

INLAND TRUCK PARTS COMPANY STORM DRAINAGE PLANS

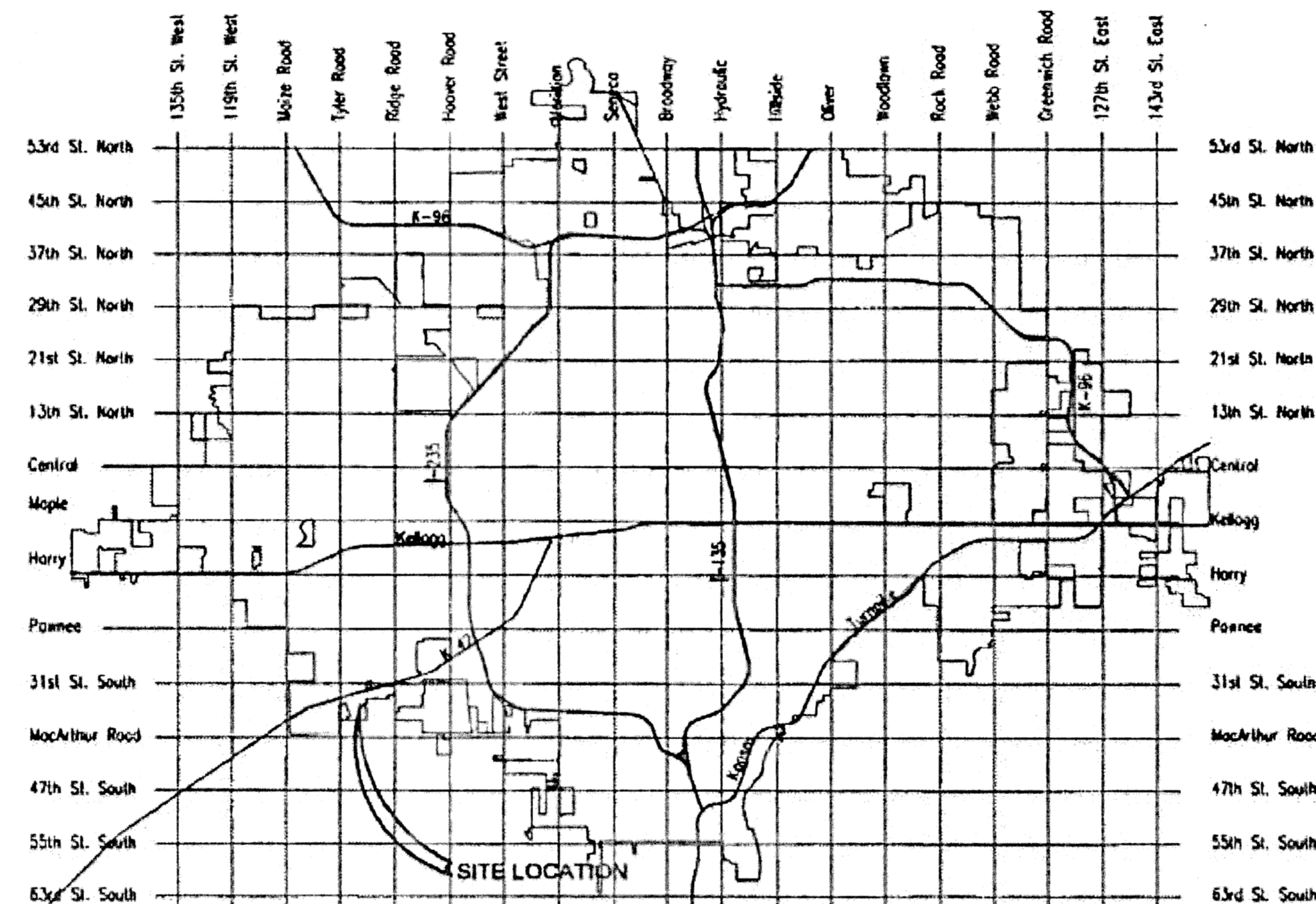
TO SERVE

LOT 3, BLOCK A, MID-CONTINENT INDUSTRIAL PARK II
(3610 S. NORMAN ST.)

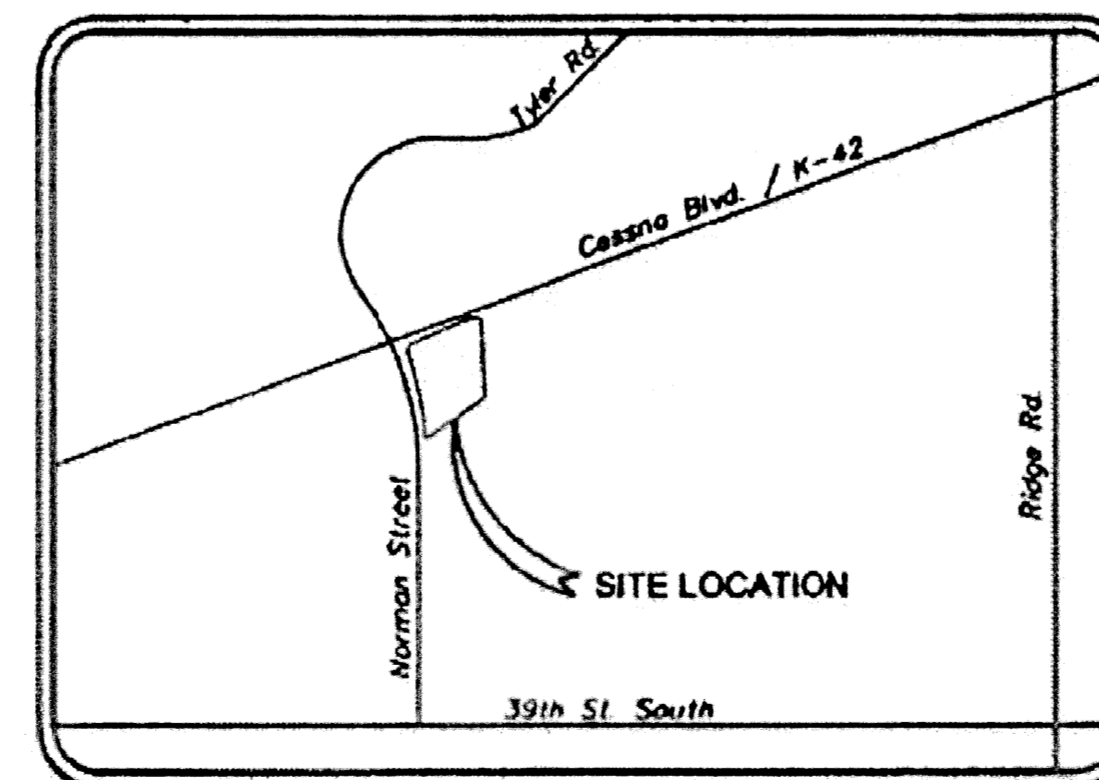
PRIVATE PROJECT NO. 96 PPD (607861)

WICHITA, SEDGWICK COUNTY, KANSAS

GARY JANZEN, P.E., INTERIM CITY ENGINEER



LOCATION MAP



VICINITY MAP

INDEX OF SHEETS

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C-508	RIPRAP AND SWALE INFORMATION TABLES

APPROVED AS NOTED
BY CITY ENGINEER OF WICHITA

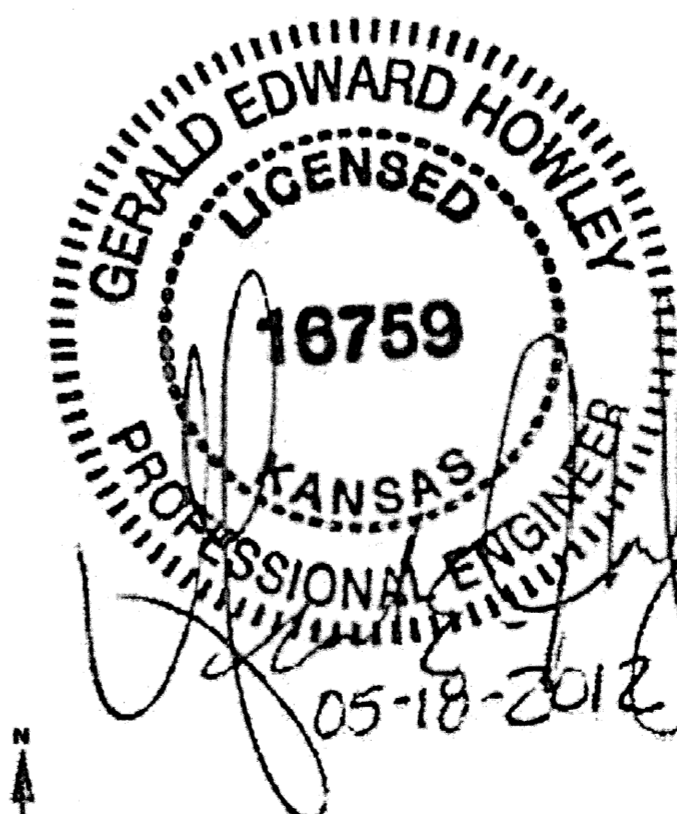
Engineering *J. Janzen 5-23-12*
Stormwater *Gary Janzen 5-23-12*

NOTE TO CONTRACTORS

Inspection and testing for this project are to be provided by a Licensed Consulting Engineering Firm under contract with the Owner/Developer. Said inspection to be in accordance with the City of Wichita standard construction engineering practices and certified by a Licensed Professional Engineer. No work shall be performed in dedicated easements or public right-of-way by the Contractor without such inspection, nor shall any work be commenced without written authorization by the City Engineer.

NOTE:

STORMWATER FACILITIES—OPERATIONS AND MAINTENANCE PLAN, DATED APRIL 10, 2012 IS TO BE USED FOR THIS PROJECT.



OWNER/DEVELOPER:

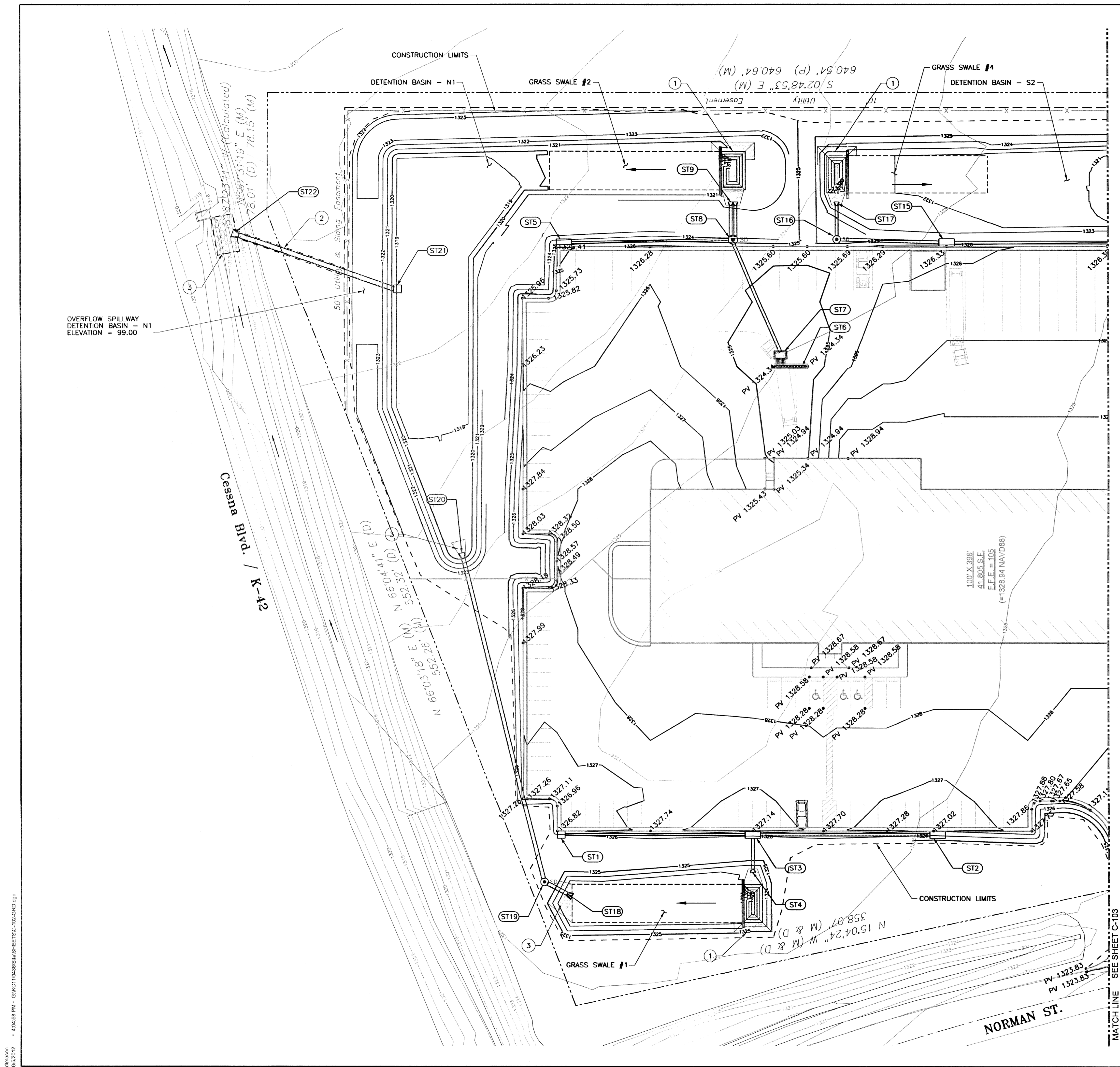
ITP INLAND TRUCK
PARTS COMPANY
An Employee Owned Company

ENGINEER:

TranSystems

2400 PERSHING ROAD
SUITE 400
KANSAS CITY, MO 64108
PHONE: 816-329-8800
FAX: 816-329-8602

As-Built Plans
Contractor: Dondlinger & Sons Construction Co., Inc.
Inspector: Eric Strecker, Schwab-Eaton, P.A.
PDF by: ELS 12/18/2012



STORM DRAINAGE DATA:

- (ST1) 5' X 5' CURB INLET
TOP ELEV. = 1326.82
FLOWLINE OUT = 1324.64
INSTALL 116.50 L.F. OF 12" RCP @ 0.51% SLOPE
- (ST2) 10' X 5' CURB INLET
TOP ELEV. = 1327.02
FLOWLINE OUT = 1324.34
INSTALL 109.50 L.F. OF 18" RCP @ 0.72% SLOPE
- (ST3) 10' X 5' CURB INLET
TOP ELEV. = 1327.14
FLOWLINE OUT = 1323.35
INSTALL 20.00 L.F. OF 18" RCP @ 1.80% SLOPE
- (ST4) INSTALL 18" FLARED END SECTION FL=1322.88
- (ST5) 10' X 5' CURB INLET
TOP ELEV. = 1325.41
FLOWLINE OUT = 1322.75
INSTALL 101.45 L.F. OF 12" RCP @ 1.40% SLOPE
- (ST6) INSTALL 19.68 L.F. OF TRENCH DRAIN
TOP ELEV. = 1324.34
FLOWLINE OUT = 1322.76
INSTALL (4) 5.00 L.F. OF 10" PVC @ 20.00% SLOPE
- (ST7) 7' X 4' REINFORCED CONCRETE MANHOLE
SEE CITY DETAIL SHEET C-510
TOP ELEV. = 1324.39
FLOWLINE OUT = 1321.06
INSTALL 77.24 L.F. OF 18" RCP @ 0.30% SLOPE
- (ST8) 6' DIA. PRECAST CONCRETE MANHOLE
SEE CITY DETAIL SHEET C-509
TOP ELEV. = 1325.44
FLOWLINE OUT = 1320.78
INSTALL (2) 20.00 L.F. OF 18" RCP @ 0.30% SLOPE
- (ST9) INSTALL (2) 18" FLARED END SECTION FL=1320.72
- (ST10) 10' X 5' CURB INLET
TOP ELEV. = 1326.33
FLOWLINE OUT = 1323.01
INSTALL 64.13 L.F. OF 18" RCP @ 0.50% SLOPE
- (ST11) 5' DIA. PRECAST CONCRETE MANHOLE
SEE CITY DETAIL SHEET C-509
TOP ELEV. = 1325.34
FLOWLINE OUT = 1322.59
INSTALL 20.00 L.F. OF 18" RCP @ 0.50% SLOPE
- (ST12) INSTALL 18" FLARED END SECTION FL=1322.52
- (ST13) INSTALL 24" FLARED END SECTION
FLOWLINE OUT = 1321.94
INSTALL 14.14 L.F. OF 24" RCP @ 0.50% SLOPE
- (ST14) 5' DIA. PRECAST CONCRETE MANHOLE
SEE CITY DETAIL SHEET C-509
TOP ELEV. = 1321.57
FLOWLINE OUT = 1317.84
INSTALL 215.03 L.F. OF 24" RCP @ 0.60% SLOPE
- (ST15) INSTALL 24" FLARED END SECTION FL=1320.31
- (ST16) OUTLET STRUCTURE
SEE DETAIL SHEET C-504
TOP ELEV. = 1322.44
FLOWLINE OUT = 1317.84
INSTALL 105.68 L.F. OF 30" RCP @ 0.20% SLOPE
- (ST17) INSTALL 30" FLARED END SECTION FL=1317.50

PLAN KEY NOTES

- 1 INSTALL SEDIMENT FOREBAY WITH CONCRETE LEVEL SPREADER, SEE DETAILS AND ELEVATIONS SHEET C-506.
- 2 INSTALL PRIMARY DETENTION BASIN OUTLET, SEE DETAIL SHEET C-504.
- 3 PROVIDE RIP RAP FOR ENERGY DISSIPATION AND EROSION CONTROL. SEE SHEET C-506.

