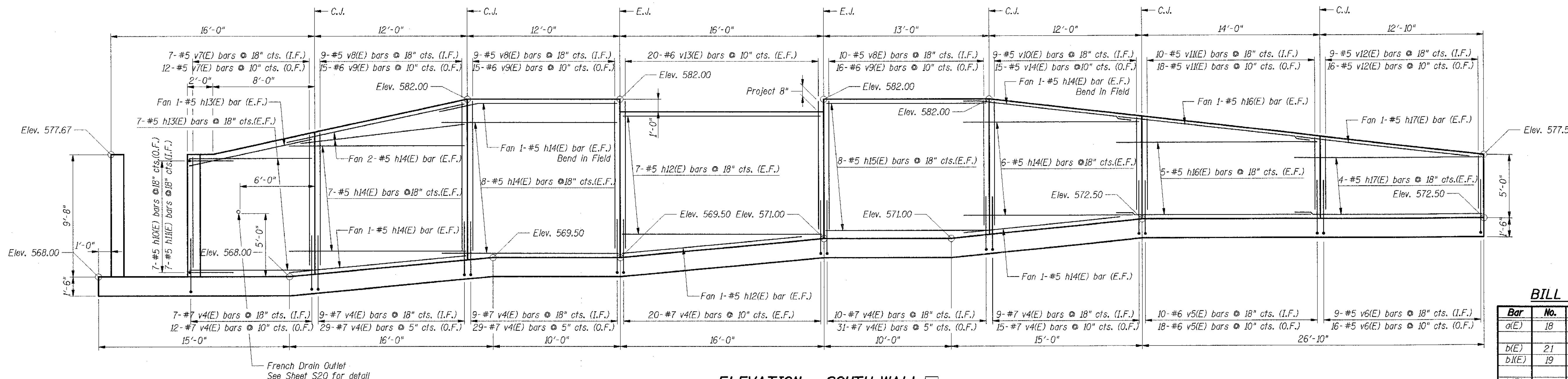
ELEVATION - WEST WALL 5
(Looking East)



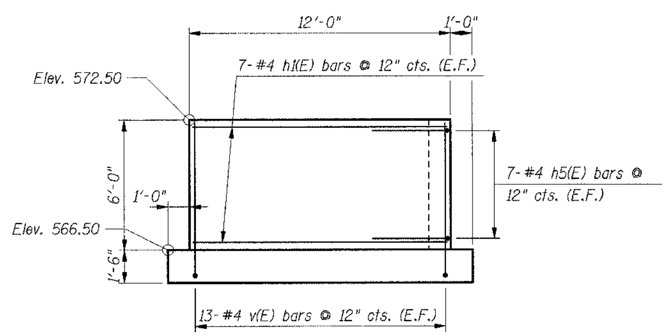
ELEVATION - EAST WALL 2
(Looking West)



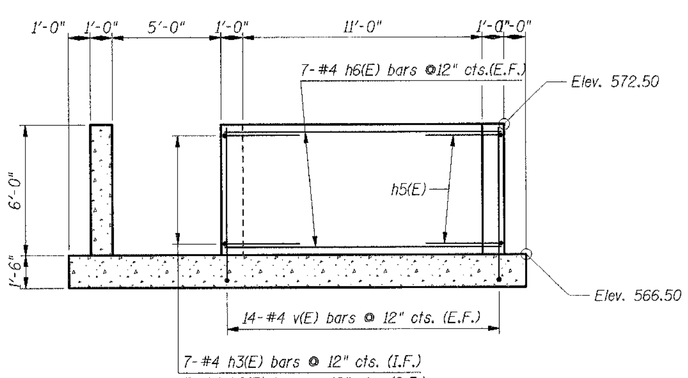
ELEVATION - NORTH WALL 7
(Looking South)



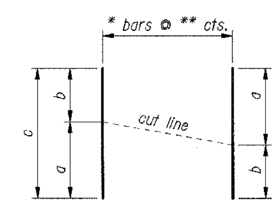
ELEVATION - SOUTH WALL 6
(Looking North)



ELEVATION - WEST WALL 3
(Looking East)



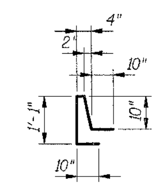
SECTION - WALL 4
(Looking North)



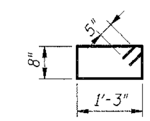
Bar	a	b	c	*	**
v10(E)	7'-2"	4'-6"	11'-8"	9	18"
v13(E)	9'-6"	8'-0"	17'-6"	40	10"
v14(E)	7'-2"	4'-6"	11'-8"	15	10"

BARS v10(E) & v13(E)

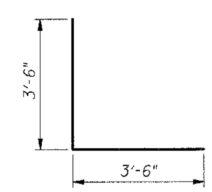
Order bars full length. Cut as shown and use half of bars in each face or opposite wall of channel.



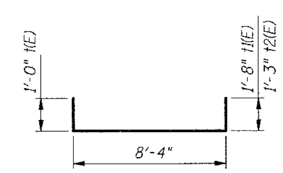
BAR s1(E)



BAR s(E)



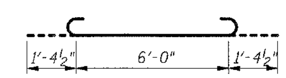
BAR h5(E)



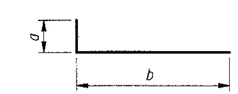
BARS t(E), t1(E), & t2(E)

MIN. BAR LAPS

#4 = 2'-6"
#5 = 3'-2"
#5 = 3'-8" (Top Bar)
#6 = 3'-10"

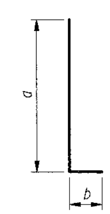


BAR b(E)



Bar	a	b
h2(E)	1'-0"	3'-0"
h3(E)	1'-5"	3'-0"
h10(E)	1'-0"	3'-8"
h11(E)	1'-5"	3'-8"
h18(E)	1'-0"	2'-4"

BARS h2(E), h3(E), h10(E), h11(E) & h18(E)



Bar	a	b
v(E)	6'-10"	0'-10"
v1(E)	5'-7"	1'-3"
v4(E)	7'-7"	1'-6"
v5(E)	6'-3"	1'-3"
v6(E)	5'-9"	1'-0"
v16(E)	2'-10"	1'-0"

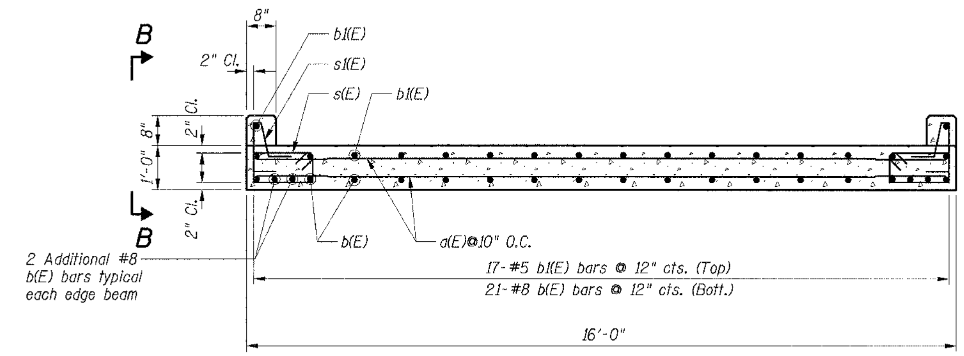
BARS v(E), v1(E), v4(E), v5(E), v6(E) & v16(E)

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	18	#5	15'-6"	straight
b(E)	21	#8	8'-9"	hooked
b1(E)	19	#5	6'-6"	straight
h(E)	14	#4	12'-6"	straight
h1(E)	14	#4	11'-6"	straight
h2(E)	14	#4	4'-0"	bent
h3(E)	14	#4	4'-5"	bent
h4(E)	14	#5	18'-6"	straight
h5(E)	14	#4	7'-0"	bent
h6(E)	14	#4	12'-6"	straight
h7(E)	10	#5	21'-0"	straight
h8(E)	6	#5	9'-6"	straight
h9(E)	16	#5	17'-6"	straight
h10(E)	14	#5	4'-8"	bent
h11(E)	14	#5	5'-1"	bent
h12(E)	32	#5	15'-6"	straight
h13(E)	16	#5	11'-0"	straight
h14(E)	108	#5	15'-2"	straight
h15(E)	32	#5	12'-6"	straight
h16(E)	24	#5	17'-2"	straight
h17(E)	20	#5	16'-0"	straight
h18(E)	28	#4	3'-4"	bent
h19(E)	8	#4	10'-4"	straight
h20(E)	4	#4	4'-10"	straight
s(E)	12	#4	4'-8"	stirrup
s1(E)	10	#3	3'-11"	bent
t(E)	160	#5	10'-4"	U
t1(E)	131	#8	11'-8"	U
t2(E)	29	#6	10'-10"	U
t3(E)	30	#5	20'-4"	straight
v(E)	112	#4	7'-8"	bent
v1(E)	90	#6	6'-10"	bent
v2(E)	50	#4	5'-9"	straight
v3(E)	37	#4	7'-9"	straight
v4(E)	412	#7	9'-1"	bent
v5(E)	56	#6	7'-6"	bent
v6(E)	50	#5	6'-9"	bent
v7(E)	50	#5	8'-4"	straight
v8(E)	56	#5	9'-2"	straight
v9(E)	172	#6	9'-10"	straight
v10(E)	9	#5	11'-8"	straight
v11(E)	56	#5	6'-0"	straight
v12(E)	50	#5	4'-9"	straight
v13(E)	40	#6	17'-6"	straight
v14(E)	15	#5	11'-8"	straight
v15(E)	8	#4	8'-4"	straight
v16(E)	20	#4	3'-10"	bent
w(E)	24	#5	13'-4"	straight
w1(E)	40	#5	20'-2"	straight
w2(E)	80	#5	28'-8"	straight
Concrete Structures			Cu. Yd.	192.9
Reinforcement Bars, Epoxy Coated			Pound	31,740

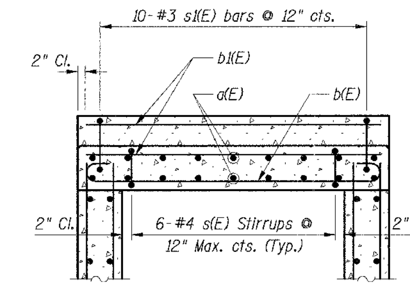
Reinforcement bars designated (E) shall be epoxy coated.

Designed By MEF Checked By BGC
Drawn By NDC Checked By BGC

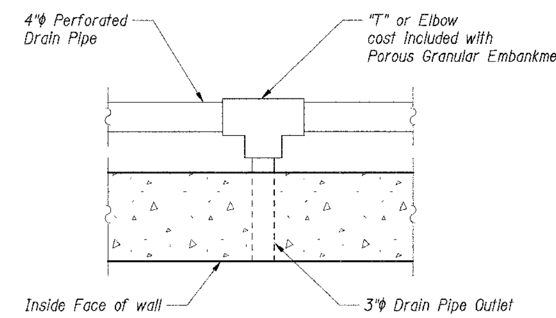


Tilt b(E) bars as necessary to provide the specified clearances.

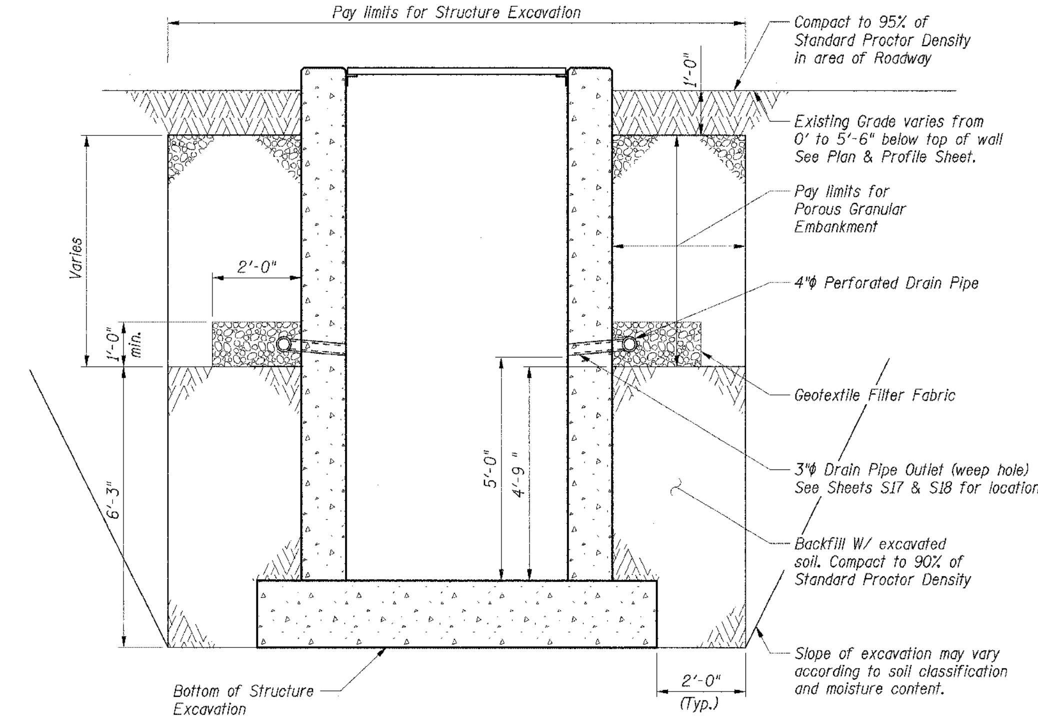
SECTION A-A
(Bridge Slab)



SECTION B-B
(Bridge Slab)

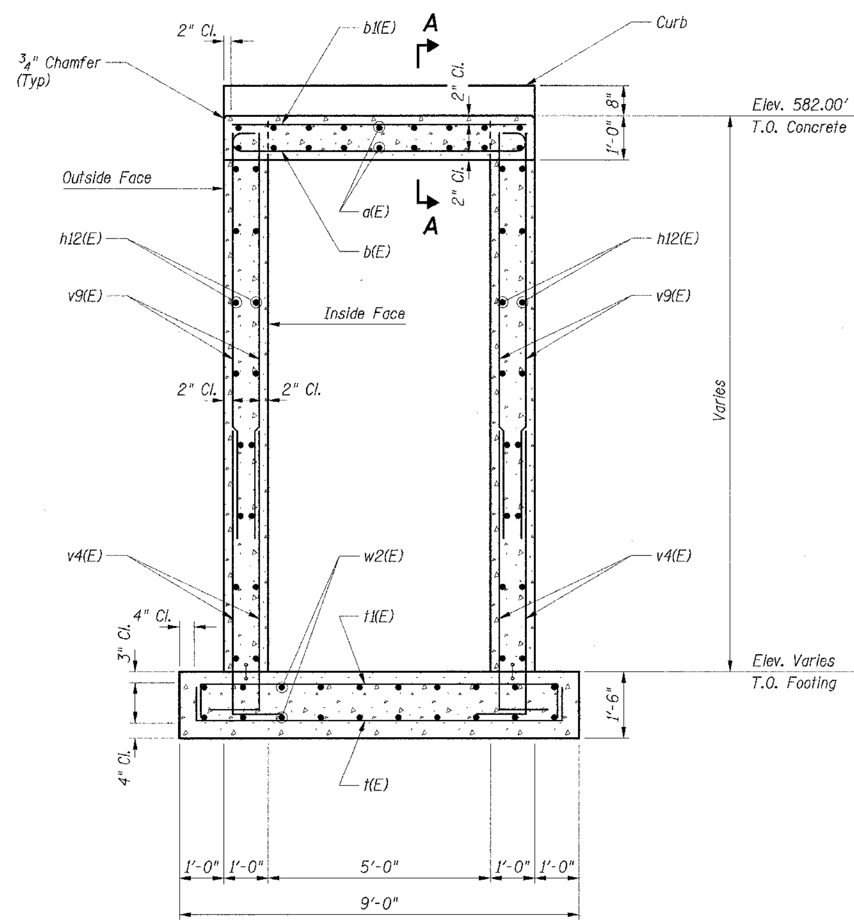


FRENCH DRAIN DETAIL
See Sheet S17, S18 of S19 for Locations

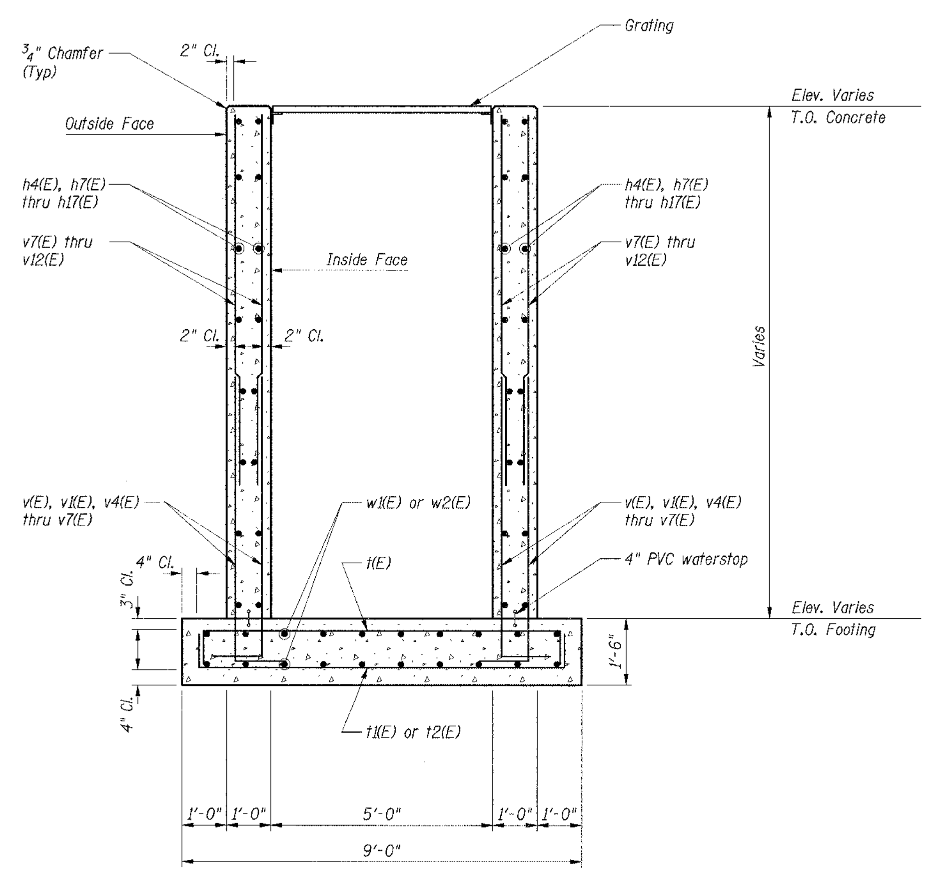


DRAIN DETAIL
(Limits of Porous Granular Embankment, Sta. 41+43 to Sta. 42+07)

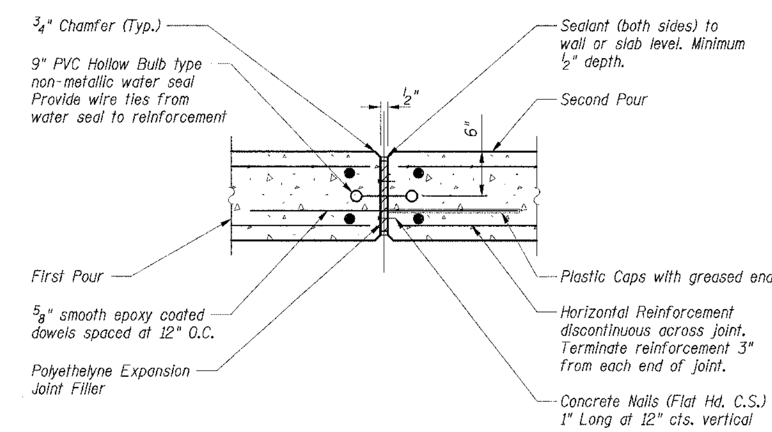
The Drain installation shall follow Article 601 of the Standard Specifications except that the trench will be filled with CA-5 or CA-7 coarse aggregate. The trench shall be lined with Geotechnical Fabric for Drains and have a 4" diameter drain pipe located near the base of the excavation. The cost of the Geotechnical Fabric and Drain Pipe is included with the pay item Porous Granular Embankment. At a minimum, the first five feet of trench backfill abutting the upstream end of the porous granular embankment, along the Denil Fish Ladder, shall be in accordance with the special provision "Impervious Backfill".



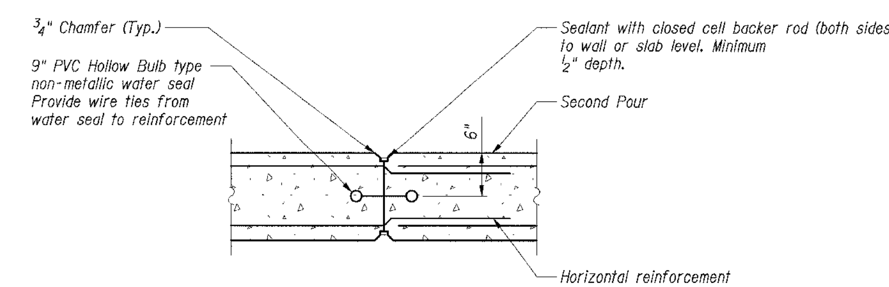
SECTION AT BRIDGE SLAB



TYPICAL SECTION



WALL EXPANSION JOINT DETAIL



WALL CONSTRUCTION JOINT DETAIL

The cost to furnish and install waterstops, sealent, backer rod, joint material and concrete nails shall be included in pay item Concrete Structures.

Designed By MEF Checked By BGC
Drawn By NDD Checked By BGC

FR-422

LOG OF BORING NUMBER A-2

OWNER: IDNR/City of Yorkville
PROJECT NAME: Yorkville Dam
ARCHITECT-ENGINEER: Teng & Assoc.
SITE LOCATION: Kendall County, Illinois
STS Consultants Ltd.

SURFACE ELEVATION +570.0 NGVD

Gravelly fine to coarse sand, trace silt, clay and organics - gray - medium dense (GM-SM) With boulders and cobbles.

Highly weathered soft shale

End of Boring
Borehole backfilled upon completion.
Automatic-Diedrich Hammer used for Standard Penetration Tests.
SS* = SPT value based on first 6 in.

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WL	BORING STARTED 9/13/04	STS OFFICE	Chicago Area - 01
WL	BORING COMPLETED 9/13/04	ENTERED BY KKB	SHEET NO. 1 OF 1
WL	RIG/FOREMAN Bomb/Lehtinen	APP'D BY DSD	STS JOB NO. 34098

LOG OF BORING NUMBER A-3

OWNER: IDNR/City of Yorkville
PROJECT NAME: Yorkville Dam
ARCHITECT-ENGINEER: Teng & Assoc.
SITE LOCATION: Kendall County, Illinois
STS Consultants Ltd.

SURFACE ELEVATION +569.6 NGVD

Water

Gravelly fine to coarse sand, trace silt, clay and organics - gray- very dense (GM-SM)

Highly weathered shale

End of Boring
Borehole backfilled upon completion.
Automatic-Diedrich Hammer used for Standard Penetration Tests.

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WL	BORING STARTED 9/9/04	STS OFFICE	Chicago Area - 01
WL	BORING COMPLETED 9/9/04	ENTERED BY KKB	SHEET NO. 1 OF 1
WL	RIG/FOREMAN Bomb/Lehtinen	APP'D BY DSD	STS JOB NO. 34098

LOG OF BORING NUMBER A-4

OWNER: IDNR/City of Yorkville
PROJECT NAME: Yorkville Dam
ARCHITECT-ENGINEER: Teng & Assoc.
SITE LOCATION: Kendall County, Illinois
STS Consultants Ltd.

SURFACE ELEVATION +575.5 NGVD

Water

Sandy organic silt, little gravel, trace shells - black - very soft (ML)

Gravelly fine to coarse sand, little gravel, trace clay - gray - medium dense (GM-SM)

Cobbles and boulders below 8.5 ft.

Weathered soft shale

End of Boring
Borehole backfilled upon completion.
Safety Hammer used for Standard Penetration Tests.

* Calibrated Penetrometer

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WL	BORING STARTED 8/30/04	STS OFFICE	Chicago Area - 01
WL	BORING COMPLETED 8/30/04	ENTERED BY KKB	SHEET NO. 1 OF 1
WL	RIG/FOREMAN D-25/Lehtinen	APP'D BY DSD	STS JOB NO. 34098

LOG OF BORING NUMBER A-5

OWNER: IDNR/City of Yorkville
PROJECT NAME: Yorkville Dam
ARCHITECT-ENGINEER: Teng & Assoc.
SITE LOCATION: Kendall County, Illinois
STS Consultants Ltd.

SURFACE ELEVATION +575.5 NGVD

Water

Organic silt, trace gravel, sand and shells - black - very soft (ML)

Gravelly fine to coarse sand, little silt, trace clay - gray - dense (GM-SM)
With large gravel and cobbles noted.
Weathered soft shale

End of Boring
Borehole backfilled upon completion.
Safety Hammer used for Standard Penetration Tests.
SS* = SPT value based on first 6 in.
WOH = Weight of Hammer

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WL	BORING STARTED 8/30/04	STS OFFICE	Chicago Area - 01
WL	BORING COMPLETED 8/30/04	ENTERED BY KKB	SHEET NO. 1 OF 1
WL	RIG/FOREMAN D-25/Lehtinen	APP'D BY DSD	STS JOB NO. 34098

LOG OF BORING NUMBER A-6

OWNER: IDNR/City of Yorkville
PROJECT NAME: Yorkville Dam
ARCHITECT-ENGINEER: Teng & Assoc.
SITE LOCATION: Kendall County, Illinois
STS Consultants Ltd.

SURFACE ELEVATION +575.5 NGVD (Continued)

Water

Organic silt, trace clay and sand - black - very soft (ML)

Gravelly fine to coarse sand, little silt, trace clay - brownish gray - dense (SM-GM)

Boulders and cobbles noted below 6.5 ft.

Moderately weathered soft shale

. . . continued

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WL	BORING STARTED 8/27/04	STS OFFICE	Chicago Area - 01
WL	BORING COMPLETED 8/27/04	ENTERED BY KKB	SHEET NO. 2 OF 2
WL	RIG/FOREMAN Joy 12-Barge/Lehtinen	APP'D BY DSD	STS JOB NO. 34098

LOG OF BORING NUMBER A-6

OWNER: IDNR/City of Yorkville
PROJECT NAME: Yorkville Dam
ARCHITECT-ENGINEER: Teng & Assoc.
SITE LOCATION: Kendall County, Illinois
STS Consultants Ltd.

SURFACE ELEVATION +575.5 NGVD (Continued)

Moderately weathered soft shale

End of Boring
Borehole backfilled upon completion.
Casing used: 10 ft. of 4 in.
Safety Hammer used for Standard Penetration Tests.
WOH = Weight of Hammer

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WL	BORING STARTED 8/27/04	STS OFFICE	Chicago Area - 01
WL	BORING COMPLETED 8/27/04	ENTERED BY KKB	SHEET NO. 2 OF 2
WL	RIG/FOREMAN Joy 12-Barge/Lehtinen	APP'D BY DSD	STS JOB NO. 34098

LOG OF BORING NUMBER A-7

OWNER: IDNR/City of Yorkville
PROJECT NAME: Yorkville Dam
ARCHITECT-ENGINEER: Teng & Assoc.
SITE LOCATION: Kendall County, Illinois
STS Consultants Ltd.

SURFACE ELEVATION +575.5 NGVD

Water

Silty fine to coarse sand, little gravel - brown and black - loose (SM)
With occasional organic seams noted.

Silty fine to coarse sand, little gravel, trace organics - brownish gray - medium dense (SM)
With occasional soft clay seams noted.

Highly weathered shale

. . . continued

* Calibrated Penetrometer

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WL	BORING STARTED 8/27/04	STS OFFICE	Chicago Area - 01
WL	BORING COMPLETED 8/27/04	ENTERED BY KKB	SHEET NO. 2 OF 2
WL	RIG/FOREMAN Joy 12-Barge/Lehtinen	APP'D BY DSD	STS JOB NO. 34098

LOG OF BORING NUMBER A-7

OWNER: IDNR/City of Yorkville
PROJECT NAME: Yorkville Dam
ARCHITECT-ENGINEER: Teng & Assoc.
SITE LOCATION: Kendall County, Illinois
STS Consultants Ltd.