LEGEND

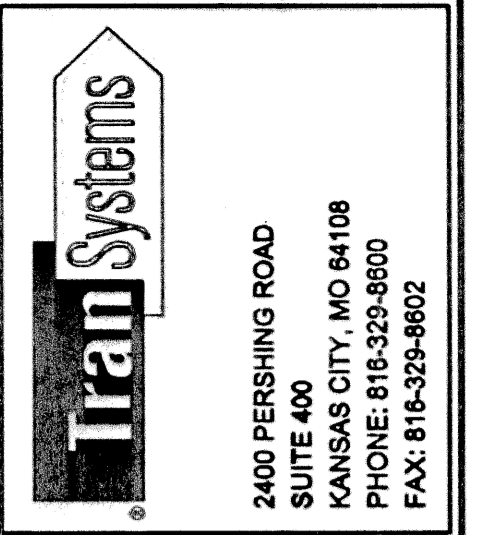
- 103.08 TOP OF CURB ELEVATION
- PV 99.89 PAVEMENT ELEVATION

TRENCH DRAIN ELEVATIONS

NOTE: TRENCH DRAIN DIMENSIONS BASED ON ACO POWER DRAIN 330K WITH A 12" WIDE CHANNEL. CHANNEL INVERTS ARE SET AT A 0.6% SLOPE, WITH EACH 1M (3.28FT) LONG SECTION HAVING AN INCREASING DEPTH TO FLOW TO THE 0.5M (1.64FT) OUTLET SECTIONS. EACH OUTLET SECTION HAS A KNOCK-OUT THAT CAN PERMIT ONE (1) 10" PVC OUTLET PIPE.

TRENCH LAYOUT CONSISTS OF 4 SECTIONS, PLUS FOUR OUTLET SECTIONS.
(CATALOG PARTS: SK3-27 TO SK3-30, PLUS 4-SK3-0303)

TOTAL TRENCH L=19.68'
INVERT @ UPPER END= TOP GRATE-18.03'(1.50')
INVERT @ LOWER END= TOP GRATE-18.98'(1.58')
FLOW OUT 10" PVC'S = 1322.76



CONSULTANTS:

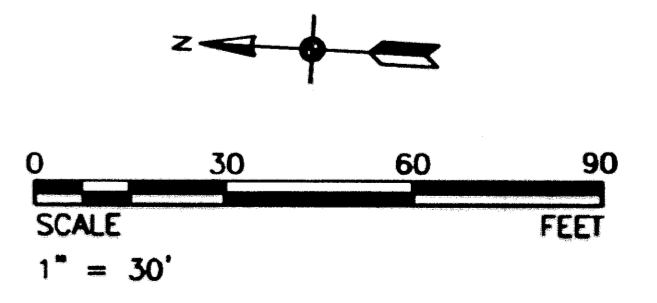
INLAND TRUCK PARTS
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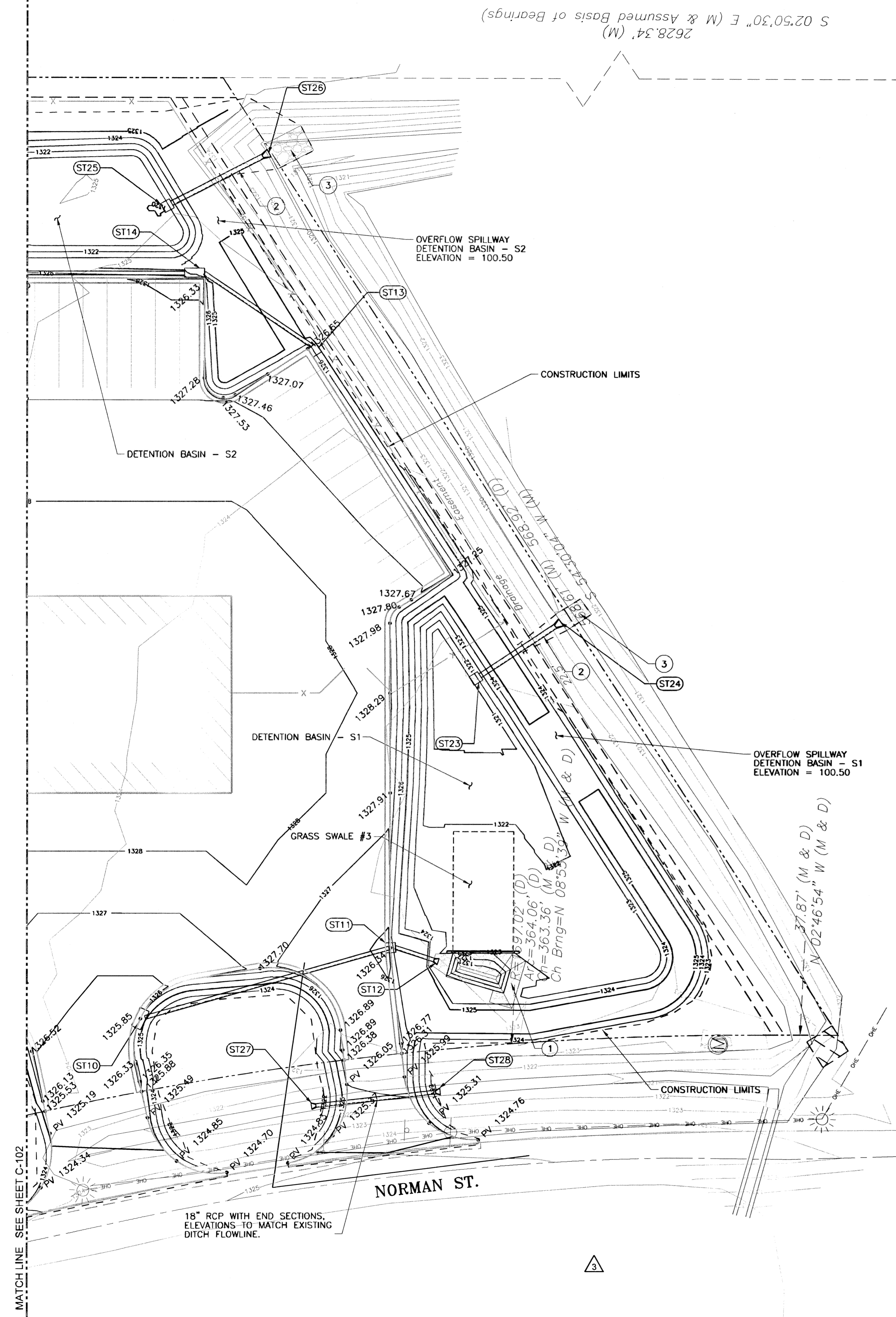
REVISIONS:	DATE	DESCRIPTION	MARK	DATE
02/24/2012	02/24/2012	PERMIT SUBMITTAL		
03/14/2012	03/14/2012	ADDED EXISTING CONTOURS		
03/22/2012	03/22/2012	ADDENDUM #2		

PROJ NO: P101110436
SCALE: 1" = 30'
DATE: 6/5/2012
DESIGNED BY: DLM
DRAWN BY: DLM
CHECKED BY: GEH

SHEET TITLE:
SITE GRADING AND STORM DRAINAGE PLAN

SHEET NO.
C-102





STORM DRAINAGE DATA:

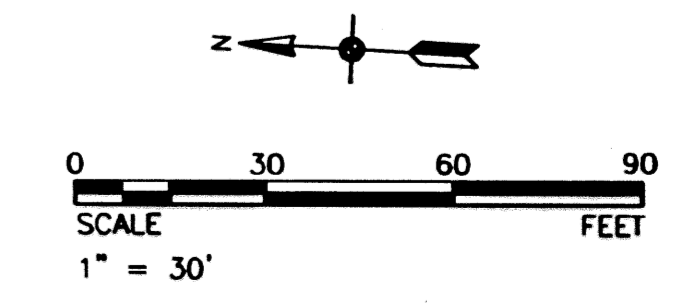
- ST10 10' x 5' CURB INLET
TOP ELEV. = 1325.94
FLOWLINE OUT = 1323.79
INSTALL 126.98 L.F. OF 18" RCP @ 0.30% SLOPE
- ST11 5' x 5' CURB INLET
TOP ELEV. = 1326.34
FLOWLINE OUT = 1323.22
INSTALL 20.15 L.F. OF 18" RCP @ 1.4% SLOPE
- ST12 INSTALL 18" FLARED END SECTION FL.=1322.84
- ST13 5' x 5' CURB INLET
TOP ELEV. = 1326.65
FLOWLINE OUT = 1323.94
INSTALL 64.76 L.F. OF 18" RCP @ 0.30% SLOPE
- ST14 10' x 5' CURB INLET
TOP ELEV. = 1326.33
FLOWLINE OUT = 1323.51
INSTALL 177.50 L.F. OF 18" RCP @ 0.30% SLOPE
- ST23 OULET STRUCTURE
SEE DETAIL SHEET C-504
TOP ELEV. = 1324.44
FLOWLINE OUT = 1320.44
INSTALL 44.95 L.F. OF 24" RCP @ 0.40% SLOPE
- ST24 INSTALL 24" FLARED END SECTION FL.=1320.23
- ST25 OULET STRUCTURE
SEE DETAIL SHEET C-504
TOP ELEV. = 1324.44
FLOWLINE OUT = 1320.14
INSTALL 51.04 L.F. OF 24" RCP @ 0.50% SLOPE
- ST26 INSTALL 24" FLARED END SECTION FL.=1319.90
- ST27 INSTALL 18" FLARED END SECTION
FLOWLINE = 1321.29
INSTALL 60.00 L.F. OF 18" RCP @ 0.30% SLOPE
- ST28 INSTALL 18" FLARED END SECTION
FLOWLINE OUT = 1321.11

PLAN KEY NOTES

- 1 INSTALL SEDIMENT FOREBAY WITH CONCRETE LEVEL SPREADER, SEE DETAILS AND ELEVATIONS SHEET C-506.
- 2 INSTALL PRIMARY DETENTION BASIN OUTLET, SEE DETAIL SHEET C-504.
- 3 PROVIDE RIP RAP FOR ENERGY DISIPATION AND EROSION CONTROL. SEE SHEET C-506.

LEGEND

- 103.08 TOP OF CURB ELEVATION
- PV 99.89 PAVEMENT ELEVATION



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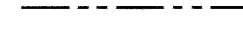


REVISIONS:	DATE	DESCRIPTION
02/24/2012	PERMIT SUBMITTAL	
03/14/2012	ADDED EXISTING CONTOURS	
03/22/2012	ADDENDUM #2	
05/14/2012	MODIFIED SPOT ELEVATIONS	

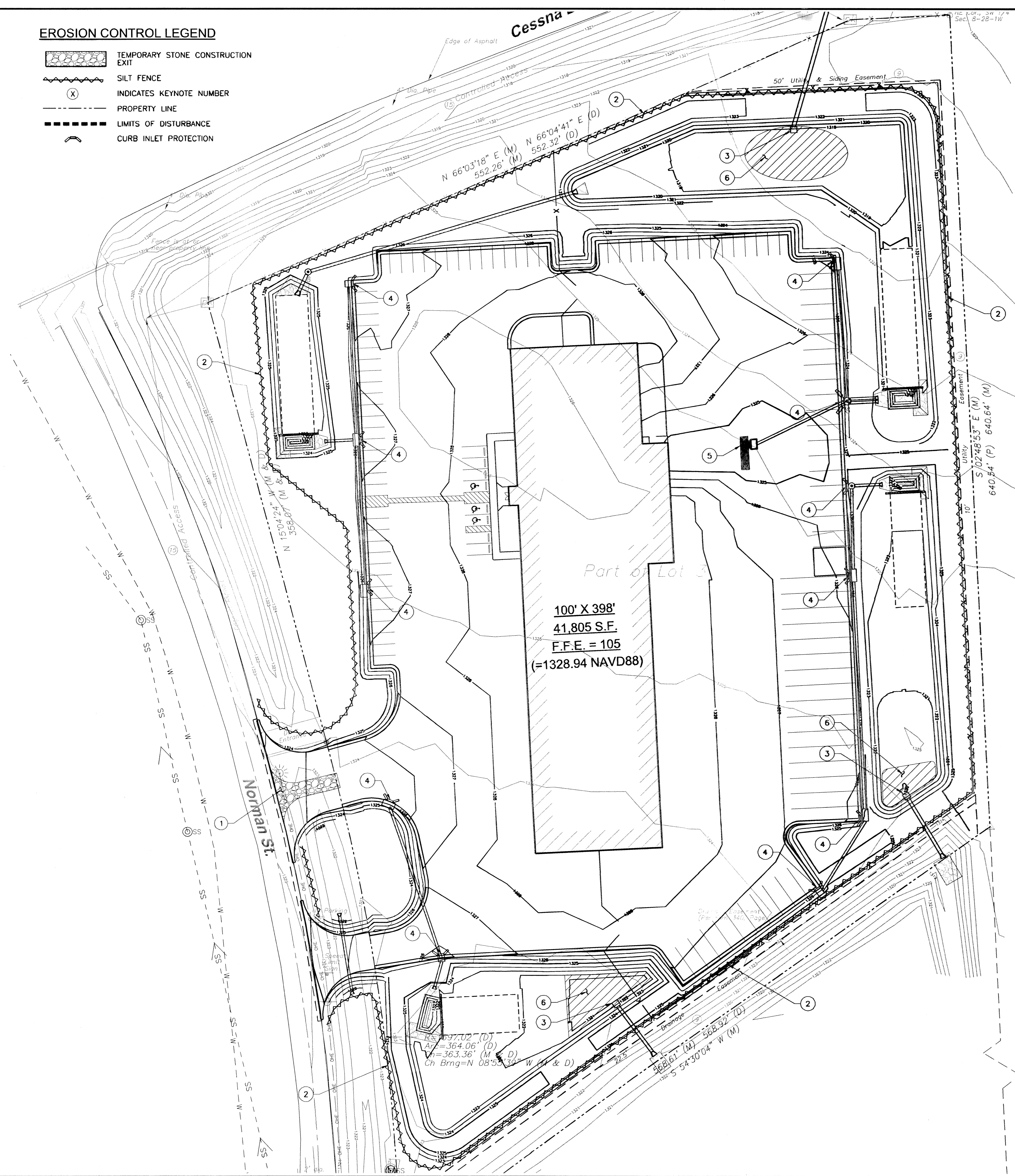
PROJ NO: P101110436
SCALE: 1" = 30'
DATE: 6/13/2012
DESIGNED BY: DLM
DRAWN BY: DLM
CHECKED BY: GEH