SURFACE ELEVATION +575.5 NGVD (Continued)

Moderately weathered soft shale

End of Boring
Borehole backfilled upon completion.
Casing used: 10 ft. of 4 in.
Safety Hammer used for Standard Penetration Tests.
WOH = Weight of Hammer

* Calibrated Penetrometer

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WL	BORING STARTED 8/27/04	STS OFFICE	Chicago Area - 01
WL	BORING COMPLETED 8/27/04	ENTERED BY KKB	SHEET NO. 2 OF 2
WL	RIG/FOREMAN Joy 12-Barge/Lehtinen	APP'D BY DSD	STS JOB NO. 34098

LOCATION OF BORINGS ON SHEET 6

OWNER: IDNR/City of Yorkville
PROJECT NAME: Yorkville Dam
ARCHITECT-ENGINEER: Teng & Assoc.
SITE LOCATION: Kendall County, Illinois
LOG OF BORING NUMBER: A-8

(DEPTH FT)	ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE (FT)	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS/FT³	UNCONFINED COMPRESSIVE STRENGTH TONS/FT²	PLASTIC LIMIT %	WATER CONTENT %	LIQUID LIMIT %	STANDARD PENETRATION BLOWS/FT
						SURFACE ELEVATION +562.1 NGVD						
0.0				0.7		Topsoil						
1.0		1	SS			Fill: Silty fine to coarse sand, little gravel, trace clay, crushed concrete and brick - brown - medium dense - moist (SM)						26
2.0			PA									
3.0		2	SS									15
4.0			PA									
5.0		3	SS									16
6.0												
7.0			PA									
8.0		4	SS									9/6"
		4A	SS	8.5		Highly weathered soft shale and interbedded limestone						50/6"
9.0				9.0		End of Boring Borehole backfilled upon completion. Automatic-Diedrich Hammer used for Standard Penetration Tests.						

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WL	BORING STARTED 9/13/04	STS OFFICE Chicago Area - 01	
WL	BORING COMPLETED 9/13/04	ENTERED BY KKB	SHEET NO. 1 OF 1
WL	RIG/FOREMAN Bomb/Lehtinen	APP'D BY DSD	STS JOB NO. 34098

BORING LOG 134098.GPJ STS.GDT 1/5/04

OWNER: IDNR/City of Yorkville
PROJECT NAME: Yorkville Dam
ARCHITECT-ENGINEER: Teng & Assoc.
SITE LOCATION: Kendall County, Illinois
LOG OF BORING NUMBER: A-9

(DEPTH FT)	ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE (FT)	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS/FT³	UNCONFINED COMPRESSIVE STRENGTH TONS/FT²	PLASTIC LIMIT %	WATER CONTENT %	LIQUID LIMIT %	STANDARD PENETRATION BLOWS/FT
						SURFACE ELEVATION +578.1 NGVD						
0.0				0.5		Topsoil						
1.0		1	SS			Fill: Silty fine to coarse sand, little gravel, trace clay, roots, wood and crushed concrete - brown - medium dense to loose (SM)						17
2.0			PA									
3.0		2	SS									27
4.0			PA									
5.0		3	SS									13
6.0				6.5								
7.0		3A	SS			Gravelly fine to coarse sand, little silt, trace clay and organics - gray - loose (GM-SM) (Possible fill)						9/6"
			PA			Clayey between 7.5 and 9.5 ft.						3
8.0		4	SS									
9.0												
10.0			PA									

. . . continued

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WL	BORING STARTED 9/14/04	STS OFFICE Chicago Area - 01	
WL	BORING COMPLETED 9/14/04	ENTERED BY KKB	SHEET NO. 1 OF 2
WL	RIG/FOREMAN Bomb/Lehtinen	APP'D BY DSD	STS JOB NO. 34098

BORING LOG 134098.GPJ STS.GDT 1/5/04

OWNER: IDNR/City of Yorkville
PROJECT NAME: Yorkville Dam
ARCHITECT-ENGINEER: Teng & Assoc.
SITE LOCATION: Kendall County, Illinois
LOG OF BORING NUMBER: A-9

(DEPTH FT)	ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE (FT)	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS/FT³	UNCONFINED COMPRESSIVE STRENGTH TONS/FT²	PLASTIC LIMIT %	WATER CONTENT %	LIQUID LIMIT %	STANDARD PENETRATION BLOWS/FT
						SURFACE ELEVATION +578.1 NGVD (Continued)						
		5	SS			Gravelly fine to coarse sand, little silt, trace clay and organics - gray - loose (GM-SM) (Possible fill)						9/6"
11.0				11.0								
11.3		5A	SS			Highly weathered soft shale						50/3"
						End of Boring Borehole backfilled upon completion. Automatic-Diedrich Hammer used for Standard Penetration Tests.						

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WL	BORING STARTED 9/14/04	STS OFFICE Chicago Area - 01	
WL	BORING COMPLETED 9/14/04	ENTERED BY KKB	SHEET NO. 2 OF 2
WL	RIG/FOREMAN Bomb/Lehtinen	APP'D BY DSD	STS JOB NO. 34098

BORING LOG 134098.GPJ STS.GDT 1/5/04

OWNER: IDNR/City of Yorkville
PROJECT NAME: Yorkville Dam
ARCHITECT-ENGINEER: Teng & Assoc.
SITE LOCATION: Kendall County, Illinois
LOG OF BORING NUMBER: A-10

(DEPTH FT)	ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE (FT)	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS/FT³	UNCONFINED COMPRESSIVE STRENGTH TONS/FT²	PLASTIC LIMIT %	WATER CONTENT %	LIQUID LIMIT %	STANDARD PENETRATION BLOWS/FT
						SURFACE ELEVATION +572.5 NGVD						
0.0						Fill: Silty fine to coarse sand, little clay, trace gravel and shale - brown - medium dense (SM)						
1.0		1	SS									18
2.0			PA									
3.0		2	SS									14
4.0			PA									
5.0				5.0								
6.3		3	SS*	6.3		Highly weathered soft shale						50/3"
						End of Boring Borehole backfilled upon completion. Automatic-Diedrich Hammer used for Standard Penetration Tests. SS* = SPT value based on first 6 in.						

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WL	BORING STARTED 9/14/04	STS OFFICE Chicago Area - 01	
WL	BORING COMPLETED 9/14/04	ENTERED BY KKB	SHEET NO. 1 OF 1
WL	RIG/FOREMAN Bomb/Lehtinen	APP'D BY DSD	STS JOB NO. 34098

BORING LOG 134098.GPJ STS.GDT 1/5/04

OWNER: IDNR/City of Yorkville
PROJECT NAME: Yorkville Dam
ARCHITECT-ENGINEER: Teng & Assoc.
SITE LOCATION: Kendall County, Illinois
LOG OF BORING NUMBER: B-1

(DEPTH FT)	ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE (FT)	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS/FT³	UNCONFINED COMPRESSIVE STRENGTH TONS/FT²	PLASTIC LIMIT %	WATER CONTENT %	LIQUID LIMIT %	STANDARD PENETRATION BLOWS/FT
						SURFACE ELEVATION +586.8 NGVD						
0.0				0.5		Water						
1.0		1	SS			Gravelly fine to coarse sand, trace silt and organics - gray - loose to medium dense (GM-SM)						13
2.0			PA									
3.0		2	SS									16
4.0				4.0								30/6"
5.0		2A	SS			Highly weathered soft shale: thinly bedded						
		RB		5.0		Hard shaly limestone						
6.0	RUN 1			5.4		Moderately weathered soft shale Recovery = 100% RQD = 88%						
7.0												
8.0		DB				Qu = 12,180 psi						
9.0						Qu = 10,500 psi						
10.0				10.6								

. . . continued

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WL	BORING STARTED 9/13/04	STS OFFICE Chicago Area - 01	
WL	BORING COMPLETED 9/13/04	ENTERED BY KKB	SHEET NO. 2 OF 2
WL	RIG/FOREMAN Bomb/Lehtinen	APP'D BY DSD	STS JOB NO. 34098

BORING LOG 134098.GPJ STS.GDT 1/5/04

OWNER: IDNR/City of Yorkville
PROJECT NAME: Yorkville Dam
ARCHITECT-ENGINEER: Teng & Assoc.
SITE LOCATION: Kendall County, Illinois
LOG OF BORING NUMBER: B-1

(DEPTH FT)	ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE (FT)	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS/FT³	UNCONFINED COMPRESSIVE STRENGTH TONS/FT²	PLASTIC LIMIT %	WATER CONTENT %	LIQUID LIMIT %	STANDARD PENETRATION BLOWS/FT
						SURFACE ELEVATION +586.8 NGVD (Continued)						
11.0						Hard shaly limestone						
				10.9		Moderately weathered soft shale						
12.0	RUN 1	DB										
				12.8		Hard shaly limestone						
13.0				13.1		Moderately weathered soft shale						
				13.8		Hard shaly limestone						
14.0				14.1		Moderately weathered soft shale						
15.0				15.0		End of Boring Borehole grouted upon completion. Casing used: 5 ft. of 4 in. Automatic-Diedrich Hammer used for Standard Penetration Tests.						

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WL	BORING STARTED 9/13/04	STS OFFICE Chicago Area - 01	
WL	BORING COMPLETED 9/13/04	ENTERED BY KKB	SHEET NO. 2 OF 2
WL	RIG/FOREMAN Bomb/Lehtinen	APP'D BY DSD	STS JOB NO. 34098

BORING LOG 134098.GPJ STS.GDT 1/5/04

OWNER: IDNR/City of Yorkville
PROJECT NAME: Yorkville Dam
ARCHITECT-ENGINEER: Teng & Assoc.
SITE LOCATION: Kendall County, Illinois
LOG OF BORING NUMBER: B-2

(DEPTH FT)	ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE (FT)	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS/FT³	UNCONFINED COMPRESSIVE STRENGTH TONS/FT²	PLASTIC LIMIT %	WATER CONTENT %	LIQUID LIMIT %	STANDARD PENETRATION BLOWS/FT
						SURFACE ELEVATION +590.6 NGVD						
0.0				0.5		Water						
1.0		1	SS			Gravelly fine to coarse sand, trace silt - gray - medium dense (GM-SM)						7
2.0			PA									
3.0		2	SS									50/4"
4.0				3.4		Highly weathered soft shale, thinly bedded						
5.0		RB		5.0								
				5.2		Moderately weathered soft shale						
6.0	RUN 1					Hard shaly limestone Recovery = 57% RQD = 03%						
				6.1		Moderately weathered soft shale						
7.0				7.5		Hard shaly limestone						
8.0		DB		8.0		Moderately weathered soft shale						
9.0				9.6		Hard shaly limestone						
				9.7		Moderately weathered soft shale						
10.0				10.3		Hard shaly limestone						
				10.7		Moderately weathered soft shale						
11.0												

. . . continued

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WL	BORING STARTED 9/10/04	STS OFFICE Chicago Area - 01	
WL	BORING COMPLETED 9/10/04	ENTERED BY KKB	SHEET NO. 1 OF 2
WL	RIG/FOREMAN Bomb/Lehtinen	APP'D BY DSD	STS JOB NO. 34098

BORING LOG 134098.GPJ STS.GDT 1/5/04

OWNER: IDNR/City of Yorkville
PROJECT NAME: Yorkville Dam
ARCHITECT-ENGINEER: Teng & Assoc.
SITE LOCATION: Kendall County, Illinois
LOG OF BORING NUMBER: B-2

(DEPTH FT)	ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE (FT)	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS/FT³	UNCONFINED COMPRESSIVE STRENGTH TONS/FT²	PLASTIC LIMIT %	WATER CONTENT %	LIQUID LIMIT %	STANDARD PENETRATION BLOWS/FT
						SURFACE ELEVATION +590.6 NGVD (Continued)						
						Moderately weathered soft shale						
12.0												
13.0	RUN 1	DB		13.0		Hard shaly limestone						
14.0												
15.0				15.0		End of Boring Borehole grouted upon completion. Casing used: 5 ft. of 4 in. Automatic-Diedrich Hammer used for Standard Penetration Tests.						

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WL	BORING STARTED 9/10/04	STS OFFICE Chicago Area - 01	
WL	BORING COMPLETED 9/10/04	ENTERED BY KKB	SHEET NO. 2 OF 2
WL	RIG/FOREMAN Bomb/Lehtinen	APP'D BY DSD	STS JOB NO. 34098

BORING LOG 134098.GPJ STS.GDT 1/5/04

LOCATION OF BORINGS ON SHEET 6

OWNER: IDNR/City of Yorkville
PROJECT NAME: Yorkville Dam
ARCHITECT-ENGINEER: Teng & Assoc.
LOG OF BORING NUMBER: B-3
SITE LOCATION: Kendall County, Illinois

DESCRIPTION OF MATERIAL

SURFACE ELEVATION +569.6 NGVD

- Water
- 0.5 Gravelly fine to coarse sand, little silt, trace clay, organics and shells - gray - very dense (SM-GM)
- 3.0 Highly weathered shale, thinly bedded
- 5.0 Hard shaly limestone
  Recovery = 90%
  RQD = 65%
- 6.4 Moderately weathered soft shale
- 7.0 Hard shaly limestone
- 7.6 Moderately weathered soft shale
- . . . continued

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

BORING STARTED: 8/3/04 | STS OFFICE: Chicago Area - 01
BOR NG COMPLETED: 8/3/04 | ENTERED BY: RKB | SHEET NO.: 1 OF 2
RIG/FOREMAN: Bomb/Lehtinen | APP'D BY: DSD | STS JOB NO.: 34098

OWNER: IDNR/City of Yorkville
PROJECT NAME: Yorkville Dam
ARCHITECT-ENGINEER: Teng & Assoc.
LOG OF BORING NUMBER: B-3
SITE LOCATION: Kendall County, Illinois

DESCRIPTION OF MATERIAL

SURFACE ELEVATION +569.6 NGVD (Continued)

- Moderately weathered soft shale
- 13.2 Hard shaly limestone
- 15.0 End of Boring
  Borehole grouted upon completion.
  Casing used: 5 ft. of 4 in.
  Automatic-Diedrich Hammer used for Standard Penetration Tests.

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

BORING STARTED: 8/3/04 | STS OFFICE: Chicago Area - 01
BOR NG COMPLETED: 8/3/04 | ENTERED BY: RKB | SHEET NO.: 2 OF 2
RIG/FOREMAN: Bomb/Lehtinen | APP'D BY: DSD | STS JOB NO.: 34098

OWNER: IDNR/City of Yorkville
PROJECT NAME: Yorkville Dam
ARCHITECT-ENGINEER: Teng & Assoc.
LOG OF BORING NUMBER: B-4
SITE LOCATION: Kendall County, Illinois

DESCRIPTION OF MATERIAL

SURFACE ELEVATION +575.6 NGVD

- Water
- 5.0 Organic silt, little sand, trace gravel and shells - brown and black - very soft (ML)
- 8.0 Gravelly fine to coarse sand, little silt, trace clay - gray - loose (GM-SM)
- . . . continued

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

STS JOB NO.: 34098 | SHEET NO.: 1 OF 3

OWNER: IDNR/City of Yorkville
PROJECT NAME: Yorkville Dam
ARCHITECT-ENGINEER: Teng & Assoc.
LOG OF BORING NUMBER: B-4
SITE LOCATION: Kendall County, Illinois

DESCRIPTION OF MATERIAL

SURFACE ELEVATION +575.6 NGVD (Continued)

- Gravelly fine to coarse sand, little silt, trace clay - gray - loose (GM-SM)
- 10.5 Highly weathered soft shale, thinly bedded
- 12.6 Hard shaly limestone
  Recovery = 76%
  RQD = 44%
- 13.2 Moderately weathered soft shale
- 14.4 Hard shaly limestone
- 15.0 Moderately weathered soft shale
  Field Permeability (Packer) Test @ 14 to 23 ft.:

Pressure	Time	Flow Volume
2.5 psi	5 min.	0.5 Gal.
5.0 psi	5 min.	0 Gal
10 psi	5 min.	0 Gal

- 17.7 Hard shaly limestone
- . . . continued

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

STS JOB NO.: 34098 | SHEET NO.: 2 OF 3

OWNER: IDNR/City of Yorkville
PROJECT NAME: Yorkville Dam
ARCHITECT-ENGINEER: Teng & Assoc.
LOG OF BORING NUMBER: B-4
SITE LOCATION: Kendall County, Illinois

DESCRIPTION OF MATERIAL

SURFACE ELEVATION +575.6 NGVD (Continued)

- Hard shaly limestone
- 18.5 Moderately weathered soft shale
- 19.0 Hard shaly limestone
- 19.5 Moderately weathered soft shale
- 20.0 Hard shaly limestone
- 21.5 End of Boring
  Borehole backfilled upon completion.
  Casing used: 15 ft. of 4 in.
  Safety Hammer used for Standard Penetration Tests.
  WOH = Weight of Hammer

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

BORING STARTED: 8/30/04 | STS OFFICE: Chicago Area - 01
BOR NG COMPLETED: 8/30/04 | ENTERED BY: RKB | SHEET NO.: 3 OF 3
RIG/FOREMAN: D-25/Lehtinen | APP'D BY: DSD | STS JOB NO.: 34098

OWNER: IDNR/City of Yorkville
PROJECT NAME: Yorkville Dam
ARCHITECT-ENGINEER: Teng & Assoc.
LOG OF BORING NUMBER: B-5
SITE LOCATION: Kendall County, Illinois

DESCRIPTION OF MATERIAL

SURFACE ELEVATION +575.5 NGVD

- Water
- 5.0 Silty fine to coarse sand, little gravel, trace clay, shells and wood - brown and black - loose (SM)
- 7.0 Gravelly fine to coarse sand, little silt and clay, trace shells - brownish gray - medium dense (SM-GM)
- 8.5 Gravelly fine to coarse sand, little silt, trace clay - brownish gray - medium dense to very dense (SM-GM)
- . . . continued

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

STS JOB NO.: 34098 | SHEET NO.: 1 OF 3

OWNER: IDNR/City of Yorkville
PROJECT NAME: Yorkville Dam
ARCHITECT-ENGINEER: Teng & Assoc.
LOG OF BORING NUMBER: B-5
SITE LOCATION: Kendall County, Illinois

DESCRIPTION OF MATERIAL

SURFACE ELEVATION +575.5 NGVD (Continued)

- Gravelly fine to coarse sand, little silt, trace clay - brownish gray - medium dense to very dense (SM-GM)
- 10.5 Hard shaly limestone
- 14.0 Moderately weathered soft shale
  Recovery = 73%
  RQD = 65%
- 16.5 Hard shaly limestone
- 16.8 Moderately weathered soft shale
- 17.1 Moderately weathered soft shale
  Field Permeability (Packer) Test @ 15 to 25 ft.:

Pressure	Time	Flow Volume
10 psi	5 min.	0 Gal.
20 psi	5 min.	0 Gal

- 18.9 Hard shaly limestone
- 19.2 Moderately weathered soft shale
- 20.0 . . . continued

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

STS JOB NO.: 34098 | SHEET NO.: 2 OF 3

OWNER: IDNR/City of Yorkville
PROJECT NAME: Yorkville Dam
ARCHITECT-ENGINEER: Teng & Assoc.
LOG OF BORING NUMBER: B-5
SITE LOCATION: Kendall County, Illinois

DESCRIPTION OF MATERIAL

SURFACE ELEVATION +575.5 NGVD (Continued)

- Hard shaly limestone
- 21.2 Moderately weathered soft shale
- 23.8 End of Boring
  Borehole backfilled upon completion.
  Casing used: 12 ft. of 4 in.
  Safety Hammer used for Standard Penetration Tests.
  WOH = Weight of Hammer

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

BORING STARTED: 8/24/04 | STS OFFICE: Chicago Area - 01
BOR NG COMPLETED: 8/24/04 | ENTERED BY: KKB | SHEET NO.: 3 OF 3
RIG/FOREMAN: Joy 12-Barge/Lehtinen | APP'D BY: DSD | STS JOB NO.: 34098

LOCATION OF BORINGS ON SHEET 6

LOG OF BORING NUMBER B-6

OWNER: IDNR/City of Yorkville
PROJECT NAME: Yorkville Dam
ARCHITECT-ENGINEER: Teng & Assoc.
SITE LOCATION: Kendall County, Illinois

DESCRIPTION OF MATERIAL

SURFACE ELEVATION +575.5 NGVD

Water

0.0

Gravelly fine to coarse sand, little silt, trace clay and organics - brownish gray - medium dense (SM)
With coarse gravel at 5 to 7 ft.

8.0

Gravelly fine to coarse sand, little silt, trace clay - gray - medium dense (SM-GM)
With occasional thin organic seams noted.

10.0

. . . continued

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

STS JOB NO. 34098 SHEET NO. 1 OF 3

LOG OF BORING NUMBER B-6

OWNER: IDNR/City of Yorkville
PROJECT NAME: Yorkville Dam
ARCHITECT-ENGINEER: Teng & Assoc.
SITE LOCATION: Kendall County, Illinois

DESCRIPTION OF MATERIAL (Continued)

SURFACE ELEVATION +575.5 NGVD (Continued)

Gravelly fine to coarse sand, little silt, trace clay - gray - medium dense (SM-GM)
With occasional thin organic seams noted.

RB

11.0

12.0

13.0

Hard shaly limestone

13.7

Moderately weathered soft shale
Recovery = 74%
RQD = 64%

14.0

14.9

Hard shaly limestone

15.0

15.2

Moderately weathered soft shale

16.0

16.0

Hard shaly limestone

16.4

Moderately weathered soft shale

17.0

17.8

Hard shaly limestone

18.0

18.3

Moderately weathered soft shale

19.0

18.9

Hard shaly limestone

20.0

. . . continued

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

STS JOB NO. 34098 SHEET NO. 2 OF 3

LOG OF BORING NUMBER B-6

OWNER: IDNR/City of Yorkville
PROJECT NAME: Yorkville Dam
ARCHITECT-ENGINEER: Teng & Assoc.
SITE LOCATION: Kendall County, Illinois

DESCRIPTION OF MATERIAL (Continued)

SURFACE ELEVATION +575.5 NGVD (Continued)

Moderately weathered soft shale
Field Permeability (Packer) Test @ 17 to 25 ft.:

Pressure	Time	Flow Volume
2.5 psi	5 min.	0.2 Gal.
5.0 psi	5 min.	0 Gal.
10 psi	5 min.	0.3 Gal

23.5

End of Boring
Borehole backfilled upon completion.
Casing used: 15 ft. of 4 in.
Safety Hammer used for Standard Penetration Tests.

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WL	BORING STARTED 8/26/04	STS OFFICE Chicago Area - 01	
WL	BORING COMPLETED 8/26/04	ENTERED BY KKB	SHEET NO. 3 OF 3
WL	RIG/FOREMAN Joy 12-Barge/Lehtinen	APP'D BY DSD	STS JOB NO. 34098

LOG OF BORING NUMBER B-7

OWNER: IDNR/City of Yorkville
PROJECT NAME: Yorkville Dam
ARCHITECT-ENGINEER: Teng & Assoc.
SITE LOCATION: Kendall County, Illinois

DESCRIPTION OF MATERIAL

SURFACE ELEVATION +575.9 NGVD

Water

1.0

Silty fine to coarse sand, little gravel, trace clay, organics and shells - brown - loose (SM)

8.5

Clayey fine to coarse sand, little gravel - gray - medium dense to dense (SM-GM)

9.3

Highly weathered soft shale, thinly bedded

. . . continued

* Calibrated Penetrometer

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

STS JOB NO. 34098 SHEET NO. 1 OF 3

LOG OF BORING NUMBER B-7

OWNER: IDNR/City of Yorkville
PROJECT NAME: Yorkville Dam
ARCHITECT-ENGINEER: Teng & Assoc.
SITE LOCATION: Kendall County, Illinois

DESCRIPTION OF MATERIAL (Continued)

SURFACE ELEVATION +575.9 NGVD (Continued)

Highly weathered soft shale, thinly bedded

10.0

10.8

Hard shaly limestone

11.0

11.6

Moderately weathered soft shale
Recovery = 77%
RQD = 51%

12.0

13.0

Field Permeability (Packer) Test @ 12 to 18.5 ft.:

Pressure	Time	Flow Volume
2.5 psi	5 min.	0.5 Gal.
5.0 psi	5 min.	0 Gal.
10 psi	5 min.	0.2 Gal.

14.0

15.0

16.0

17.0

17.8

Hard shaly limestone
Qu = 12,525 psi

18.0

18.4

Moderately weathered soft shale

19.0

. . . continued

* Calibrated Penetrometer

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

STS JOB NO. 34098 SHEET NO. 2 OF 3

LOG OF BORING NUMBER B-7

OWNER: IDNR/City of Yorkville
PROJECT NAME: Yorkville Dam
ARCHITECT-ENGINEER: Teng & Assoc.
SITE LOCATION: Kendall County, Illinois

DESCRIPTION OF MATERIAL (Continued)

SURFACE ELEVATION +575.5 NGVD (Continued)

Moderately weathered soft shale

20.0

21.0

21.5

End of Boring
Borehole backfilled upon completion.
Casing used: 12 ft. of 4 in.
Safety Hammer used for Standard Penetration Tests.
SS* = SPT value based on first 6 in. or less.

* Calibrated Penetrometer

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WL	BORING STARTED 8/27/04	STS OFFICE Chicago Area - 01	
WL	BORING COMPLETED 8/27/04	ENTERED BY KKB	SHEET NO. 3 OF 3
WL	RIG/FOREMAN Joy 12-Barge/Lehtinen	APP'D BY DSD	STS JOB NO. 34098

LOG OF BORING NUMBER B-11

OWNER: IDNR/City of Yorkville
PROJECT NAME: Yorkville Dam
ARCHITECT-ENGINEER: Teng & Assoc.
SITE LOCATION: Kendall County, Illinois

DESCRIPTION OF MATERIAL

SURFACE ELEVATION +589.6 NGVD

Water

1.0

Gravelly fine to coarse sand, trace silt and organics - gray - dense (GM-SM)

7.5

Highly weathered shale

9.0

Moderately weathered soft shale
Recovery = 84%
RQD = 41%

. . . continued

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

STS JOB NO. 34098 SHEET NO. 1 OF 2

LOG OF BORING NUMBER B-11

OWNER: IDNR/City of Yorkville
PROJECT NAME: Yorkville Dam
ARCHITECT-ENGINEER: Teng & Assoc.
SITE LOCATION: Kendall County, Illinois

DESCRIPTION OF MATERIAL (Continued)

SURFACE ELEVATION +589.6 NGVD (Continued)

Moderately weathered soft shale
Recovery = 64%
RQD = 41%

11.9

Hard shaly limestone

12.6

Moderately weathered soft shale

13.5

Hard shaly limestone

14.8

Moderately weathered soft shale
Qu = 11,055 psi

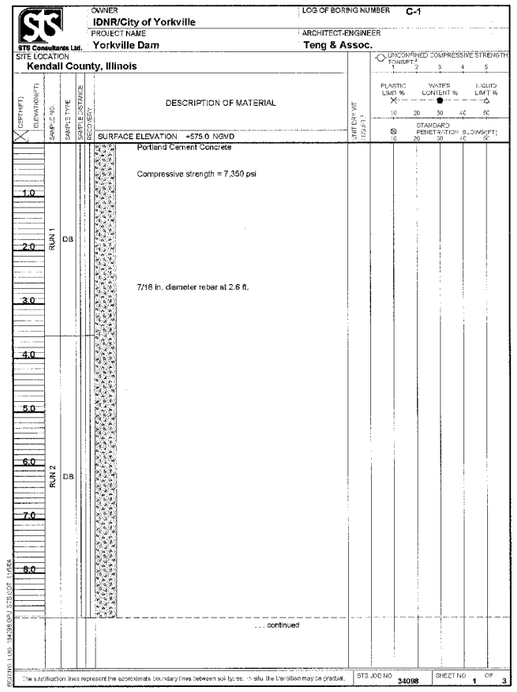
19.0

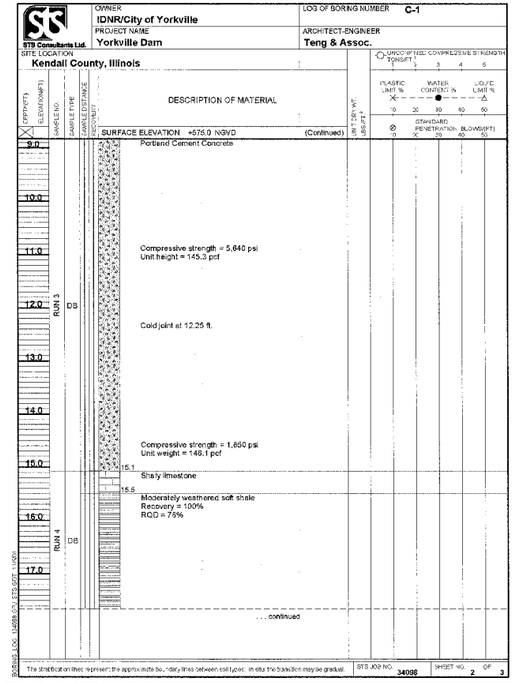
End of Boring
Borehole grouted upon completion.
Casing used: 5 ft. of 4 in.
Automatic-Diedrich Hammer used for Standard Penetration Tests.
SS* = SPT value based on first 6 in.