SHEET TITLE:
SITE GRADING
AND STORM
DRAINAGE
PLAN

SHEET NO.
C-103
SHEET OF

EROSION CONTROL LEGEND

-  TEMPORARY STONE CONSTRUCTION EXIT
-  SILT FENCE
-  INDICATES KEYNOTE NUMBER
-  PROPERTY LINE
-  LIMITS OF DISTURBANCE
-  CURB INLET PROTECTION



GENERAL EROSION NOTES:

- A. THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) INCLUDES, BUT IS NOT LIMITED TO THE CONSTRUCTION DOCUMENTS, THE SWPP NARRATIVE DOCUMENT, THE GENERAL PERMIT ISSUED BY THE KANSAS BUREAU OF HEALTH AND ENVIRONMENT AND ALL RECORDS OF INSPECTION AND ACTIVITY WHICH ARE CREATED DURING THE COURSE OF THE PROJECT. ALL EROSION CONTROL MEASURES AND BMP PRACTICES SHALL MEET THE REQUIREMENTS OF THE CITY OF WICHITA, KANSAS.
- B. CONTRACTOR SHALL PROVIDE FOR CONTROL OF SURFACE EROSION DURING CONSTRUCTION AND UNTIL THE OWNER ACCEPTS THE WORK AS COMPLETE. THE CONTRACTOR SHALL PROVIDE BERMS, SILT FENCE, STRAW BALES, SEDIMENT BASINS, OR OTHER MEANS TO PREVENT SEDIMENT FROM REACHING THE PUBLIC RIGHT-OF-WAY, OR ADJACENT PROPERTY. IN THE EVENT THE PREVENTION MEASURES ARE NOT EFFECTIVE, THE CONTRACTOR SHALL REMOVE ANY DEBRIS AND SEDIMENT AND RESTORE THE RIGHT-OF-WAY AND ADJACENT PROPERTY TO ORIGINAL OR BETTER CONDITION IN A TIMELY MANNER.
- C. THE CONTRACTOR SHALL INSPECT ALL EROSION CONTROL MEASURES AT LEAST ONCE A WEEK AND WITHIN 24 HOURS AFTER EVERY RAINFALL. THE CONTRACTOR SHALL ALSO INSPECT AND ASSURE THAT ALL EROSION CONTROL DEVICES ARE IN WORKING ORDER PRIOR TO ANY FORECAST RAINFALL.
- D. CONTRACTOR SHALL INSTALL SILT FENCE AROUND THE BASE OF ANY STOCKPILED SOIL MOUNDS AND SHALL TEMPORARILY SEED THE MOUND.
- E. ALL CONTRACTORS AND SUBCONTRACTORS INVOLVED WITH STORM WATER POLLUTION PREVENTION SHALL OBTAIN A COPY OF THE STATE OR NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM GENERAL PERMIT (NPDES PERMIT) AND BECOME FAMILIAR WITH THEIR CONTENTS.
- F. CONTRACTOR SHALL IMPLEMENT BEST MANAGEMENT PRACTICES AS REQUIRED BY THIS PLAN. ADDITIONAL BEST MANAGEMENT PRACTICES SHALL BE IMPLEMENTED AS DICTATED BY CONDITIONS AT NO ADDITIONAL COST OF OWNER THROUGHOUT ALL PHASES OF CONSTRUCTION.
- G. CONTRACTOR SHALL MINIMIZE CLEARING TO THE MAXIMUM EXTENT PRACTICAL OR AS REQUIRED BY THE GENERAL PERMIT.
- H. GENERAL CONTRACTOR SHALL DENOTE ON PLAN THE TEMPORARY PARKING AND STORAGE AREA WHICH SHALL ALSO BE USED AS THE EQUIPMENT MAINTENANCE AND CLEANING AREA, EMPLOYEE PARKING AREA, AND AREA FOR LOCATING PORTABLE FACILITIES, OFFICE TRAILERS, AND TOILET FACILITIES.
- I. ALL WASH WATER (CONCRETE TRUCKS, VEHICLE CLEANING, EQUIPMENT CLEANING, ETC.) SHALL BE DETAINED AND PROPERLY TREATED OR DISPOSED.
- J. SUFFICIENT OIL AND GREASE ABSORBING MATERIALS AND FLOTATION BOOMS SHALL BE MAINTAINED ON SITE OR READILY AVAILABLE TO CONTAIN AND CLEAN-UP FUEL OR CHEMICAL SPILLS AND LEAKS.
- K. DUST ON THE SITE SHALL BE CONTROLLED. THE USE OF MOTOR OILS AND OTHER PETROLEUM BASED OR TOXIC LIQUIDS FOR DUST SUPPRESSION OPERATIONS IS PROHIBITED.
- L. RUBBISH, TRASH, GARBAGE, LITTER, OR OTHER SUCH MATERIALS SHALL BE DEPOSITED INTO SEALED CONTAINERS. MATERIALS SHALL BE PREVENTED FROM LEAVING THE PREMISES THROUGH THE ACTION OF WIND OR STORMWATER DISCHARGE INTO DRAINAGE DITCHES OR WATERS OF THE STATE.
- M. ALL STORM WATER POLLUTION PREVENTION MEASURES PRESENTED ON THIS SITE MAP SHALL BE INITIATED AS SOON AS PRACTICABLE.
- N. DISTURBED PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITY HAS PERMANENTLY STOPPED SHALL BE PERMANENTLY SEEDED. THESE AREAS SHALL BE SEEDED NO LATER THAN 14 DAYS AFTER THE LAST CONSTRUCTION ACTIVITY OCCURRING IN THESE AREAS. REFER TO THE GRADING PLAN AND/OR LANDSCAPE PLAN.
- O. IF THE ACTION OF VEHICLES TRAVELING OVER THE GRAVEL CONSTRUCTION ENTRANCES IS NOT SUFFICIENT TO REMOVE THE MAJORITY OF DIRT OR MUD, THEN THE TIRES MUST BE WASHED BEFORE THE VEHICLES ENTER A PUBLIC ROAD, IF WASHING IS USED, PROVISIONS MUST BE MADE TO INTERCEPT THE WASH WATER AND TRAP THE SEDIMENT BEFORE IT IS CARRIED OFF THE SITE. ONLY USE INGRESS/EGRESS LOCATIONS AS PROVIDED.
- P. ALL MATERIALS SPILLED, DROPPED, WASHED, OR TRACKED FROM VEHICLES ONTO ROADWAYS OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY.
- Q. CONTRACTORS OR SUBCONTRACTORS WILL BE RESPONSIBLE FOR REMOVING SEDIMENT IN THE DETENTION PONDS AND ANY SEDIMENT THAT MAY HAVE COLLECTED IN THE STORM SEWER DRAINAGE SYSTEMS IN CONJUNCTION WITH THE STABILIZATION OF THE SITE.
- R. ON-SITE & OFFSITE SOIL STOCKPILE AND BORROW AREAS SHALL BE PROTECTED FROM EROSION AND SEDIMENTATION THROUGH IMPLEMENTATION OF BEST MANAGEMENT PRACTICES. STOCKPILE AND BORROW AREA LOCATIONS SHALL BE NOTED ON THE SITE MAP AND PERMITTED IN ACCORDANCE WITH GENERAL REQUIREMENTS.
- S. SLOPES SHALL BE LEFT IN A ROUGHENED CONDITION DURING THE GRADING PHASE TO REDUCE RUNOFF VELOCITIES AND EROSION.
- T. DUE TO THE GRADE CHANGES DURING THE DEVELOPMENT OF THE PROJECT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTING THE EROSION AND SEDIMENT CONTROL MEASURES (SILT FENCES, ETC.) TO PREVENT EROSION AND POLLUTANT DISCHARGE AS CONSTRUCTION PROGRESSES.
- U. AFTER SITE STABILIZATION, THE SEDIMENT BASINS SHALL BE CLEARED OF ALL SEDIMENT DEPOSITS, AND THE PERMANENT ORIFICE PLATES SHALL BE INSTALLED IN ALL DETENTION OUTLET STRUCTURES.
- V. AREA DISTURBED = 7.7 ACRES

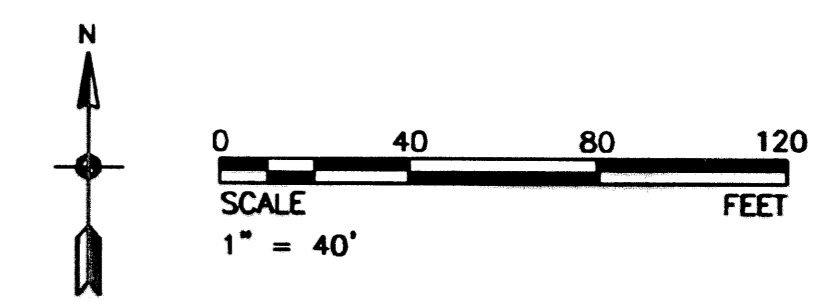
GRADING AND SEDIMENT CONTROL SCHEDULE

	START TASK DAY	FINISH TASK DAY
1. CONSTRUCT GRAVEL CONSTRUCTION ENTRANCE	1	2
2. INSTALL SILT FENCING	1	5
3. STRIP SITE OF GROUND COVER	5	7
4. BEGIN GRADING OPERATIONS	7	14
5. INSTALL UTILITIES AND STORM PIPING	7	14
6. PAVING OPERATIONS	14	28
7. ESTABLISH PERMANENT VEGETATIVE COVER	21	28
8. REMOVE TEMP. EROSION CONTROL MEASURES	AFTER 70% VEGETATION IS REACHED	

PLAN KEY NOTES

- ① INSTALL STONE CONSTRUCTION EXIT, SEE DETAIL SHEET C-507.
- ② INSTALL SILT FENCE, SEE DETAIL SHEET C-507.
- ③ PERMANENT DETENTION BASIN OUTLET STRUCTURE TO BE USED AS SEDIMENT BASIN CONTROL STRUCTURE DURING CONSTRUCTION. SEE DETAIL SHEET C-504.
- ④ INSTALL CURB INLET PROTECTION, SEE DETAIL SHEET C-507.
- ⑤ PROVIDE STRAWBALES AT INLET.
- ⑥ EXCAVATE SEDIMENT BASIN WET VOLUME BELOW OUTLET ELEVATION AS FOLLOWS:

BASIN	WET VOLUME	TOTAL VOLUME
N1	262 CY	526 CY
S1	91 CY	182 CY
S2	117 CY	233 CY



TRANSYSTEMS

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REVISIONS:	DATE	DESCRIPTION
02/24/2012	PERMIT SUBMITTAL	
03/14/2012	REVISED PER COMMENTS	
03/22/2012	ADDENDUM #2	

PROJ NO: P101110436
SCALE: 1" = 40'
DATE: 5/24/2012
DESIGNED BY: DLM
DRAWN BY: DLM
CHECKED BY: GEH

MARK

SHEET TITLE:

SITE EROSION CONTROL PLAN

SHEET NO. **C-106**

SHEET OF

CONSULTANTS:

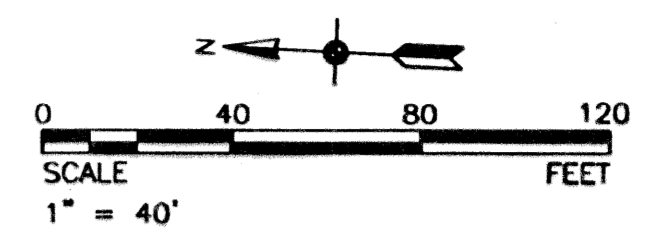
INLAND TRUCK PARTS
 NEW SERVICE STATION
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REVISIONS:	DATE	DESCRIPTION
1	02/24/2012	PERMIT SUBMITTAL
2	03/14/2012	REVISED PER COMMENTS
3	03/22/2012	ADDENDUM #2

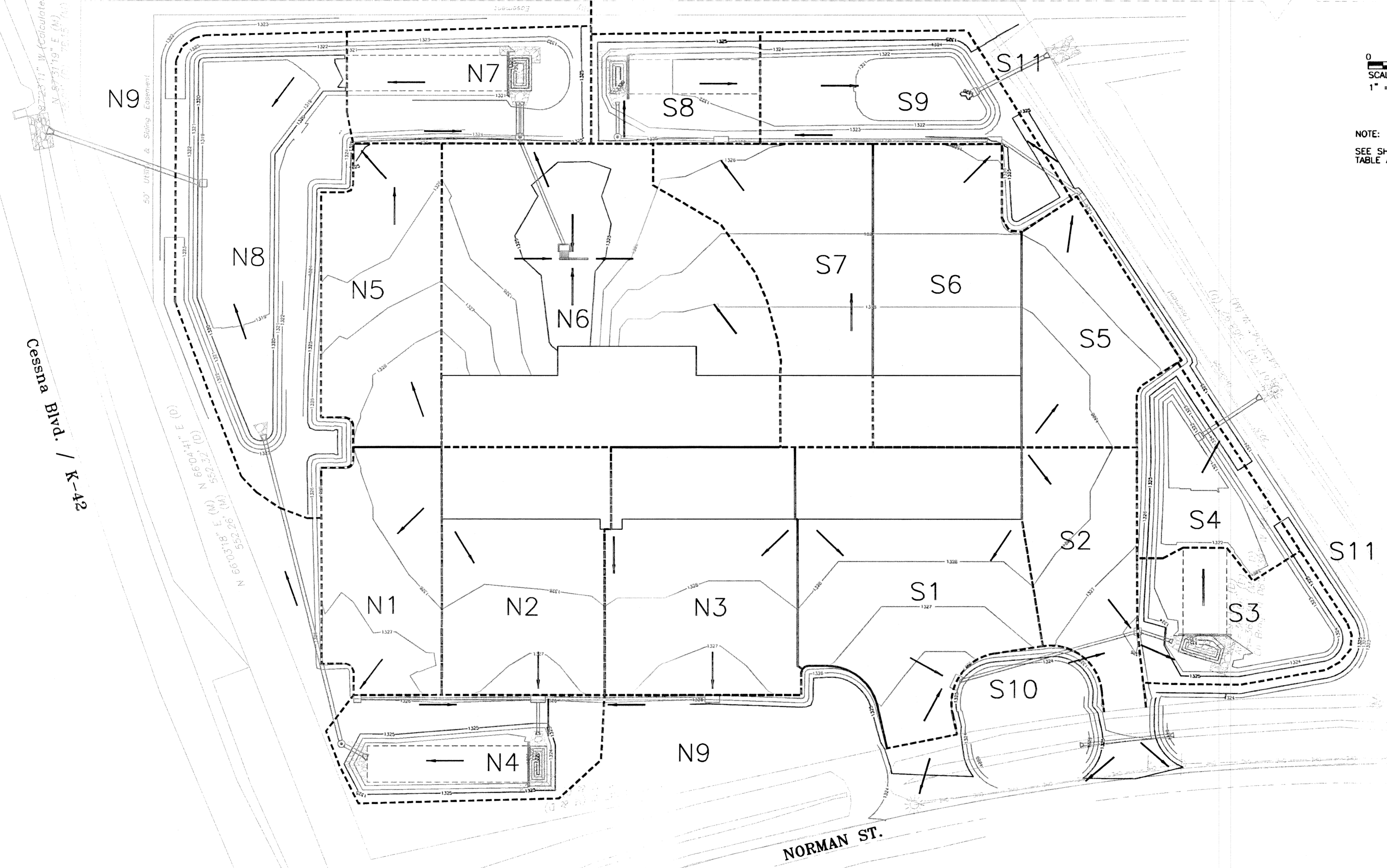
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 SCALE: 1" = 40'
 DATE: 5/24/2012
 DESIGNED BY: DLM
 DRAWN BY: DLM
 CHECKED BY: GEH

SHEET TITLE:
SITE DRAINAGE AREA MAP

SHEET NO.
C-107
 SHEET OF



NOTE:
 SEE SHEET C-108 FOR DRAINAGE COMPUTATION TABLE AND STORM SYSTEM COMPUTATION TABLE.