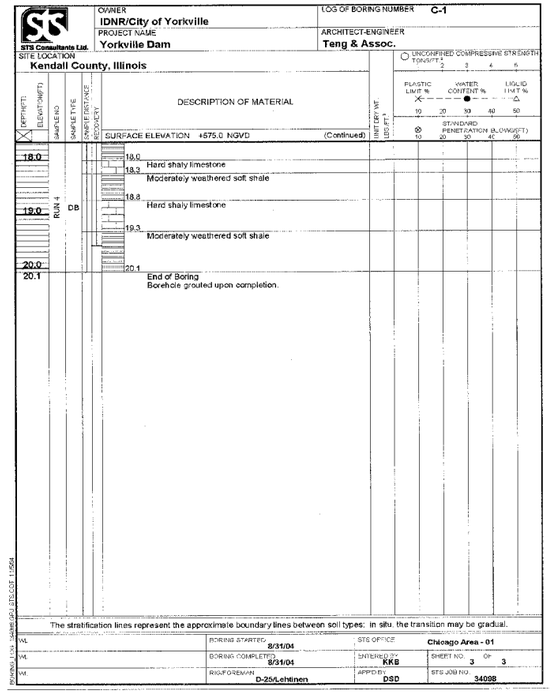
The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

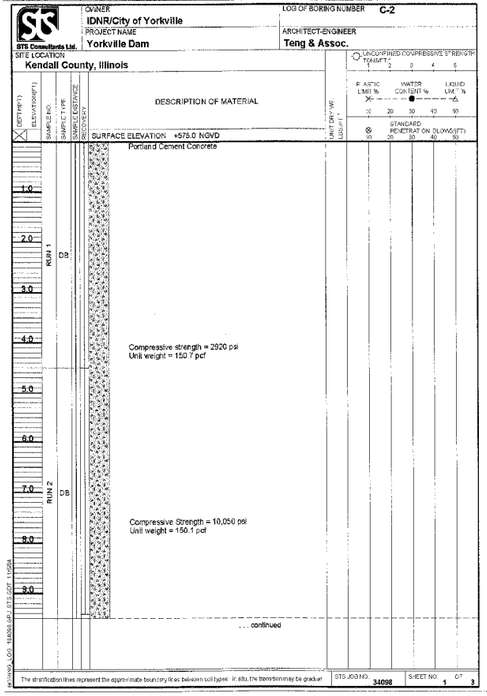
WL	BORING STARTED 9/10/04	STS OFFICE Chicago Area - 01	
WL	BORING COMPLETED 9/10/04	ENTERED BY KKB	SHEET NO. 2 OF 2
WL	RIG/FOREMAN Bomb/Lehtinen	APP'D BY DSD	STS JOB NO. 34098

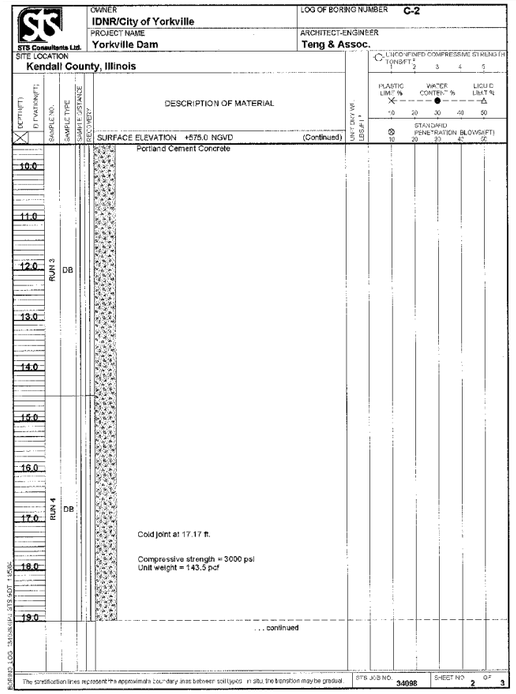
LOCATION OF BORINGS ON SHEET 6

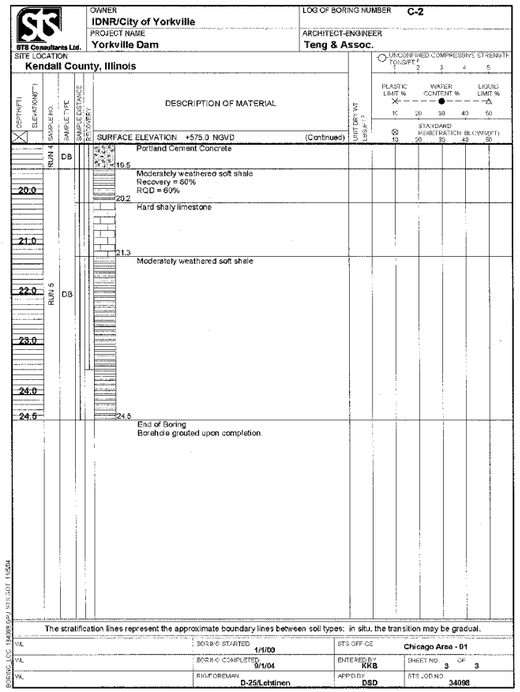


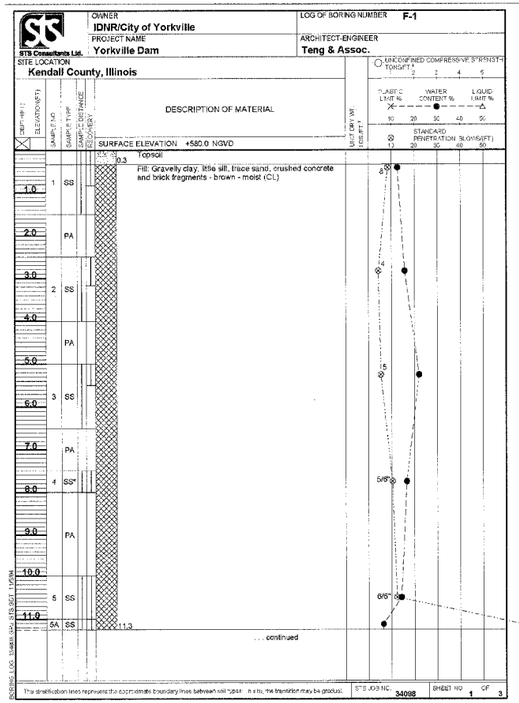


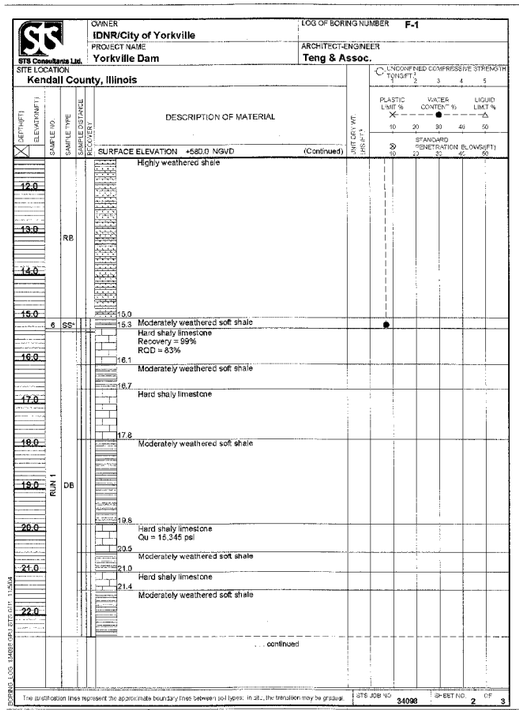




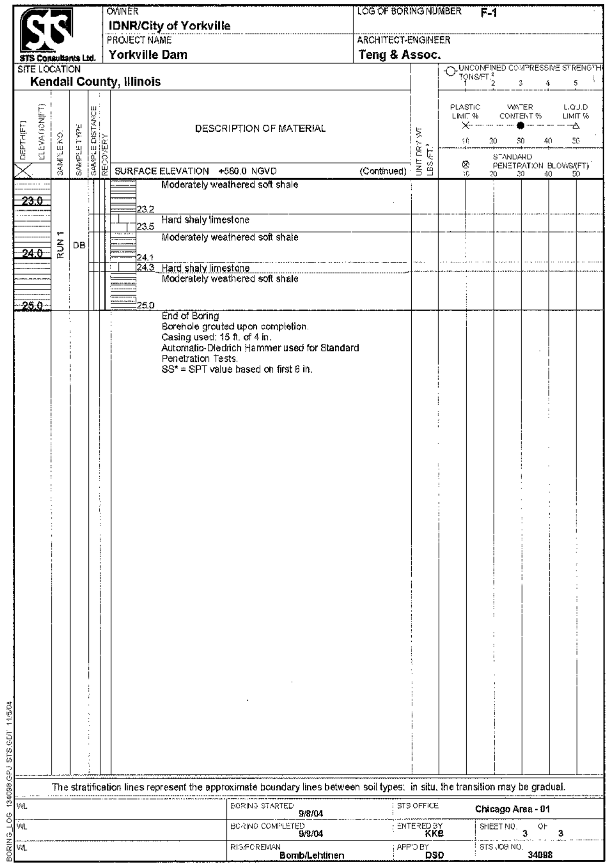


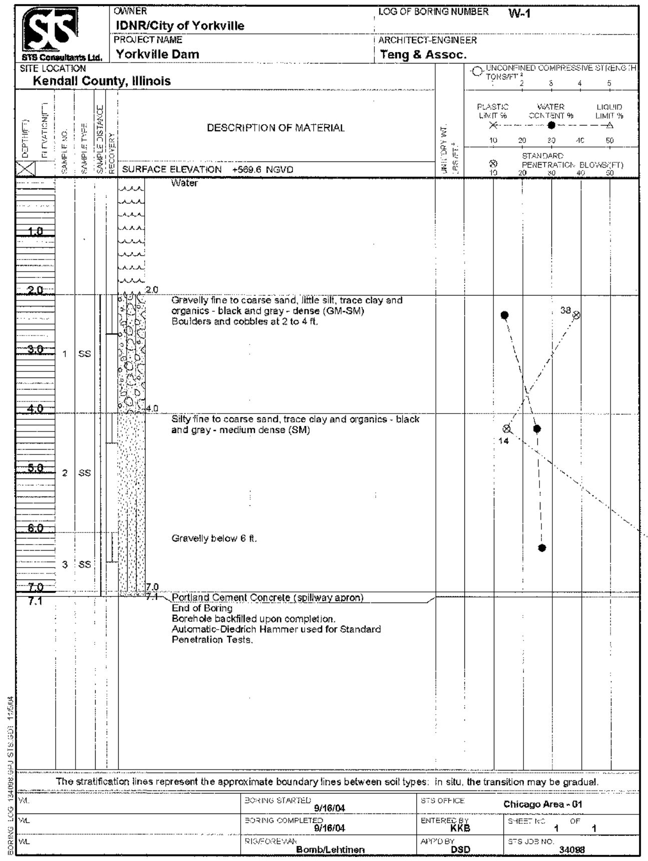


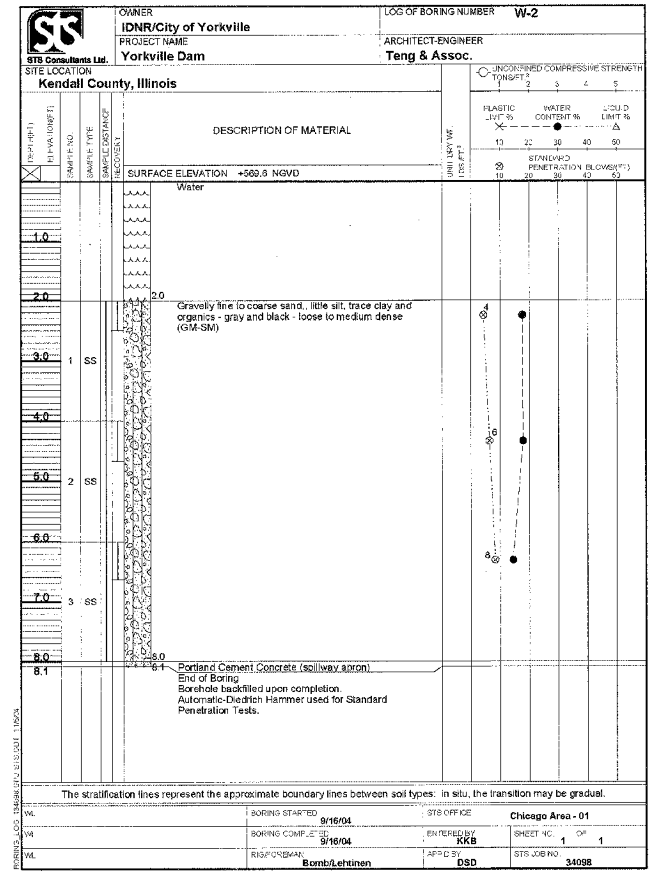


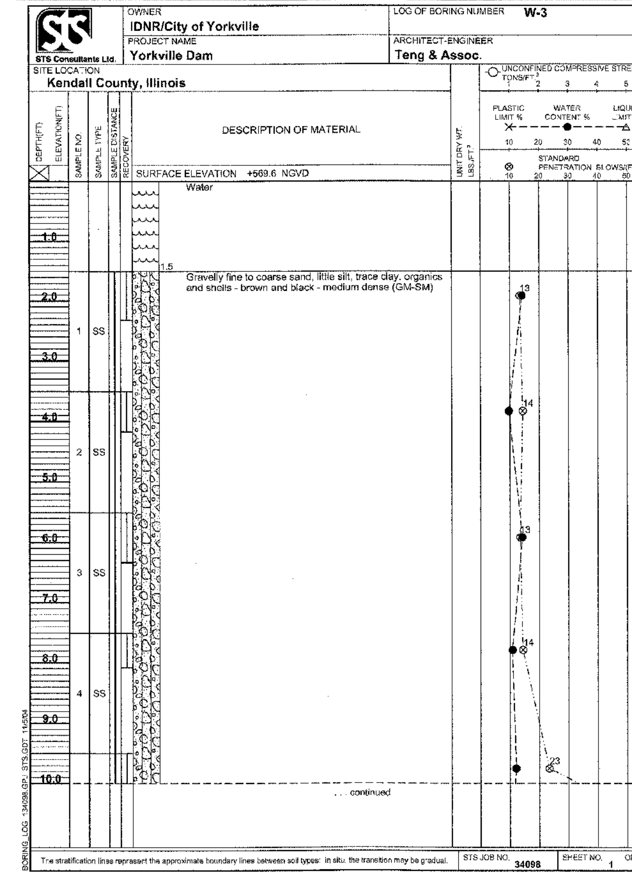


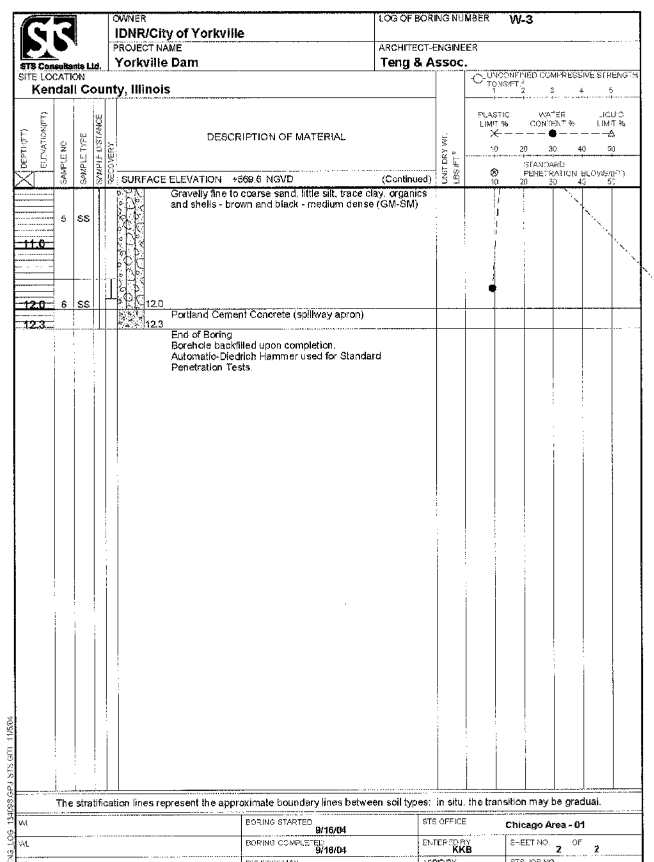
LOCATION OF BORINGS ON SHEET 6


STS Consultants Ltd.
OWNER IDNR/City of Yorkville
LOG OF BORING NUMBER F-1
PROJECT NAME Yorkville Dam
ARCHITECT-ENGINEER Teng & Assoc.
SITE LOCATION Kendall County, Illinois
DESCRIPTION OF MATERIAL
SURFACE ELEVATION +550.0 NGVD (Continued)
Moderately weathered soft shale
Hard shaly limestone
Moderately weathered soft shale
Hard shaly limestone
Moderately weathered soft shale
End of Boring
Borehole grouted upon completion.
Casing used: 15 ft. of 4 in.
Automatic-Diedrich Hammer used for Standard Penetration Tests.
SS* = SPT value based on first 6 in.
The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.
BORING STARTED 9/8/04
BORING COMPLETED 9/8/04
RIG/FOREMAN Bomb/Lehtinen
STS OFFICE Chicago Area - 01
ENTERED BY KKB
APP'D BY DSD
SHEET NO. 3 OF 3
STS JOB NO. 34098


OWNER IDNR/City of Yorkville
LOG OF BORING NUMBER W-1
PROJECT NAME Yorkville Dam
ARCHITECT-ENGINEER Teng & Assoc.
SITE LOCATION Kendall County, Illinois
SURFACE ELEVATION +569.6 NGVD
Water
Gravelly fine to coarse sand, little silt, trace clay and organics - black and gray - dense (GM-SM)
Boulders and cobbles at 2 to 4 ft.
Silty fine to coarse sand, trace clay and organics - black and gray - medium dense (SM)
Gravelly below 6 ft.
Portland Cement Concrete (spillway apron)
End of Boring
Borehole backfilled upon completion.
Automatic-Diedrich Hammer used for Standard Penetration Tests.
BORING STARTED 9/16/04
BORING COMPLETED 9/16/04
RIG/FOREMAN Bomb/Lehtinen
STS OFFICE Chicago Area - 01
ENTERED BY KKB
APP'D BY DSD
SHEET NO. 1 OF 1
STS JOB NO. 34098


OWNER IDNR/City of Yorkville
LOG OF BORING NUMBER W-2
PROJECT NAME Yorkville Dam
ARCHITECT-ENGINEER Teng & Assoc.
SITE LOCATION Kendall County, Illinois
SURFACE ELEVATION +569.6 NGVD
Water
Gravelly fine to coarse sand, little silt, trace clay and organics - gray and black - loose to medium dense (GM-SM)
Portland Cement Concrete (spillway apron)
End of Boring
Borehole backfilled upon completion.
Automatic-Diedrich Hammer used for Standard Penetration Tests.
BORING STARTED 9/16/04
BORING COMPLETED 9/16/04
RIG/FOREMAN Bomb/Lehtinen
STS OFFICE Chicago Area - 01
ENTERED BY KKB
APP'D BY DSD
SHEET NO. 1 OF 1
STS JOB NO. 34098


OWNER IDNR/City of Yorkville
LOG OF BORING NUMBER W-3
PROJECT NAME Yorkville Dam
ARCHITECT-ENGINEER Teng & Assoc.
SITE LOCATION Kendall County, Illinois
SURFACE ELEVATION +569.6 NGVD
Water
Gravelly fine to coarse sand, little silt, trace clay, organics and shells - brown and black - medium dense (GM-SM)
continued
STS JOB NO. 34098
SHEET NO. 1 OF 2


OWNER IDNR/City of Yorkville
LOG OF BORING NUMBER W-3
PROJECT NAME Yorkville Dam
ARCHITECT-ENGINEER Teng & Assoc.
SITE LOCATION Kendall County, Illinois
SURFACE ELEVATION +569.6 NGVD (Continued)
Gravelly fine to coarse sand, little silt, trace clay, organics and shells - brown and black - medium dense (GM-SM)
Portland Cement Concrete (spillway apron)
End of Boring
Borehole backfilled upon completion.
Automatic-Diedrich Hammer used for Standard Penetration Tests.
BORING STARTED 9/16/04
BORING COMPLETED 9/16/04
RIG/FOREMAN Bomb/Lehtinen
STS OFFICE Chicago Area - 01
ENTERED BY KKB
APP'D BY DSD
SHEET NO. 2 OF 2
STS JOB NO. 34098

STS CONSULTANTS

STS Consultants, Ltd.
111 W Washington St., Suite 1950
Chicago, Illinois 60602

Voice 312-214-4420
Fax 312-214-4980

Memorandum

Date October 18, 2004

To Mr Robert Murdock, P E

Cc

From D Diehm P E. and W Walton P.E , S.E

RE Particle Size Analysis of the Test Pit Bulk Samples for the Yorkville/Glen Palmer Dam Rehabilitation, Fox River at Yorkville, Kendall County, Illinois - STS Project No 1-34098

In response to your request, STS Consultants, Ltd (STS) has revised the particle size distribution results provided in the draft report (issued October 6, 2004) to reflect the estimated contribution of the +9-inch diameter materials that were excluded from the tested bulk samples. For each of the three locations (TP-1, TP-2, and TP-3), a theoretical gradation is provided based on visual observation of the nominal maximum particle size. The as-tested gradation is shown for comparison The revised distribution curves are provided in the attachments to this letter report

A composite of the three theoretical gradations with the interpreted limits of the particle distributions is also provided Due to the limited number of tests, and the potential for variability between sampling locations, it is recommended that the design be based on the interpreted distribution envelope rather than the location specific gradations

We appreciate this opportunity to be of service to you If there are any questions with regard to the information contained in this letter report, or if we may be of further assistance, please do not hesitate to contact us.

Respectfully,

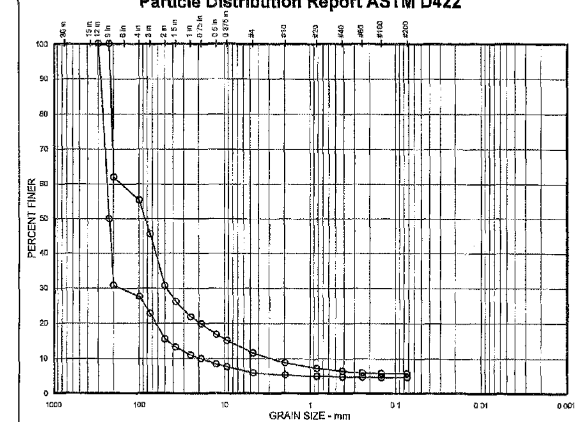
STS CONSULTANTS, LTD

STS Consultants

Yorkville Dam Rehabilitation
Fox River at Yorkville
Kendall County, IL
STS Project No 1-34098

ORIGINATED BY DDD 10/18/2004
CHECKED BY WHW 10/18/2004

Particle Distribution Report ASTM D422



% +3"	% GRAVEL	% SAND	% SILT	% CLAY

SIEVE SIZE	PERCENT FINER*	PERCENT FINER**	US SIEVE SIZE
304 8 mm		100 0	12 in
228 6 mm	100 0	49.7	9 in
203 2 mm	61 6	30 9	8 in
101.6 mm	55 1	27 3	4 in
76 2 mm	45 3	22 5	3 in
50 8 mm	30 5	15 1	2 in
38 1 mm	25 8	12 8	1 5 in
25 4 mm	21 5	10 7	1 in
19 05 mm	19 5	9 7	0 75 in
12 7 mm	16 4	8 1	0 5 in
9 525 mm	14.7	7 3	0 375 in
4 75 mm	11 3	5 6	#4
2 mm	8 5	5 0	#10
0 85 mm	6.9	4 7	#20
0 425 mm	6 1	4 5	#40
0 25 mm	5 7	4 4	#60
0 15 mm	5 5	4 4	#100
0 075 mm	5 5	4 4	#200

Soil Description
COBBLES SOME COARSE TO FINE GRAVEL TRACE COARSE TO MEDIUM SAND AND FINES – DARK GRAY

Atterberg Limits
PL= LL= PI=

Coefficients
D_{85}= D_{60}= D_{50}=
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification
USCS= GM AASHTO=

Remarks

* Gradation of Bulk Sample
** Theoretical Gradation Based on Visual Observation of Nominal Maximum Particle Size

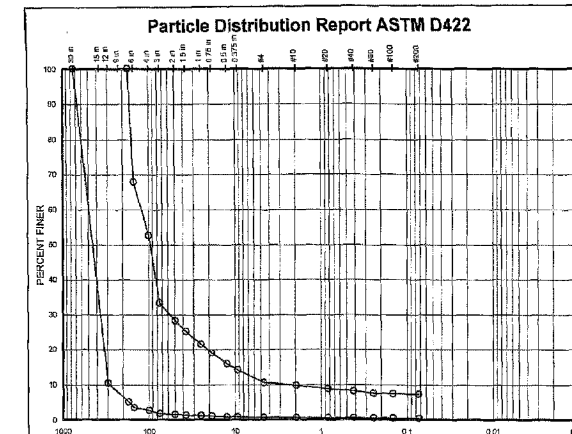
Sample No: TP-1 — Source of Sample — Date. 9/28/04
Location: — Elev /Depth 0 0-2 0 FT

STS Consultants

Yorkville Dam Rehabilitation
Fox River at Yorkville
Kendall County, IL
STS Project No. 1-34098

ORIGINATED BY DDD 10/18/2004
CHECKED BY WHW 10/18/2004

Particle Distribution Report ASTM D422



% +3"	% GRAVEL	% SAND	% SILT	% CLAY

SIEVE SIZE	PERCENT FINER*	PERCENT FINER**	US SIEVE SIZE
762 mm		100 0	30 in
304 8 mm		10 2	12 in
177 8 mm	100 0	4.9	7 in
152 4 mm	67 5	3 3	6 in
101 6 mm	52 5	2 6	4 in
76 2 mm	33 0	1 6	3 in
50 8 mm	28 0	1 4	2 in
38 1 mm	25 0	1 2	1 5 in
25 4 mm	21 2	1 0	1 in
19 05 mm	18 8	0 9	0 75 in
12 7 mm	15 7	0 8	0 5 in
9.525 mm	14 0	0 7	0 375 in
4 75 mm	10.4	0 6	#4
2 mm	9 5	0.5	#10
0 85 mm	8 6	0 4	#20
0 425 mm	7 9	0 4	#40
0 25 mm	7 3	0 4	#60
0 15 mm	7 2	0 4	#100
0 075 mm	7 2	0 4	#200

Soil Description
COBBLES SOME COARSE TO FINE GRAVEL TRACE COARSE TO MEDIUM SAND AND FINES -- DARK GRAY

Atterberg Limits
PL= LL= PI=

Coefficients
D_{85}= D_{60}= D_{50}=
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification
USCS= GW AASHTO=

Remarks

* Gradation of Bulk Sample
** Theoretical Gradation Based on Visual Observation of Nominal Maximum Particle Size

Sample No.: TP-2 — Source of Sample — Date 9/28/04
Location — Elev /Depth: 0.0-2 5 FT

LOCATION OF BORINGS ON SHEET 6

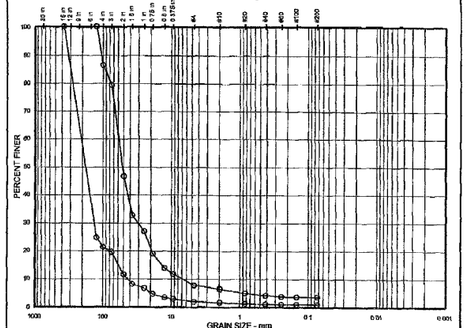
FR-422

S:\DOCUMENT\02348801\CIVIL\DGN\BOL00OV.DGN
DRAGASMZ 11:43:30 1-13-2005
Designed By MD Checked By RUM
Drawn By MD Checked By RUM

Yorkville Dam Rehabilitation
Fox River at Yorkville
Kendall County, IL
STS Project No 1-34098

ORIGINATED BY: DSD 10/18/2004
CHECKED BY: WAW 10/18/2004

Particle Distribution Report ASTM D422



% +3"	% GRAVEL	% SAND	% SILT	% CLAY

SIEVE SIZE	PERCENT FINER*	US SIEVE SIZE
381 mm	100 0	15 in
127 mm	100 0	5 in
101 6 mm	86 2	4 in
76 2 mm	79 1	3 in
50 8 mm	46 5	2 in
38 1 mm	32 3	1 5 in
25 4 mm	26 7	1 in
19 05 mm	18 7	0 75 in
12 7 mm	13 6	0 5 in
9 525 mm	11 5	0 375 in
4 75 mm	7 6	#4
2 mm	6 3	#10
0 85 mm	4 9	#20
0 425 mm	4 1	#40
0 25 mm	3 7	#60
0 15 mm	3 6	#100
0 075 mm	3 5	#200

Soil Description
COBBLES SOME COARSE TO FINE GRAVEL TRACE COARSE TO MEDIUM SAND AND FINES – DARK GRAY

Atterberg Limits
PL= LL= PI=

Coefficients
D_{85}= D_{60}= D_{50}=
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification
USCS= GM AASHTO=

Remarks

* Gradation of Bulk Sample
** Theoretical Gradation Based on Visual Observation of Nominal Maximum Particle Size

Sample No. TP-3 Source of Sample: Date: 9/28/04
Location Elev./Depth 0.0-3.5 FT

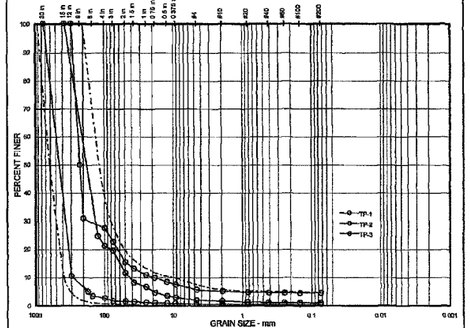
STS Consultants Ltd.
750 Corporate Woods Parkway
Vernon Hills, IL 60061