PROPOSED DRAINAGE AREA CALCULATIONS																
Northern Area PROPOSED																
	0.95	0.95	0.22	0.05	Vol Runoff Coeff											
	0.89	0.93	0.53	0.59	C Value											
	98	98	74	80	CN Value											
Sub Area	Parking	Roof	Turf (Type C 1-4%)	Undisturbed (Type C)	Subtotals (SF)	Subtotals (AC)	Sum CN Products	Sum C Products	Comp. CN	Comp. C	Rvu	Rvd	Rvi	Rv	Qwv	WQv (AC-FT)
N1	12274		1126		13400	0.31	1286176	11521	96	0.86	0.87	0.02	0.00	0.89	1.066	0.027
N2	13617	5865			19482	0.45	1909236	17574	98	0.90	0.95	0.00	0.00	0.95	1.140	0.042
N3	16114	6365			22479	0.52	2202942	20261	98	0.90	0.95	0.00	0.00	0.95	1.140	0.049
N4			12643		12643	0.29	935582	6701	74	0.53	0.00	0.22	0.00	0.22	0.264	0.006
N5	15674		327		16001	0.37	1560250	14123	98	0.88	0.93	0.00	0.00	0.94	1.122	0.034
N6	29313	13525			42838	0.98	4198124	38667	98	0.90	0.95	0.00	0.00	0.95	1.140	0.093
N7			13426		13426	0.31	993524	7116	74	0.53	0.00	0.22	0.00	0.22	0.264	0.007
N8			31583		31583	0.73	2337142	16739	74	0.53	0.00	0.22	0.00	0.22	0.264	0.016
					Subtotal Pond N1	3.95	15422976	132701	90	0.77					Subtotal Pond N1	0.276
N9				40457	40457	0.93	3236560	23870	80	0.59	0.00	0.00	0.05	0.05	0.060	0.005
					Not Captured	0.93	3236560	23870	80	0.59					Not Captured	0.005
					Total	4.87	18659536	156570	88	0.74					Total	0.280
	Sediment Basin Volume Required (CY)				526	3,600 CF per Acre										
	Excavated Volume Required (CY)				263	1,800 CF per Acre										

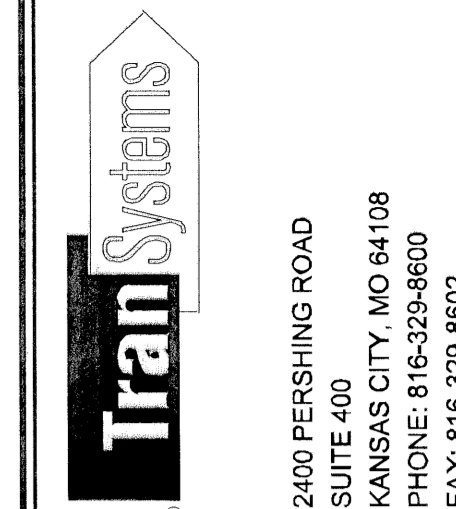
Southern Area PROPOSED																	
	0.95	0.95	0.22	0.05	Vol Runoff Coeff												
	0.89	0.93	0.53	0.59	C Value												
	98	98	74	80	CN Value												
Sub Area	Parking	Roof	Turf (Type C 1-4%)	Undisturbed (Type C)	Subtotals (SF)	Subtotals (AC)	Sum CN Products	Sum C Products	Comp. CN	Comp. C	Rvu	Rvd	Rvi	Rv	Qwv	WQv (AC-FT)	
S1	19009	7774			26783	0.61	2624734	24148	98	0.90	0.95	0.00	0.00	0.95	1.140	0.058	
S2	11756				11756	0.27	1152088	10463	98	0.89	0.95	0.00	0.00	0.95	1.140	0.026	
S3			11444		11444	0.26	846856	6065	74	0.53	0.00	0.22	0.00	0.22	0.264	0.006	
S4			9454		9454	0.22	699596	5011	74	0.53	0.00	0.22	0.00	0.22	0.264	0.005	
					Subtotal Pond S1	1.36	5323274	45687	90	0.77					Subtotal Pond S1	0.095	
S5	12898				12898	0.30	1264004	11479	98	0.89	0.95	0.00	0.00	0.95	1.140	0.028	
S6	15343	5099			20442	0.47	2003316	18397	98	0.90	0.95	0.00	0.00	0.95	1.140	0.045	
S7	15538	3175			18713	0.43	1833874	16782	98	0.90	0.95	0.00	0.00	0.95	1.140	0.041	
S8			8972		8972	0.21	663928	4755	74	0.53	0.00	0.22	0.00	0.22	0.264	0.005	
S9			15144		15144	0.35	1120656	8026	74	0.53	0.00	0.22	0.00	0.22	0.264	0.008	
					Subtotal Pond S2	1.75	6885778	59440	90	0.78					Subtotal Pond S2	0.126	
S10				4717	4717	0.11	377360	2783	80	0.59	0.00	0.00	0.05	0.05	0.060	0.001	
S11				30748	30748	0.71	2459840	18141	80	0.59	0.00	0.00	0.05	0.05	0.060	0.004	
					Not Captured	0.81	2837200	20924	80	0.59					Not Captured	0.004	
					Total	3.93	15046252	126051	88	0.74					Total	0.224	
POND S1	Sediment Basin Volume Required (CY)				182	3,600 CF per Acre											
	Excavated Volume Required (CY)				91	1,800 CF per Acre											
POND S2	Sediment Basin Volume Required (CY)				233	3,600 CF per Acre											
	Excavated Volume Required (CY)				117	1,800 CF per Acre											
	Total Building Footprint											41795	(SF)	0.96	(AC)		

DRAINAGE COMPUTATION TABLE

STORM SYSTEM COMPUTATION TABLE																									
100-Year Return Frequency																									
Sewer Location		Tributary Area (acres)				Time of Flow (min.)				Design						Profile									
Areas Contributing	Structure to	Structure	Top Elevation	Increment Area	Increment Runoff Coefficient	Total	Runoff Coefficient	To Upper End	In Section	100YR Rainfall Intensity (In./Hr.)	100YR Rate Per Acre K=1	100YR Total	Material	Diameter (In.)	Manning's N	Slope	Velocity (fps)	Capacity (cfs)	Length (ft.)	Fall (ft.)	Note	Inlet Elevation Upper End	Inlet Elevation Lower End	Inlet Q	
N1	ST1	ST3	1326.82	0.31	0.86	0.31	0.86	5.00	0.60	10.32	8.87	2.73	RCP	12	0.013	0.51%	3.25	2.55	116.50	0.59		1324.64	1324.05	2.73	
N3	ST2	ST3	1327.02	0.52	0.90	0.52	0.90	5.00	0.36	10.32	9.30	4.80	RCP	18	0.013	0.72%	5.06	8.94	109.50	0.79		1324.34	1323.55	4.80	
N1, N2, N3	ST3	ST4	1327.14	0.45	0.90	1.27	0.89	5.36	0.06	9.89	8.82	11.21	RCP	18	0.013	1.00%	5.96	10.53	20.00	0.20		1323.35	1323.15	4.16	
N1 thru N4	-	-	-	0.29	0.53	1.56	0.82	5.42	+2 min.	9.89	8.15	12.73	No pipe data. Runoff calculated for Swale Flows												
N1 thru N4	ST18	ST19	-	0.00	-	1.56	0.82	7.42	0.05	9.15	7.54	11.77	RCP	24	0.013	0.50%	5.11	16.04	14.14	0.07		1321.94	1321.87		
N1 thru N4	ST19	ST20	-	0.00	-	1.56	0.82	7.46	0.70	9.15	7.54	11.77	RCP	24	0.013	0.50%	5.11	16.04	215.03	1.08		1321.57	1320.49		
N5	ST5	ST8	1325.41	0.37	0.53	0.37	0.53	5.00	0.31	10.32	5.47	2.01	RCP	12	0.013	1.40%	5.38	4.23	101.45	1.42		1322.75	1321.33	2.01	
N6	ST6	ST7	1324.34	0.98	0.53	0.98	0.53	5.00	0.00	10.32	5.47	5.38	PVC	10	0.011	20.00%	21.29	11.61	5.00	1.00	4 barrels used	1322.76	1321.76	5.38	
N6	ST7	ST8	1324.39	-	-	0.98	0.53	5.00	0.39	10.32	5.47	5.38	RCP	18	0.013	0.30%	3.26	5.77	77.24	0.23		1321.06	1320.83		
N5 thru N6	ST8	ST9	1325.44	-	-	1.35	0.53	5.31	0.10	10.32	5.47	7.39	RCP	18	0.013	0.30%	3.26	5.77	20.00	0.06	2 barrels used	1320.78	1320.72		
N5 thru N7	-	-	-	0.31	0.59	1.66	0.54	5.42	-	10.32	5.58	9.26	No pipe data. Runoff calculated for Swale Flows												
N1 thru N8	ST21	ST22	1322.44	OUTFALL FROM NORTH DETENTION BASIN										RCP	30	0.013	0.20%	3.75	18.39	105.68	0.21		1317.84	1317.63	
S1	ST10	ST11	1325.94	0.61	0.90	0.61	0.90	5.00	0.65	10.32	9.30	5.72	RCP	18	0.013	0.30%	3.26	5.77	126.98	0.38		1323.79	1323.41	5.72	
S1, S2	ST11	ST12	1326.34	0.27	0.89	0.88	0.90	5.65	0.08	9.89	8.88	7.86	RCP	18	0.013	0.50%	4.21	7.45	20.15	0.10		1323.22	1323.12	2.48	
S1, S2, S3	-	-	-	0.26	0.53	1.15	0.81	5.73	-	9.89	8.05	9.24	No pipe data. Runoff calculated for Swale Flows												
S1 thru S4	ST23	ST24	1324.44	OUTFALL FROM SOUTH DETENTION BASIN NO. 1										RCP	24	0.013	0.30%	3.95	12.42	44.95	0.13		1320.44	1320.31	
S5	ST13	ST14	1326.65	0.30	0.90	0.30	0.90	5.00	0.33	10.32	9.29	2.75	RCP	18	0.013	0.30%	3.26	5.77	64.76	0.19		1323.94	1323.75	2.75	
S5, S6	ST14	ST15	1326.33	0.47	0.90	0.77	0.90	5.33	0.91	10.32	9.27	7.09	RCP	18	0.013	0.30%	3.26	5.77	177.50	0.53		1323.65	1323.11	4.34	
S5 thru S7	ST15	ST16	1326.33	0.43	0.53	1.33	0.69	6.24	0.25	9.89	6.82	9.05	RCP	18	0.013	0.50%	4.21	7.45	64.13	0.32		1323.01	1322.69	2.35	
S5 thru S7	ST16	ST17	1325.34	-	-	1.33	0.69	6.49	0.08	9.89	6.82	9.05	RCP	18	0.013	0.50%	4.21	7.45	20.00	0.10		1322.59	1322.49		
S5 thru S8	-	-	-	0.21	0.59	1.53	0.68	6.57	-	9.89	6.68	10.25	No pipe data. Runoff calculated for Swale Flows												
S5 thru S9	ST25	ST26	1324.44	OUTFALL FROM SOUTH DETENTION BASIN NO. 2										RCP	24	0.013	0.30%	3.95	12.42	51.04	0.15		1320.14	1319.99	
S10	ST27	ST28	-	0.11	0.59	0.11	0.59	5.00	0.31	10.32	6.09	0.66	RCP	18	0.013	0.30%	3.26	5.77	60.00	0.18		1321.29	1321.11		

STORM SYSTEM COMPUTATION TABLE

- NOTES:
- SEE SHEETS C-102 AND C-103 FOR SITE GRADING AND STORM DRAINAGE PLAN.
 - SEE SHEET C-107 FOR SITE DRAINAGE AREA MAP.