Client: IDNR-OFFICE OF WATER RESOURCES
Project: YORKVILLE DAM REHABILITATION
Project No: 34098-A Plate

Yorkville Dam Rehabilitation
Fox River at Yorkville
Kendall County, IL
STS Project No 1-34098

ORIGINATED BY: DSD 10/18/2004
CHECKED BY: WAW 10/18/2004

Particle Distribution Report ASTM D422



% +3"	% GRAVEL	% SAND	% SILT	% CLAY
68-72	1-21	1-2	<1-5	

SIEVE SIZE	PERCENT FINER Maximum	PERCENT FINER Minimum	US SIEVE SIZE
914.4 mm	100 0		36 in
609.6 mm	90 0		24 in
381 mm	10 0		15 in
304 8 mm	6 0		12 in
203 2 mm	2 0	100 0	8 in
101 6 mm	1 0	40 0	4 in
50 8 mm		20 0	2 in
38.25 mm	0 2	12 0	0 75 in
9 525 mm		10 0	0 375 in
2 mm		6 0	#10
0 075 mm	0 2	5 0	#200

Soil Description
COBBLES SOME COARSE TO FINE GRAVEL TRACE COARSE TO MEDIUM SAND AND FINES – DARK GRAY

Atterberg Limits
PL= LL= PI=

Coefficients
D_{85}= 600-90 D_{60}= 600-150 D_{50}= 610-120
D_{30}= 60-15 D_{15}= 6.0-4.5 D_{10}= 400-9.5
C_c= 1.6-15 8 C_c= 1.0-4.5

Classification
USCS= GM AASHTO=

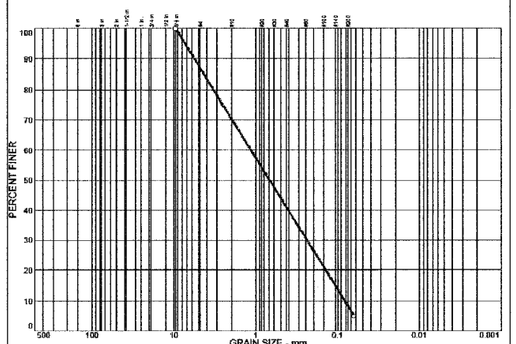
Remarks

Sample No. TP-1, TP-2, TP-3 Source of Sample Date: 9/28/04
Location: Elev./Depth: 0.0-3.5 FT

STS Consultants Ltd.
750 Corporate Woods Parkway
Vernon Hills, IL 60061

Client: IDNR-OFFICE OF WATER RESOURCES
Project: YORKVILLE DAM REHABILITATION
Project No: 34098-A Plate

IEPA MATERIAL ANALYSIS FOR DREDGE & FILL ACTIVITIES



% + 3"	% GRAVEL	% SAND	% SILT	% CLAY
0.0	13.2	78.7	8.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
375 in.	100.0		
#230	4.8		

Soil Description
F-C SAND SOME CLAY SOME SILT TRACE FINE GRAVEL - DK. GRAY

Atterberg Limits
PL= LL= PI=

Coefficients
D_{85}= 4.32 D_{60}= 1.16 D_{50}= 0.683
D_{30}= 0.238 D_{15}= 0.108 D_{10}= 0.0829
C_u= 13.95 C_c= 0.59

Classification
USCS= SM AASHTO=

Remarks

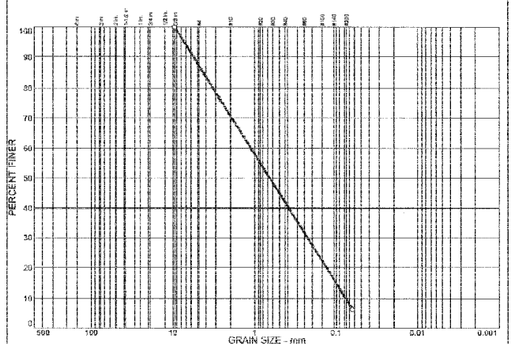
* (no specification provided)

Sample No.: 2 Source of Sample: BORING S-1 Date: 9/21/05
Location: Elev./Depth: 0.0-8.0'

STS Consultants Ltd.
750 Corporate Woods Parkway
Vernon Hills, IL 60061

Client: IDNR-OFFICE OF WATER RESOURCES
Project: YORKVILLE DAM REHABILITATION
Project No: 34098-A Plate

IEPA MATERIAL ANALYSIS FOR DREDGE & FILL ACTIVITIES



% + 3"	% GRAVEL	% SAND	% SILT	% CLAY
0.0	15.0	77.5	9.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
375 in.	100.0		
#230	6.2		

Soil Description
F-C SAND LITTLE FINE GRAVEL TRACE SILT TRACE CLAY - GRAY

Atterberg Limits
PL= LL= PI=

Coefficients
D_{85}= 4.47 D_{60}= 1.12 D_{50}= 0.656
D_{30}= 0.225 D_{15}= 0.101 D_{10}= 0.0772
C_u= 14.51 C_c= 0.59

Classification
USCS= SP AASHTO=

Remarks

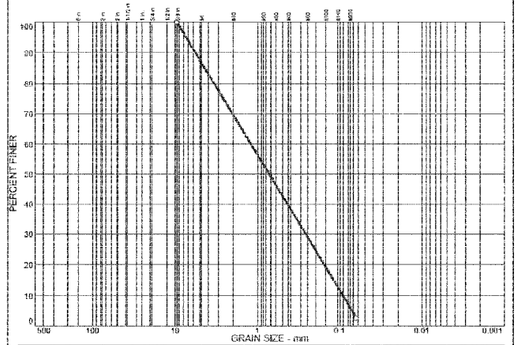
* (no specification provided)

Sample No.: 3 Source of Sample: BORING S-2 Date: 9/21/05
Location: Elev./Depth: 0.0-8.0'

STS Consultants Ltd.
750 Corporate Woods Parkway
Vernon Hills, IL 60061

Client: IDNR-OFFICE OF WATER RESOURCES
Project: YORKVILLE DAM REHABILITATION
Project No: 34098-A Plate

IEPA MATERIAL ANALYSIS FOR DREDGE & FILL ACTIVITIES



% + 3"	% GRAVEL	% SAND	% SILT	% CLAY
0.0	13.5	80.6	5.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
375 in.	100.0		
#230	2.5		

Soil Description
F-C SAND LITTLE FINE GRAVEL TRACE CLAY - GRAY

Atterberg Limits
PL= LL= PI=

Coefficients
D_{85}= 4.40 D_{60}= 1.22 D_{50}= 0.726
D_{30}= 0.259 D_{15}= 0.120 D_{10}= 0.0927
C_u= 13.11 C_c= 0.60

Classification
USCS= SP AASHTO=

Remarks

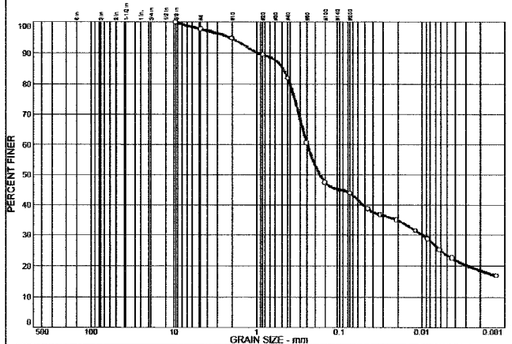
* (no specification provided)

Sample No.: 2 Source of Sample: BORING S-3 Date: 9/21/05
Location: Elev./Depth: 0.0-14.0'

STS Consultants Ltd.
750 Corporate Woods Parkway
Vernon Hills, IL 60061

Client: IDNR-OFFICE OF WATER RESOURCES
Project: YORKVILLE DAM REHABILITATION
Project No: 34098-A Plate

PARTICLE SIZE DISTRIBUTION (ASTM D 422)



% + 3"	% GRAVEL	% SAND	% SILT	% CLAY
0.0	2.3	53.8	20.5	23.4

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
375 in.	100.0		
#4	97.7		
#10	94.7		
#20	89.6		
#40	81.8		
#60	60.5		
#100	47.5		
#200	43.9		

Soil Description
F-C SAND SOME CLAY SOME SILT TRACE FINE GRAVEL - DK. GRAY

Atterberg Limits
PL= LL= PI=

Coefficients
D_{85}= 0.484 D_{60}= 0.247 D_{50}= 0.175
D_{30}= 0.0099 D_{15}= D_{10}=
C_u= C_c=

Classification
USCS= SM AASHTO=

Remarks

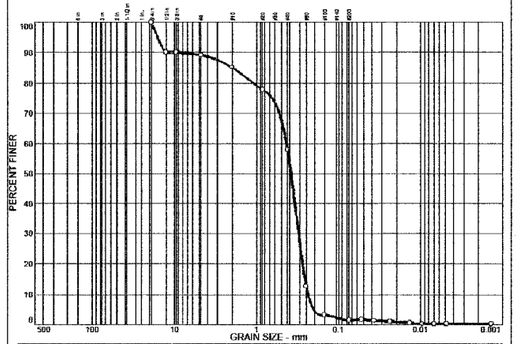
* (no specification provided)

Sample No.: 1 Source of Sample: BORING S-1 Date: 9/13/05
Location: Elev./Depth: 0.0-8.0'

STS Consultants Ltd.
750 Corporate Woods Parkway
Vernon Hills, IL 60061

Client: IDNR-OFFICE OF WATER RESOURCES
Project: YORKVILLE DAM REHABILITATION
Project No: 34098-A Plate

PARTICLE SIZE DISTRIBUTION (ASTM D 422)



% + 3"	% GRAVEL	% SAND	% SILT	% CLAY
0.0	10.7	87.8	1.3	0.2

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.75 in.	100.0		
.50 in.	90.2		
.375 in.	90.2		
#4	89.3		
#10	85.2		
#20	77.9		
#40	57.9		
#60	12.6		
#100	3.2		
#200	1.5		

Soil Description
F-C SAND LITTLE FINE GRAVEL TRACE SILT TRACE CLAY - GRAY

Atterberg Limits
PL= LL= PI=

Coefficients
D_{85}= 1.95 D_{60}= 0.438 D_{50}= 0.380
D_{30}= 0.311 D_{15}= 0.200 D_{10}= 0.236
C_u= 1.84 C_c= 0.93

Classification
USCS= SP AASHTO=

Remarks

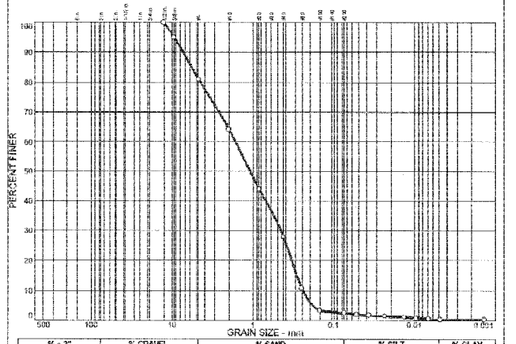
* (no specification provided)

Sample No.: 2 Source of Sample: BORING S-2 Date: 9/13/05
Location: Elev./Depth: 0.0-8.0'

STS Consultants Ltd.
750 Corporate Woods Parkway
Vernon Hills, IL 60061

Client: IDNR-OFFICE OF WATER RESOURCES
Project: YORKVILLE DAM REHABILITATION
Project No: 34098-A Plate

PARTICLE SIZE DISTRIBUTION (ASTM D 422)



% + 3"	% GRAVEL	% SAND	% SILT	% CLAY
0.0	19.6	78.6	2.2	0.3

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.5 in.	100.0		
.375 in.	95.1		
#4	81.0		
#10	64.3		
#20	44.1		
#40	27.9		
#60	10.7		
#100	3.3		
#200	2.4		

Soil Description
F-C SAND LITTLE FINE GRAVEL TRACE CLAY - GRAY

Atterberg Limits
PL= LL= PI=

Coefficients
D_{85}= 3.77 D_{60}= 1.06 D_{50}= 1.10
D_{30}= 0.495 D_{15}= 0.288 D_{10}= 0.243
C_u= 6.84 C_c= 0.82

Classification
USCS= SP AASHTO=

Remarks

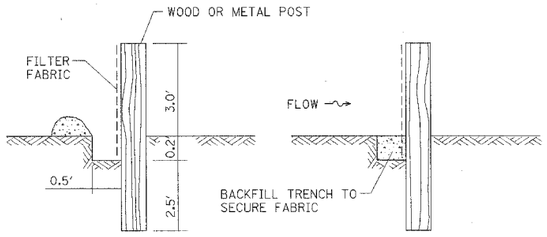
* (no specification provided)

Sample No.: 1 Source of Sample: BORING S-3 Date: 9/13/05
Location: Elev./Depth: 0.0-14.0'

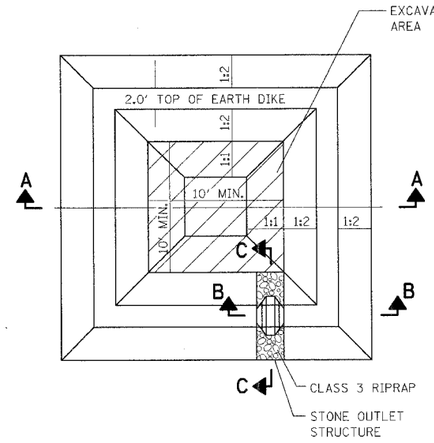
STS Consultants Ltd.
750 Corporate Woods Parkway
Vernon Hills, IL 60061

Client: IDNR-OFFICE OF WATER RESOURCES
Project: YORKVILLE DAM REHABILITATION
Project No: 34098-A Plate

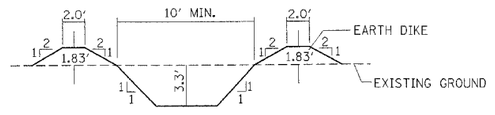
LOCATION OF BORINGS ON SHEET 6



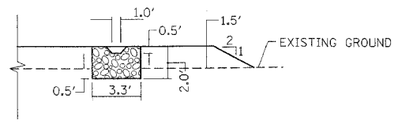
SILT FILTER FENCE AS PERIMETER EROSION BARRIER



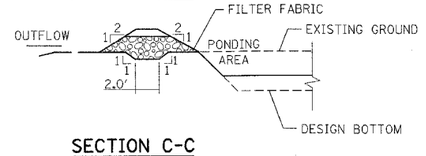
PLAN VIEW



SECTION A-A



SECTION B-B



SECTION C-C

NOTES:

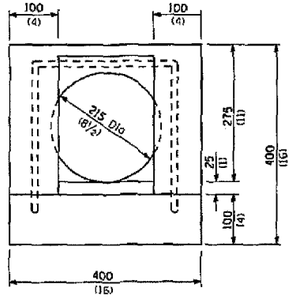
1. ANY DEWATERING OF THE CONSTRUCTION AREA SHALL BE FILTERED THROUGH A DEWATERING BASIN PRIOR TO ENTERING THE WATERWAY.
2. PUMPING INTO THESE BASINS SHALL CEASE WHEN THE EFFLUENT FROM THE BASIN BECOMES SEDIMENT LADEN. THE BASIN MAY BE BYPASSED IF THE WATER BEING PUMPED IS NON SEDIMENT LADEN AND THERE IS A STABILIZED OUTFALL. SURFACE FLOWS SHALL BE DIVERTED AROUND THE DEVICE.
3. THE DEWATERING BASIN SHALL BE EXCAVATED TO A MINIMUM DEPTH OF 3FT WITH A FLAT BOTTOM.
4. ONCE THE DEWATERING BASIN BECOMES FILLED TO ½ OF THE EXCAVATED DEPTH, ACCUMULATED SEDIMENT SHALL BE REMOVED.
5. THE OUTFALL FROM THE BASIN(S) SHALL HAVE A STABILIZED CONVEYANCE TO RECEIVING WATERS.
6. THE MINIMUM VOLUME OF THE CONSTRUCTION DEWATERING DISCHARGE BASIN (DEAD VOLUME) SHALL BE CALCULATED AS: DEWATERING PUMP CAPACITY IN GAL/MINUTE X 16 = REQUIRED VOLUME IN CUBIC FEET
7. DEWATERING BASINS SHALL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE CONTRACT LUMP SUM BID PRICE FOR "TEMPORARY COFFERDAM SYSTEM".

DEWATERING BASINS

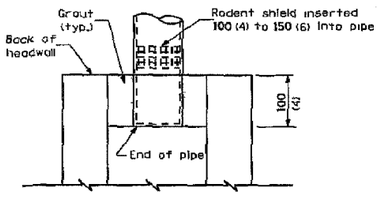
STANDARD SYMBOL

DB

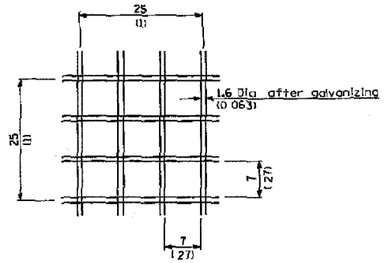
S:\DOCUMENT\02348801\CIVIL\DGN\STD00Y9.DGN
DRAGASMZ
1-13-2005
11:43:22
Designed By MD Checked By RUM
Drawn By MD Checked By RUM



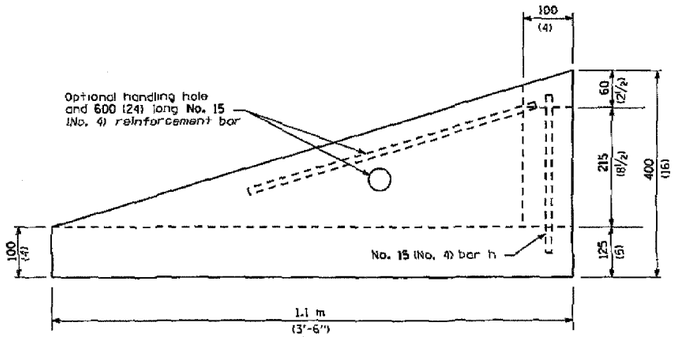
FRONT VIEW



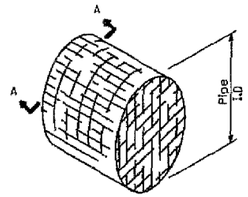
RODENT SHIELD PLACEMENT



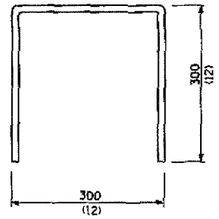
SECTION A-A



SIDE VIEW

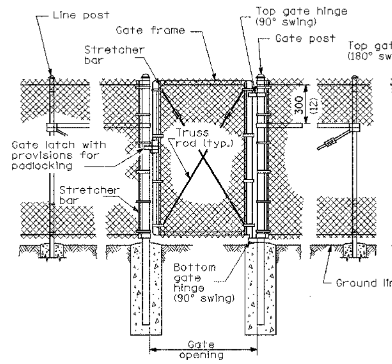


DETAIL OF RODENT SHIELD

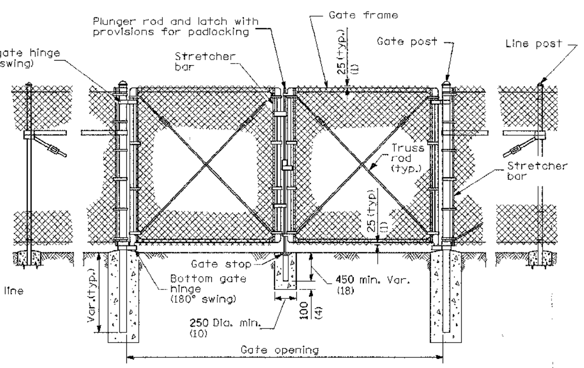


BAR h

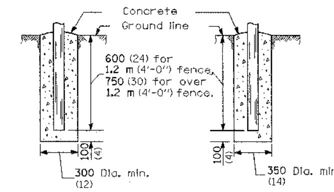
CONCRETE HEADWALL FOR PIPE DRAIN



PEDESTRIAN GATE ARRANGEMENT

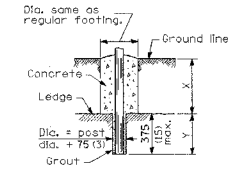


VEHICLE GATE ARRANGEMENT



FOOTING FOR LINE POST

FOOTING FOR GATE & TERMINAL POST

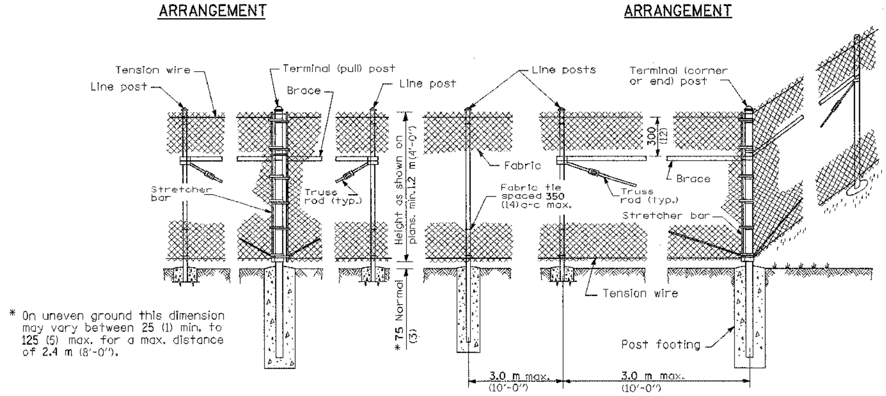


FOOTING FOR POST IN ROCK LEDGE

GENERAL NOTES

Pull posts shall be placed at locations determined by the Engineer. They shall be placed at 200 m (660') intervals between posts to which the ends of the fabric are clamped or midway between such posts when the distance is less than 400 m (1320') and greater than 200 m (660').

X + Y shall not exceed 600 mm (24"), 750 mm (30") or 900 mm (36"), as applicable. When X is 0 (0) to 225 mm (9"), 380 mm (15"), or 525 mm (21"), Y= 375 mm (15"), and the post shall be shortened as required. When X exceeds 225 mm (9"), 380 mm (15"), or 525 mm (21"), Y shall be decreased correspondingly.

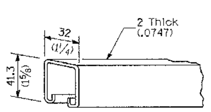


* On uneven ground this dimension may vary between 25 (1) min. to 125 (5) max. for a max. distance of 2.4 m (8'-0").

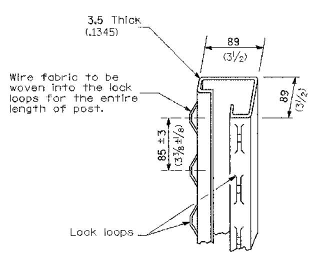
PULL POST ARRANGEMENT

LINE POST ARRANGEMENT

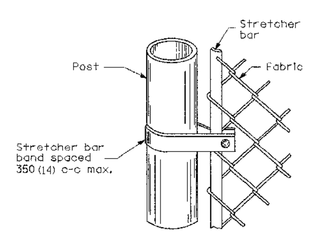
CORNER OR END POST ARRANGEMENT



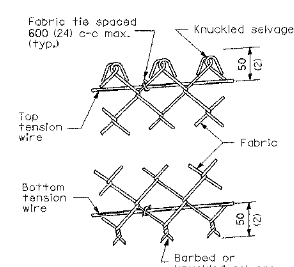
ROLL FORMED SECTION OF BRACE



ROLL FORMED SECTION OF TERMINAL & GATE POST



METHOD OF FASTENING STRETCHER BAR TO POST



METHOD OF TYING FABRIC TO TENSION WIRES

LINE POST	
Section	kg/m (lbs./ft.)
Pipe Type A 48.3 O.D. (1.90)	4.05 (2.72)
Pipe Type B 48.3 O.D. (1.90)	3.39 (2.28)
Pipe Type C 48.3 O.D. (1.90)	3.36 (2.26)
H 47.6x41.3 (1.875x1.625)	4.05 (2.72)
⊏	2.38 (1.60)
I	3.42 (2.30)

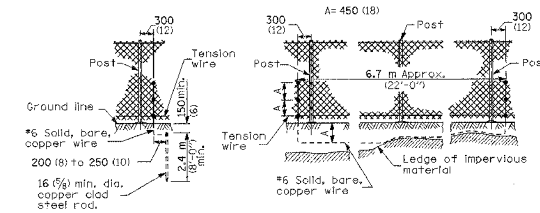
TERMINAL POST	
Section	kg/m (lbs./ft.)
Pipe Type A 60.3 O.D. (2.375)	5.43 (3.65)
Pipe Type B 60.3 O.D. (2.375)	4.63 (3.11)
Pipe Type C 60.3 O.D. (2.375)	4.60 (3.09)
Roll Formed 89.0x89.0 (3½x3½)	See detail
Sq. Tubing 63.5x63.5 (2½x2½)	6.43 (4.32)

HORIZONTAL BRACES	
Section	kg/m (lbs./ft.)
Pipe Type A 42.2 O.D. (1.66)	3.38 (2.27)
Pipe Type B 42.2 O.D. (1.66)	2.72 (1.83)
Pipe Type C 42.2 O.D. (1.66)	2.71 (1.82)
H 33.3x38.1 (1.31x1.5)	3.35 (2.25)
Roll Formed 41.3x31.8 (1⅝x1¼)	See detail

GRATE FRAMES	
Section	kg/m (lbs./ft.)
Pipe Type A 42.2 O.D. (1.66)	3.38 (2.27)
Pipe Type B 42.2 O.D. (1.66)	2.72 (1.83)
Pipe Type C 42.2 O.D. (1.66)	2.71 (1.82)

GATE POSTS *							
Gate Opening* m (ft.)		Pipe Type A		Sq. Tubing		Pipe Type B	
Single	Double	Size (O.D.)	kg/m (lbs./ft.)	Size	kg/m (lbs./ft.)	Size (O.D.)	kg/m (lbs./ft.)
Up to 1.2 (4)	Up to 2.5 (8)	60.3 (2.375)	5.43 (3.65)	63.5 (2½)	6.43 (4.32)	60.3 (2.375)	4.63 (3.11)
Over 1.2 to 2.5 (4) (8)	Over 2.5 to 5.0 (8) (16)	73.0 (2.875)	8.62 (5.79)	76.2 (3)	8.60 (5.78)	73.0 (2.875)	6.91 (4.64)
Over 2.5 to 3.6 (8) (12)	Over 5.0 to 7.4 (16) (24)	89.0 (3.5)	11.28 (7.58)	76.2 (3)	13.10 (8.80)	89.0 (3.5)	8.49 (5.707)

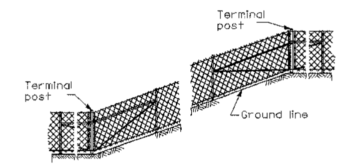
* The 89.0 x 89.0 (3½ x 3½) roll formed section as detailed may be used as gate posts for single gate up to 1.8 m (6') and double gate up to 3.6 m (12').



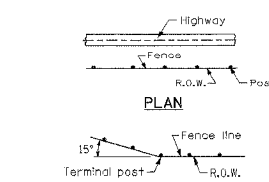
STANDARD GROUND

COUNTERPOISE GROUND (ALTERNATE)

PROTECTIVE ELECTRICAL GROUNDS



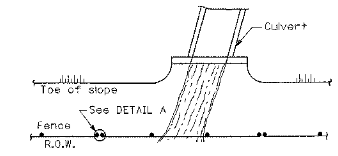
INSTALLATION ON SLOPES



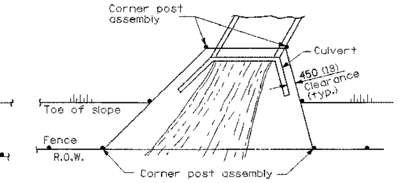
When fence line has a change in direction of 15° or more, a terminal post shall be placed as shown above.

Where angle is less than 15° and existing conditions require a terminal post, they shall be placed as directed by the Engineer.

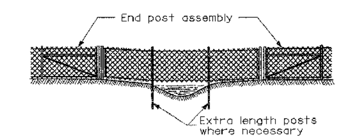
INSTALLATION AT CORNERS



PLAN AT STREAM CROSSING

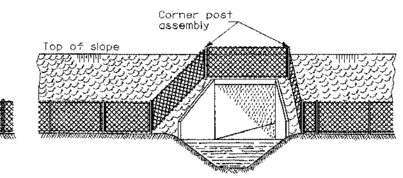


PLAN AT HEADWALL



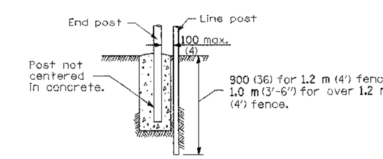
The chain link fabric shall be replaced by barbed wire strands at 300 (12) maximum centers between the double posts shown on DETAIL A when shown on the plans.

ELEVATION INSTALLATION OVER STREAM



When the width of the culvert makes it necessary to anchor a post to the top of the culvert, a cast iron shoe or other device approved by the Engineer shall be used.

ELEVATION INSTALLATION AROUND HEADWALL



DETAIL A

CHAIN LINK FENCE

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

FR-422

S:\DOCUMENT\02348801\CIVIL\DGN\STD00025.DGN
DRAGASMZ 11:43:19
1-13-2005

Designed By MD Checked By RUM
Drawn By MD Checked By RUM

TENG
TENG & ASSOCIATES, INC.