CONSULTANTS:

INLAND TRUCK PARTS
NEW SERVICE STATION

WICHITA, KANSAS



REVISIONS:	DATE	DESCRIPTION
02/24/2012	PERMIT SUBMITTAL	
03/14/2012	REVISED PER COMMENTS	
03/22/2012	ADDENDUM #2	

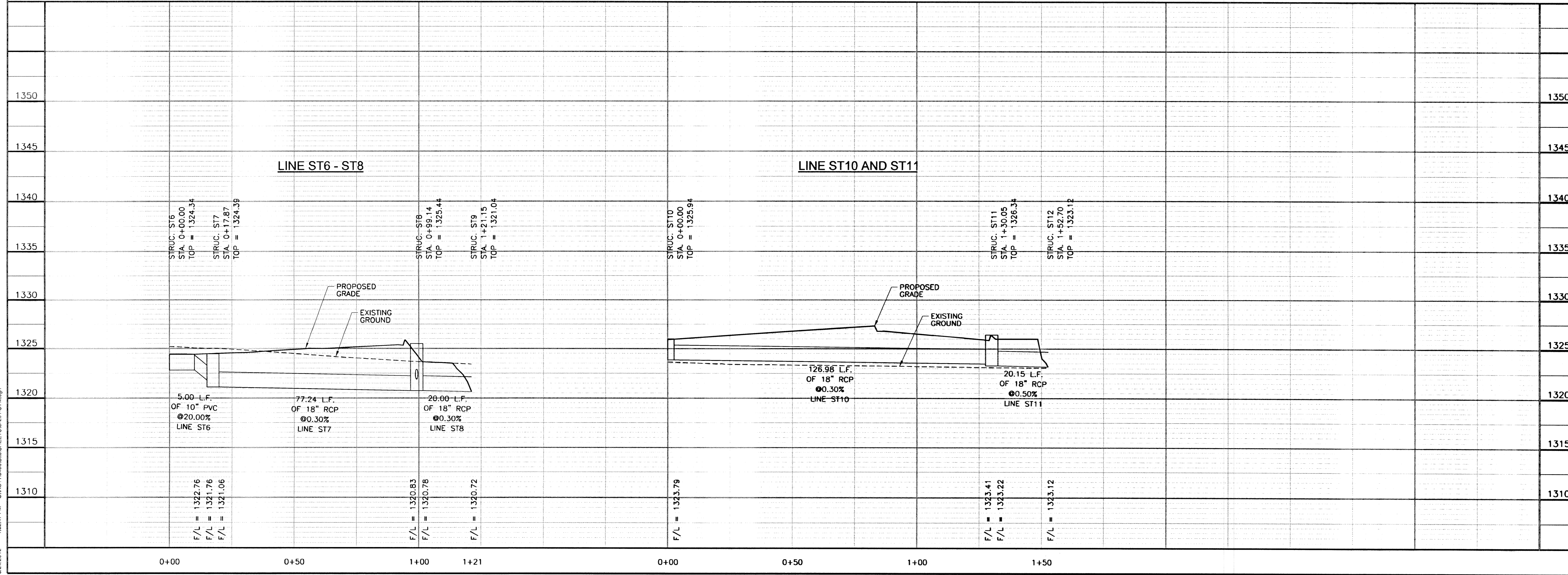
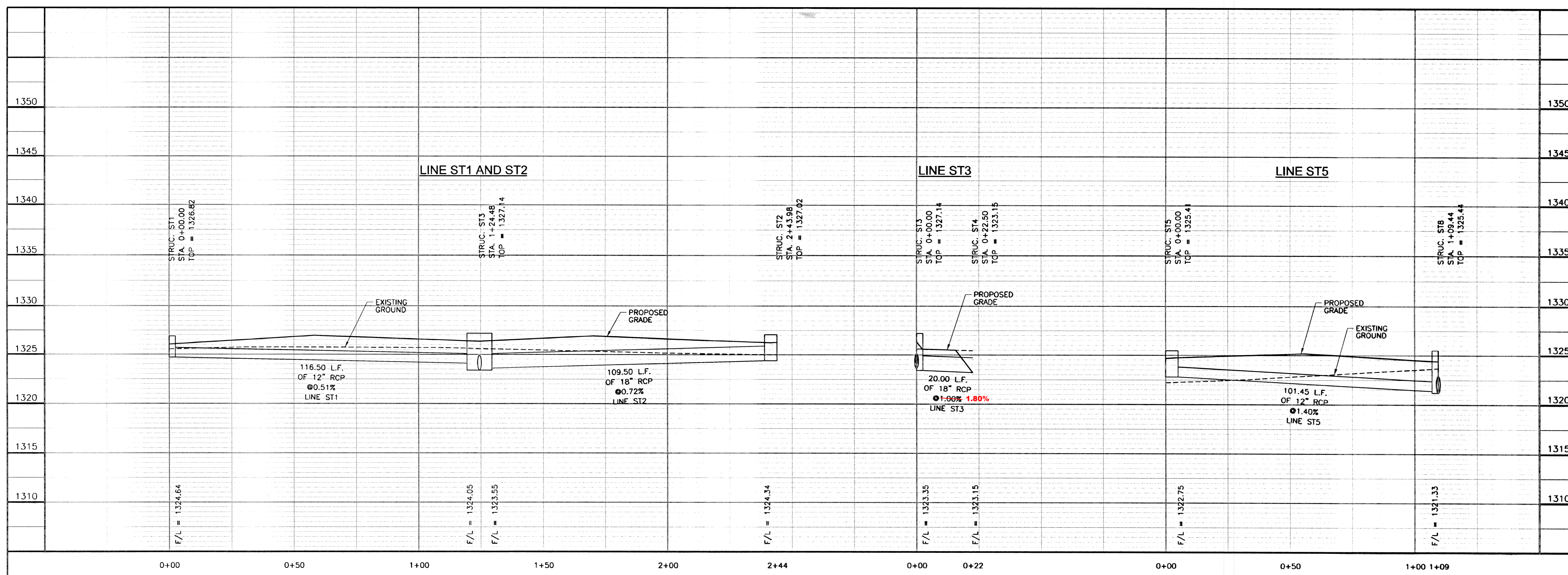
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DRAWN BY: DLM
CHECKED BY: GEH

SHEET TITLE:
DRAINAGE AND STORM SYSTEM COMPUTATION TABLES

SHEET NO.
C-108

CONSULTANTS:

INLAND TRUCK PARTS
 NEW SERVICE STATION
 WICHITA, KANSAS
INLAND TRUCK PARTS COMPANY
 An Employee Owned Company



REVISIONS:	DATE	DESCRIPTION
02/24/2012	PERMIT SUBMITTAL	
03/14/2012	REVISED PER COMMENTS	
03/22/2012	ADDENDUM #2	

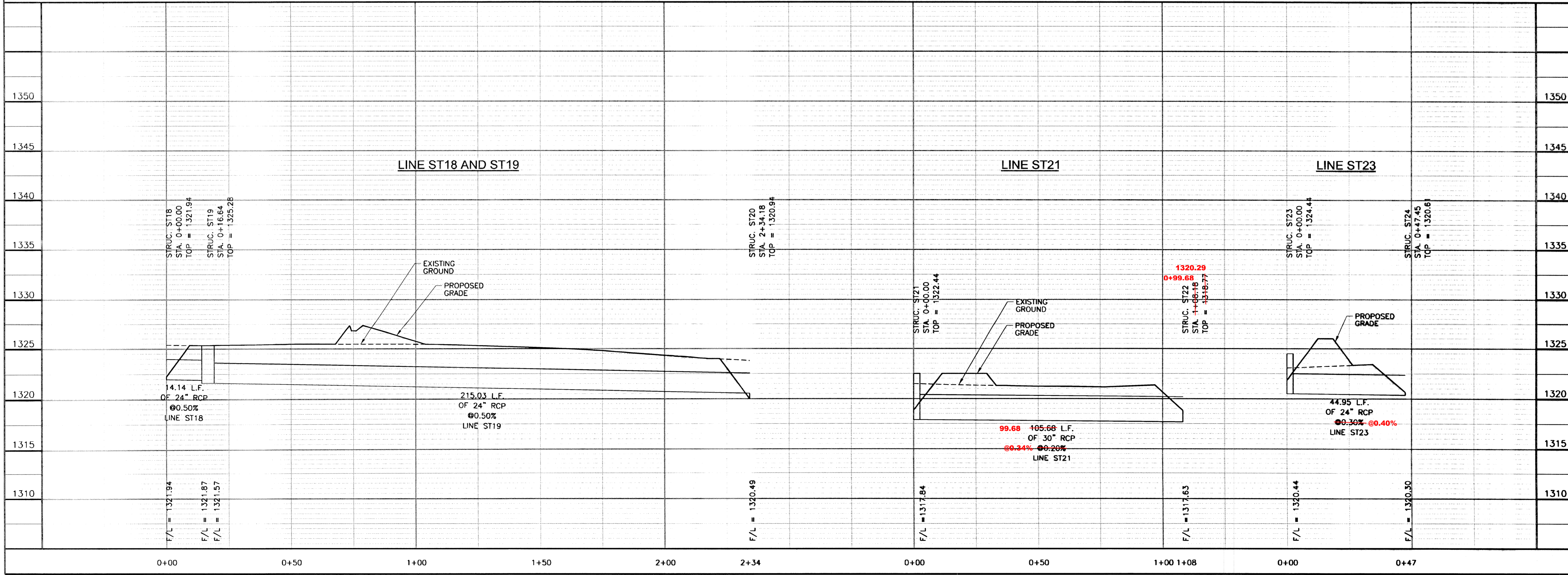
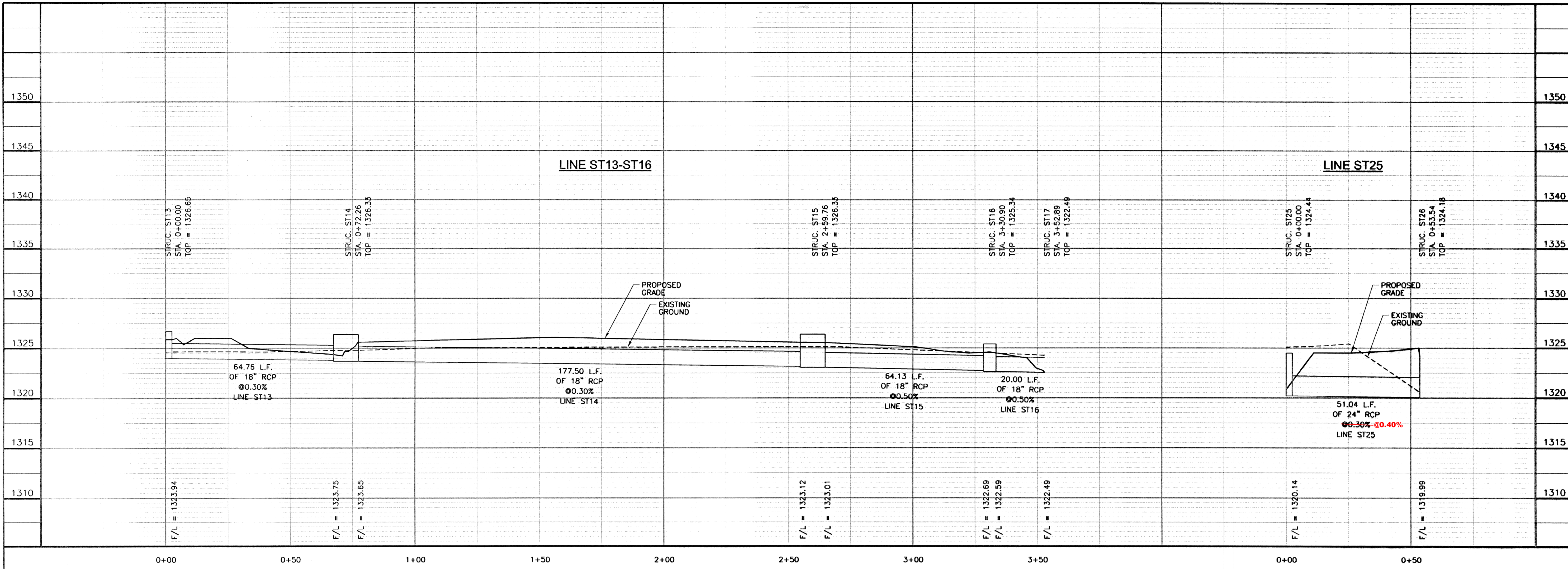
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SHEET TITLE:
STORM SEWER PROFILES

SHEET NO.
C-201

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CONSULTANTS:



REVISIONS:	DATE	DESCRIPTION
02/24/2012	PERMIT SUBMITTAL	
03/14/2012	REVISED PER COMMENTS	
03/22/2012	APPENDIX #2	

PROJ NO: P10110436
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 DATE: 6/5/2012
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 DRAWN BY: DLM
 CHECKED BY: GEH

SHEET TITLE:
STORM SEWER PROFILES

SHEET NO.
C-202
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CONSULTANTS:

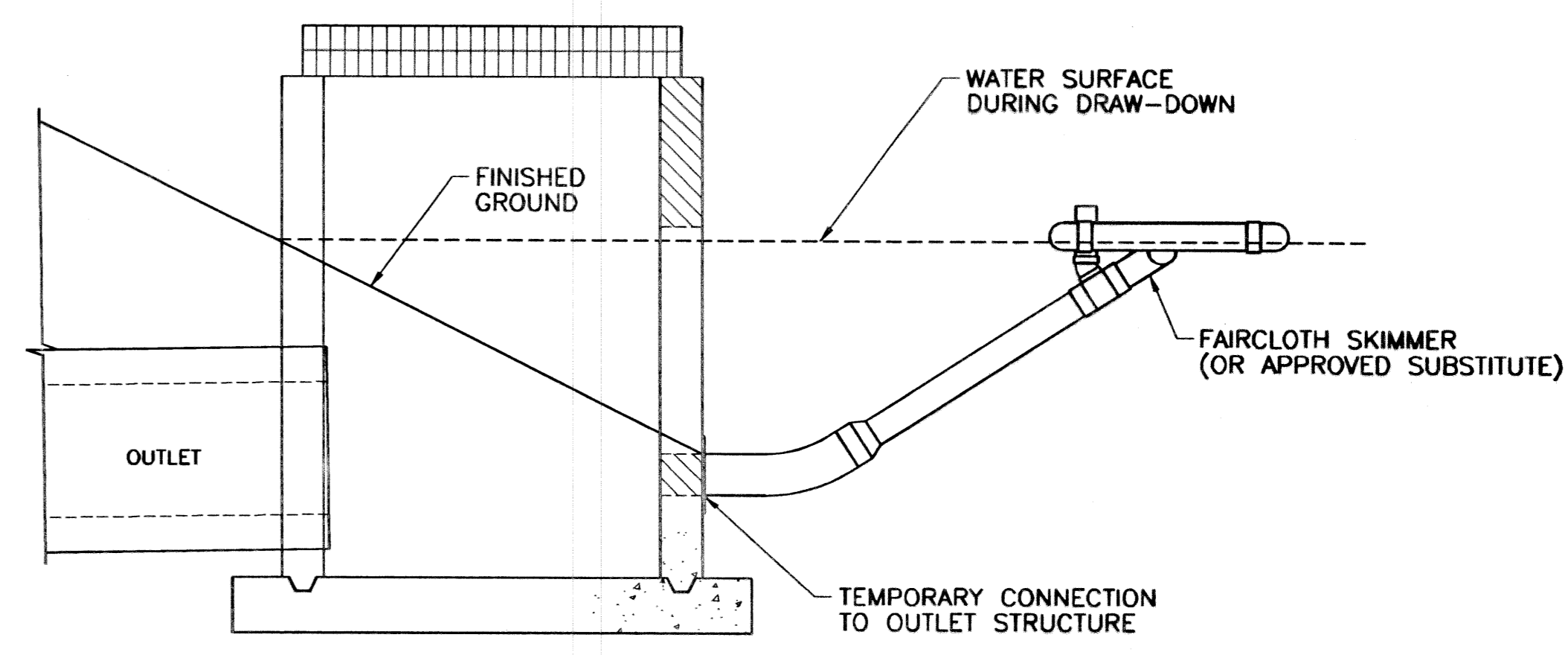
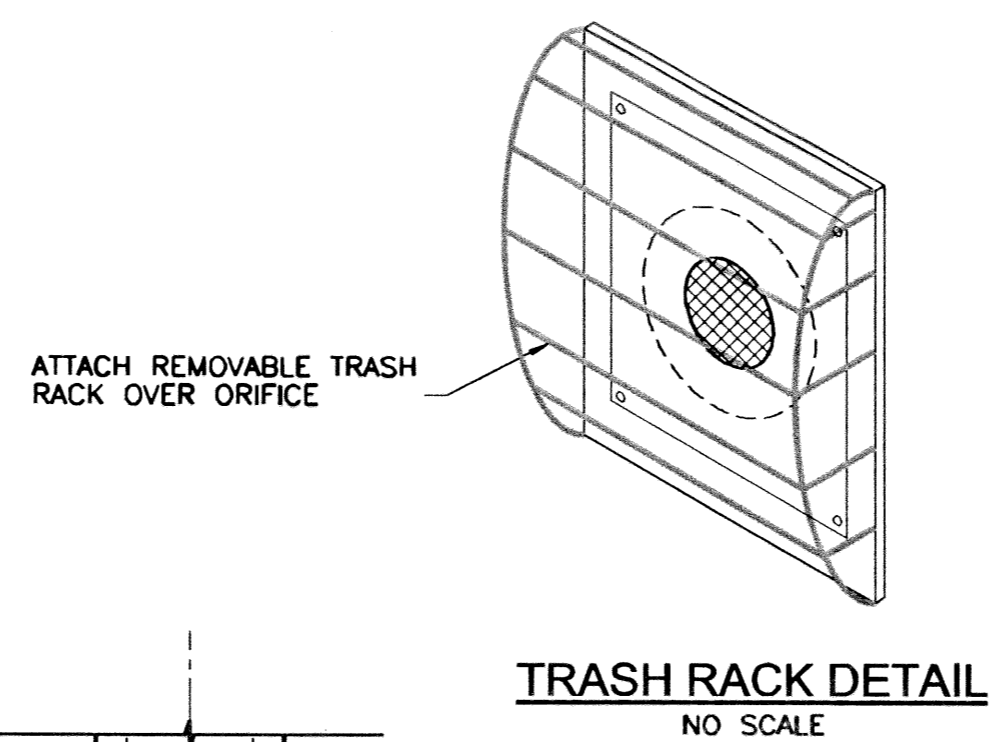
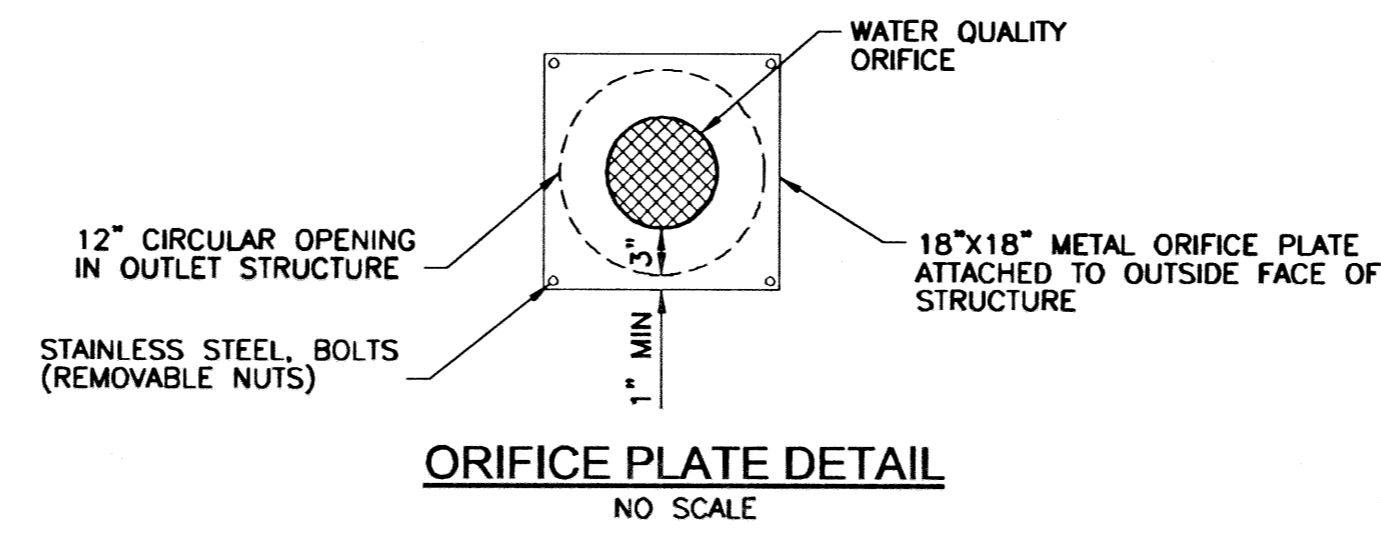
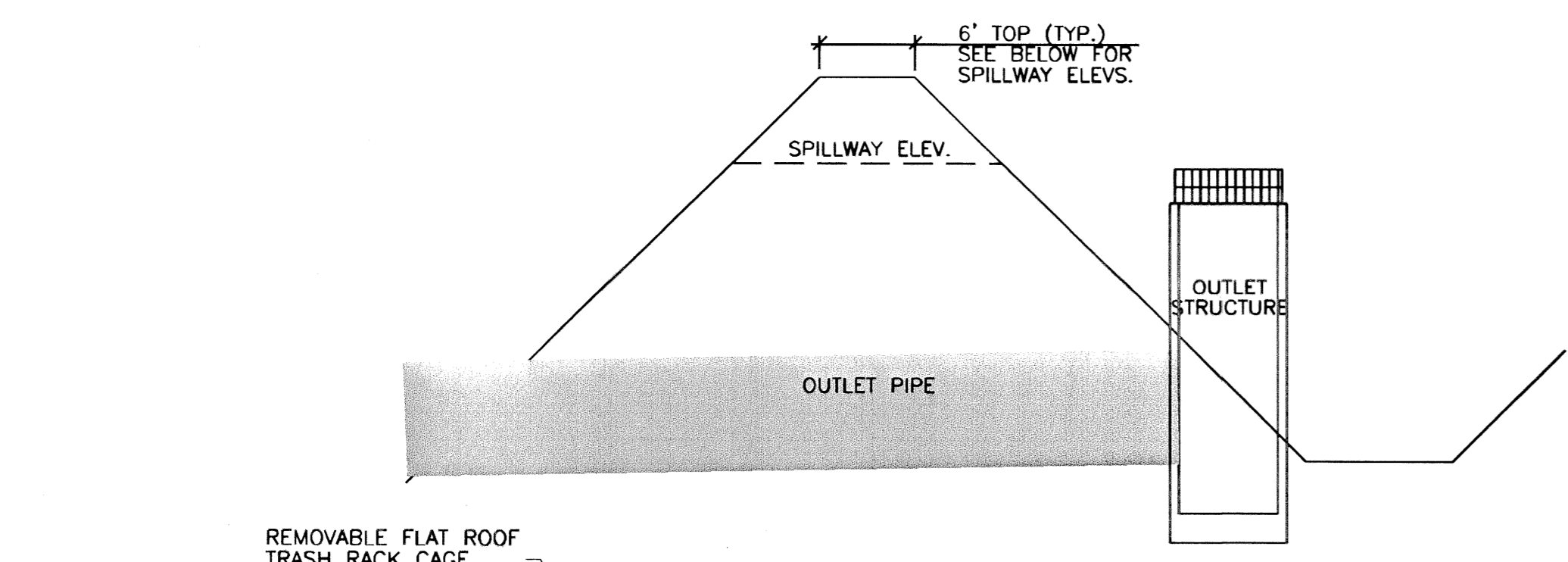
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03/22/2012	ADDENDUM #2	

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 DRAWN BY: DLM
 CHECKED BY: GEH

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OUTLET STRUCTURE DETAILS AND DATA

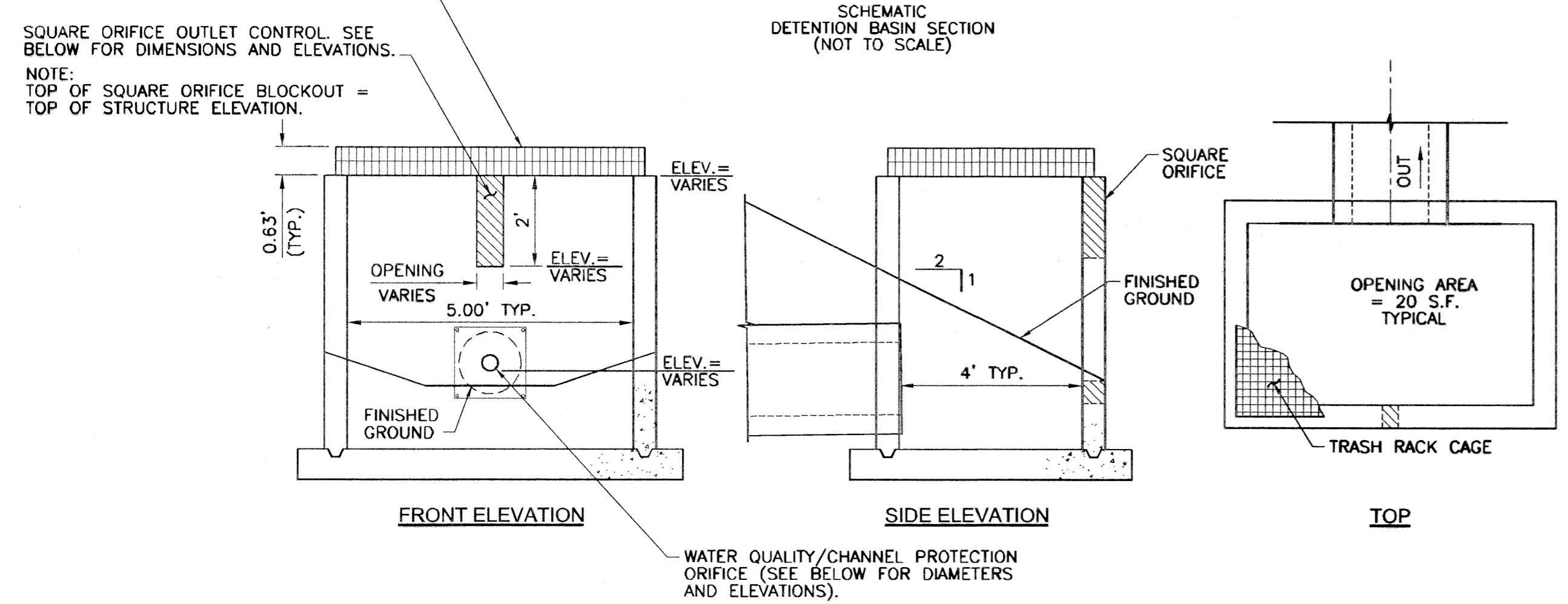
SHEET NO.
C-504

BASIN	SKIMMER SIZE	SKIMMER ORIFICE
NORTH 1	2.5"	1.9"
SOUTH 1	1.5"	1.3"
SOUTH 2	1.5"	1.4"



NOTES:

- PERMANENT OUTLET STRUCTURE SHALL BE USED AS A DRAW-DOWN CONTROL STRUCTURE DURING CONSTRUCTION. A SURFACE SKIMMER (USE FAIRCLOTH BRAND SKIMMER OR APPROVED SUBSTITUTE) SHALL BE ATTACHED TO THE PERMANENT OUTLET STRUCTURE AS SHOWN ON THIS SHEET.
- MAKE TEMPORARY WATER-TIGHT ATTACHMENT OF SKIMMER TO OUTLET STRUCTURE AT 12" OPENING FOR ORIFICE PLATE (DO NOT INSTALL ORIFICE PLATE UNTIL NPDES NOTICE OF TERMINATION (NOT) HAS BEEN FILED).
- ADDITIONAL BMPs MAY BE NECESSARY WITHIN THE DETENTION BASIN. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MONITOR THE PERFORMANCE OF THE BMP AND MAKE IMPROVEMENTS AND INSTALL ADDITIONAL BMPs AS NECESSARY.



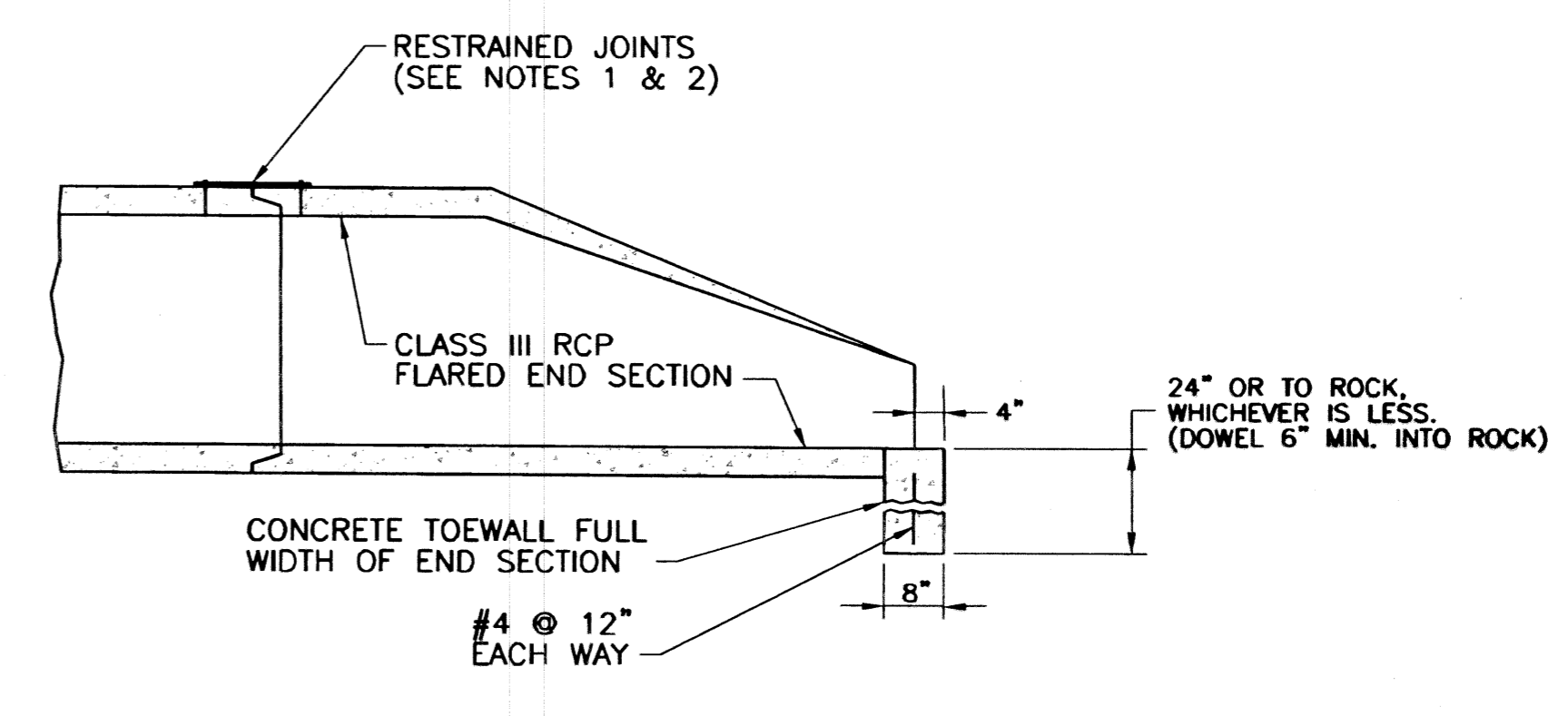
TYPICAL DETENTION BASIN - OUTLET STRUCTURE
 NO SCALE

OUTLET STRUCTURE USED AS SEDIMENT DRAW-DOWN CONTROL
 NO SCALE

NORTH (N1) DETENTION BASIN				
WQ/CP Orifice Elev	1318.04		Bottom Elev.	1320.54
WQ/CP Orifice Dia.	0.150 Ft.		Top Elev.	1322.44
WQv =	0.280 Acre-Ft		Centroid Elev	1321.49
WQv Elev =	1319.99		Width	12 In.
10% WQv Elev =	1318.59		Area	1.900 SF
WQv Time =	39.8 hrs		Riser Inlet Box Top	1322.44
10% WQv Time =	71.3	Based on 1-yr 24hr	OVERFLOW SPILLWAY ELEV	1322.44
WQ Draw Down Time	31.5		TOP OF BERM ELEV.	1323.94
1 yr 24 Hr WS Elev	1320.5	(From PondPak Results)		
CP Centroid to Centroid	26.1	(From PondPak Results)		

SW (S1) DETENTION BASIN				
WQ/CP Orifice Elev	1320.64		Bottom Elev.	1322.74
WQ/CP Orifice Dia.	0.0833 Ft.		Top Elev.	1324.44
WQv =	0.097 Acre-Ft		Centroid Elev	1323.59
WQv Elev =	1322.2		Width	9 In.
10% WQv Elev =	1321.09		Area	1.275 SF
WQv Time =	46.2 hrs		Riser Inlet Box Top	1324.44
10% WQv Time =	83.7	Based on 1-yr 24hr	OVERFLOW SPILLWAY ELEV	1324.44
WQ Draw Down Time	37.5		TOP OF BERM ELEV.	1325.94
1 yr 24 Hr WS Elev	1322.68	(From PondPak Results)		
CP Centroid to Centroid	32.4	(From PondPak Results)		

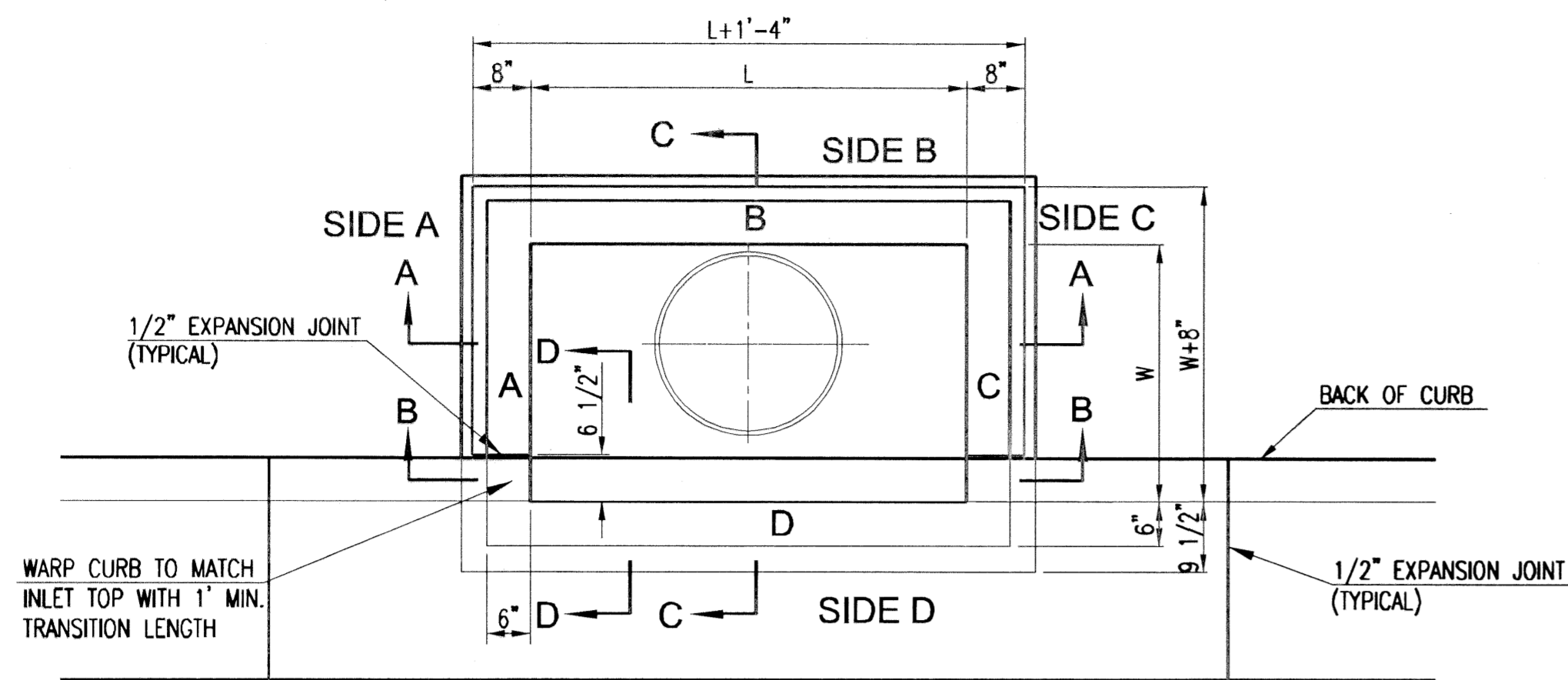
SE (S2) DETENTION BASIN				
WQ/CP Orifice Elev	1320.34		Bottom Elev.	1322.24
WQ/CP Orifice Dia.	0.100 Ft.		Top Elev.	1324.44
WQv =	0.128 Acre-Ft		Centroid Elev	1323.34
WQv Elev =	1321.76		Width	9 In.
10% WQv Elev =	1320.82		Area	1.650 SF
WQv Time =	43.4 hrs		Riser Inlet Box Top	1324.44
10% WQv Time =	80.65	Based on 1-yr 24hr	OVERFLOW SPILLWAY ELEV	1324.44
WQ Draw Down Time	37.3		TOP OF BERM ELEV.	1325.94
1 yr 24 Hr WS Elev	1322.19	(From PondPak Results)		
CP Centroid to Centroid	30.7	(From PondPak Results)		



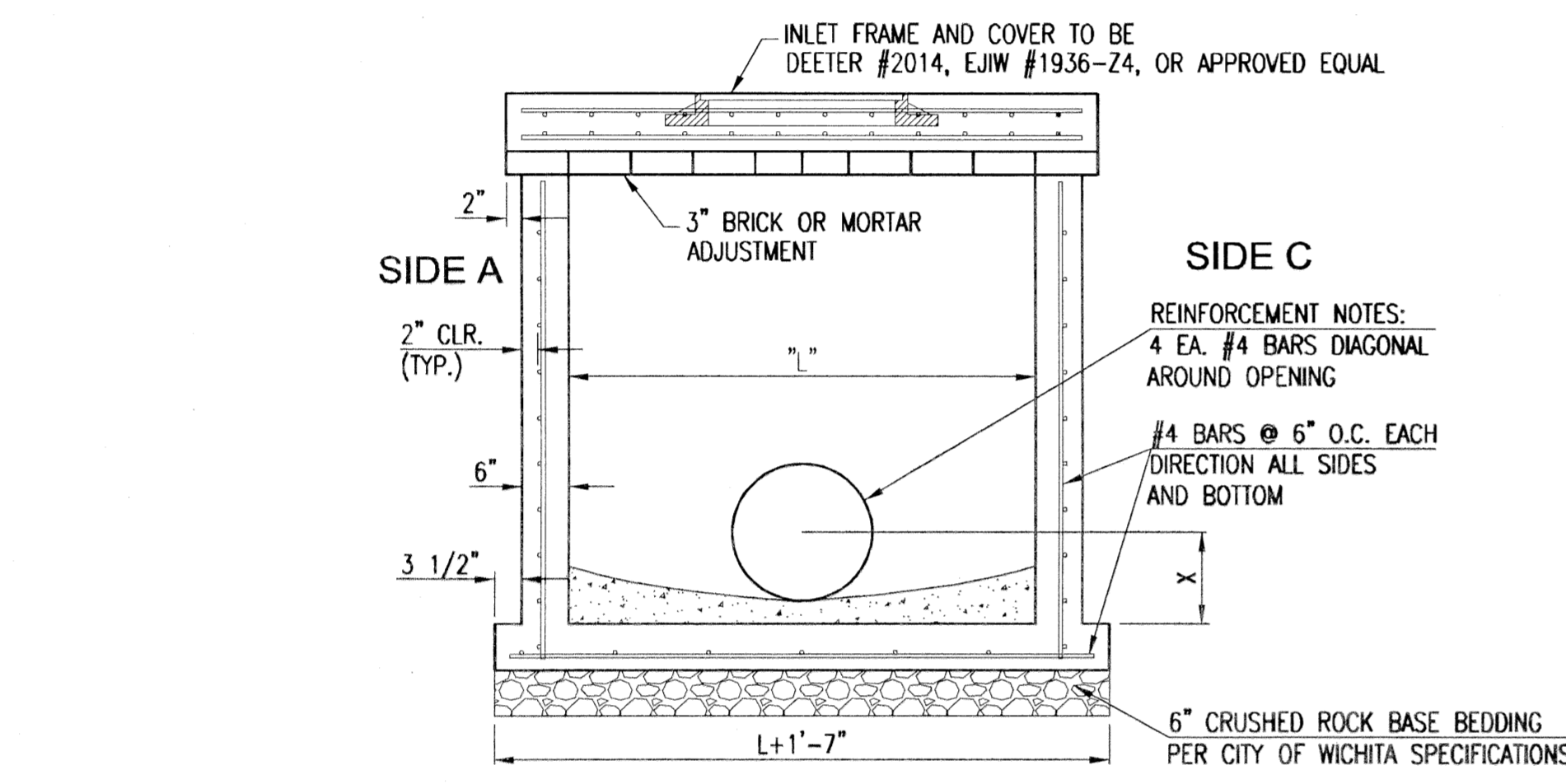
END SECTION NOTES:

- ALL OUTFALLS FROM DETENTION BASINS SHALL HAVE A RESTRAINED END SECTION AND CONCRETE TOEWALL. THE LAST TWO SECTIONS OF RCP AT EACH END SHALL ALSO BE MECHANICALLY RESTRAINED.
- THE RESTRAINED JOINT HARDWARE SHALL BE HOT DIP ZINC COATED IN ACCORDANCE WITH ASTM A-123.
- REINFORCING STEEL SHALL BE NEW BILLET, MIN. GRADE 40 AS PER ASTM A615, AND SHALL BE BENT COLD.

END SECTION TOEWALL DETAIL
 NO SCALE



TOP VIEW



SECTION "A-A"

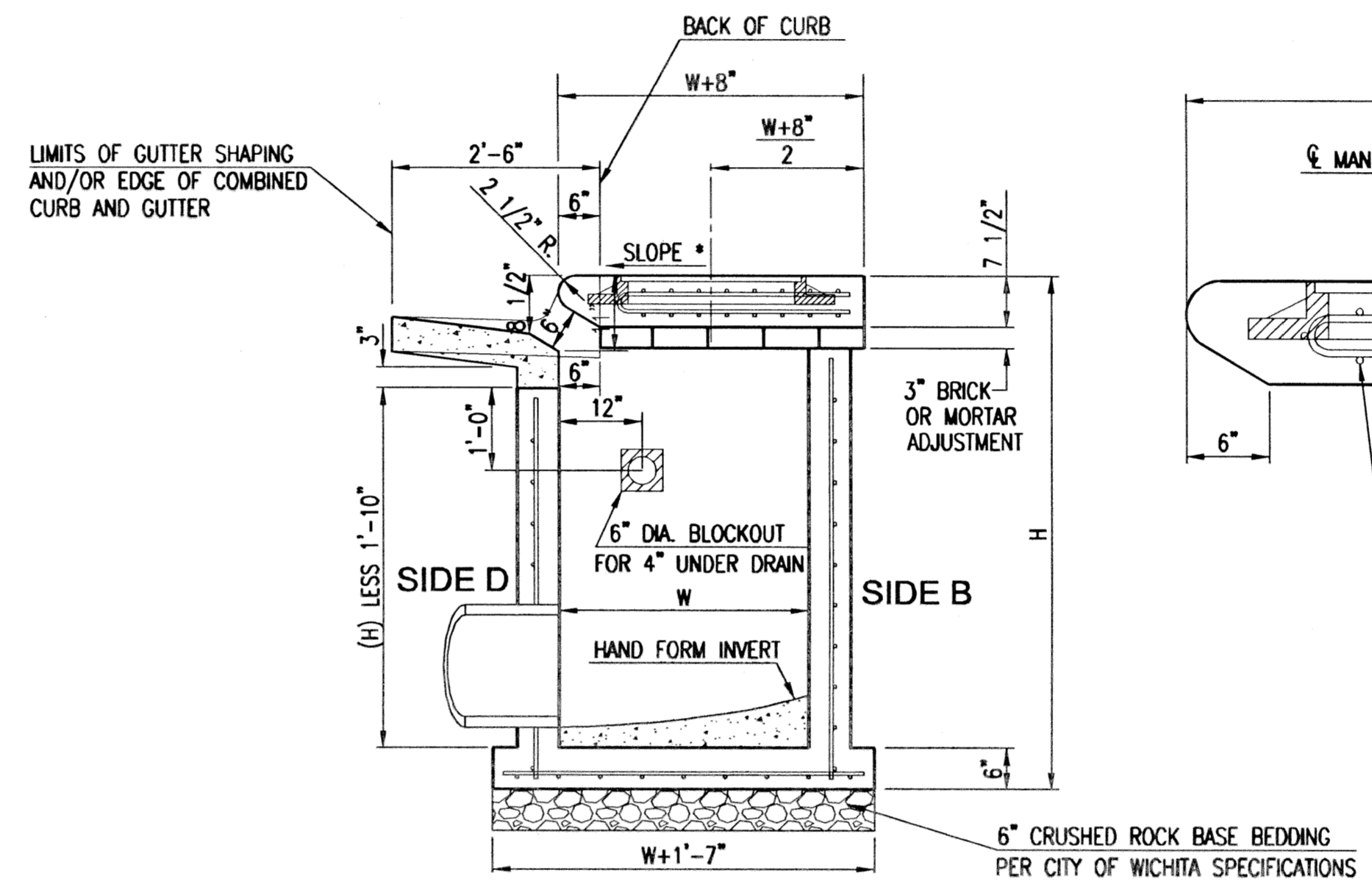


SECTION "B-B"

BAR SCHEDULE		
INLET OPENING	B1 BARS	SPACING
5'-0"	#4	4"
10'-0"	#6	3.5"

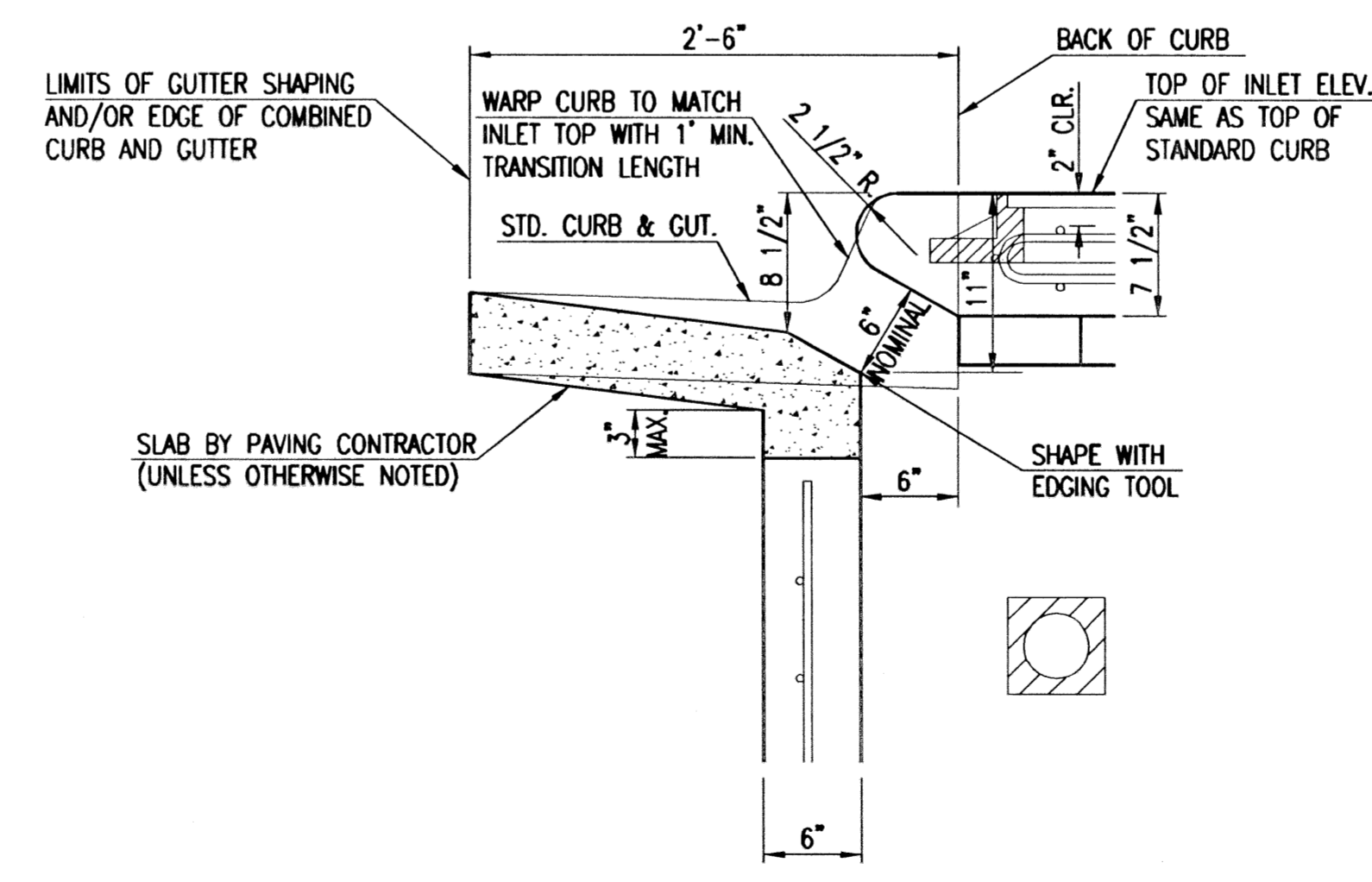
PRECAST CURB INLET WIDTHS				
W	PRE-CAST TOP SIZE			PIPE DIA.**
	WIDTH	LENGTH	TOP	
3'-0"	W+8"	L+1'-4"	7 1/2"	21" & SMALLER
4'-0"	W+8"	L+1'-4"	7 1/2"	24" & 30"
5'-0"	W+8"	L+1'-4"	7 1/2"	36" & 42"
6'-0"	W+8"	L+1'-4"	7 1/2"	48" & 54"
7'-0"	W+8"	L+1'-4"	7 1/2"	60" & 66"

** FOR PIPES PERPENDICULAR TO INLET WALL



SECTION "C-C"

NOTES:
 * SLOPE OF INLET TOP TO MATCH SIDEWALK OR PARKING SLOPES WITHIN LIMITS INDICATED.



SECTION "D-D"

GENERAL NOTES:

- CONCRETE TOPS TO BE INSTALLED ON THIN MORTAR CUSHION TO INSURE FULL SUPPORT ALONG BRICK. CONCRETE TOPS MAY BE CAST IN PLACE OR PRECAST. CONCRETE USED FOR INLET CONSTRUCTION SHALL CONFORM TO CITY OF WICHITA SPECIFICATIONS FOR CONCRETE PAVEMENT MIX.
- CONTRACTOR SHALL HAVE THE OPTION OF CONSTRUCTING 8" BRICK MASONRY WALLS BETWEEN THE CONCRETE INLET BASE AND TOP OF THIS INLET WHEN W=5'-0" AND H=7'-0" OR LESS.
- INLET INVERT SHALL BE SHAPED WITH 8 SACK SAND MIX CONCRETE TO CREATE FLOW CHANNELS AND TO INCREASE HYDRAULIC EFFICIENCY SUCH THAT THE INLET WILL BE SELF CLEANING BETWEEN ALL INLET AND/OR OUTLET PIPES.
- THE ENDS OF ALL PIPES INSTALLED IN INLETS SHALL BE CUT OFF FLUSH WITH THE INSIDE FACE OF THE INLET WALL.
- INLET FRAME AND COVER TO BE DEETER #2014, EJIW #1936 Z4, OR APPROVED EQUAL, SEE SW-303.
- CONTRACTOR SHALL REMOVE LIFTING HOOKS AFTER INSTALLATION. RECESSES IN INLET WALL SHALL BE GROUTED FLUSH TO THE INLET WALL WITH HYDRAULIC CEMENT AFTER THE INLET IS IN PLACE. LIFTING HOLES THRU THE INLET WALL WILL NOT BE ACCEPTED.

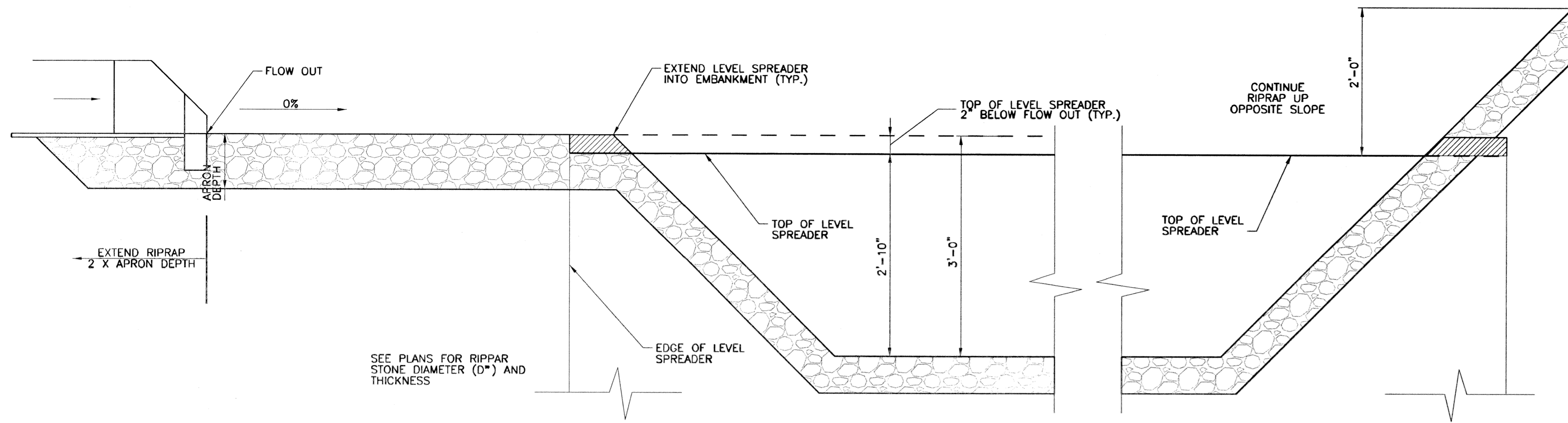
STANDARD TYPE 1 CURB INLET (5' OR 10' OPENING)
 NO SCALE

IF THIS DRAWING IS LESS THAN 24" X 36" IT IS A REDUCED SIZE DRAWING

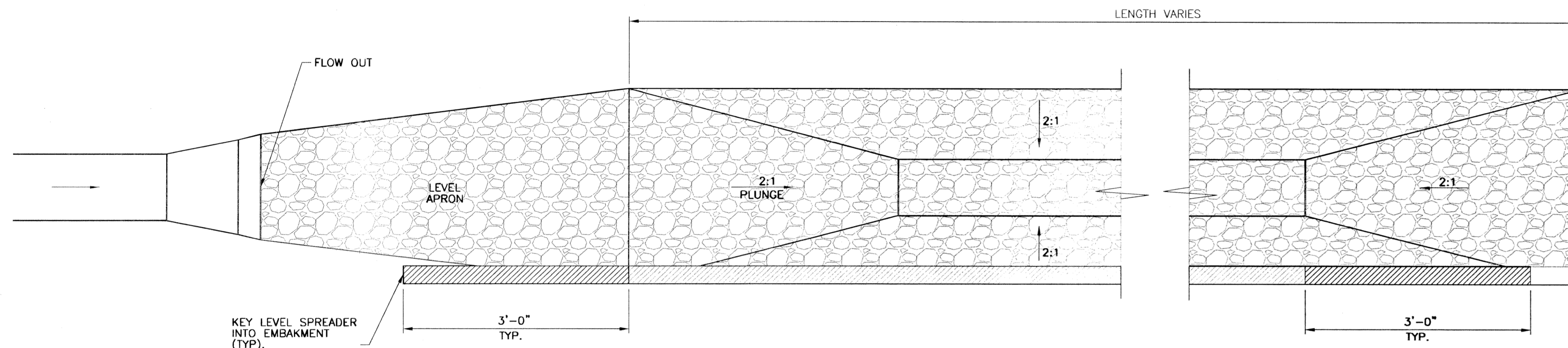
CONSULTANTS:

REVISIONS:	DATE	DESCRIPTION
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03/14/2012	REVISED PER COMMENTS	
03/22/2012	ADDENDUM #2	

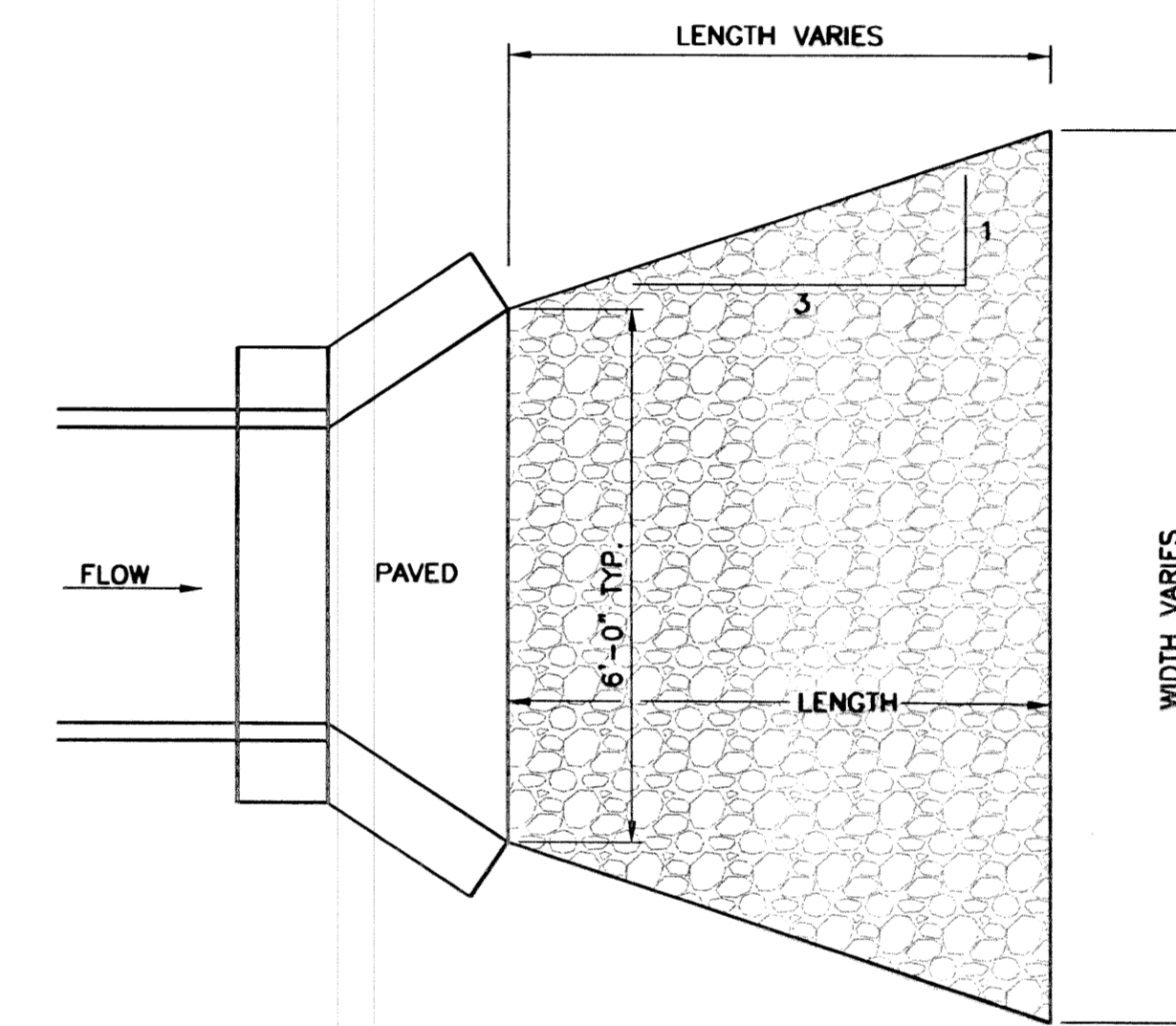
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DRAWN BY: DLM
CHECKED BY: GEH
SHEET TITLE:
STANDARD TYPE 1 CURB INLET DETAIL
SHEET NO. C-505



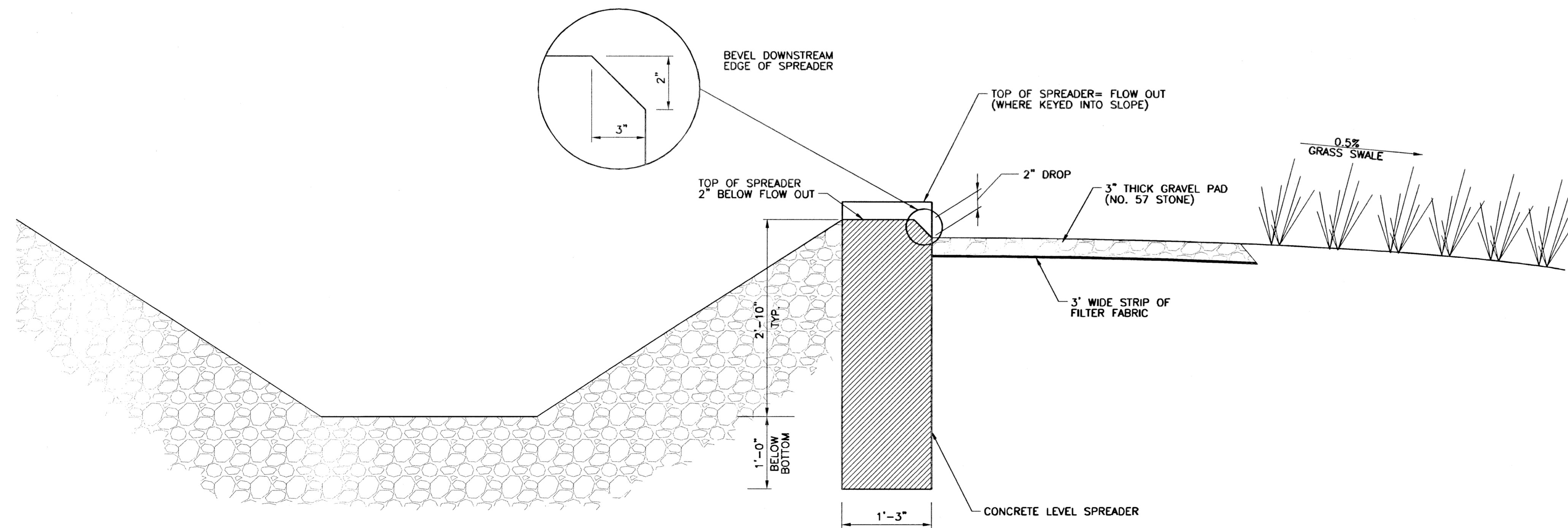
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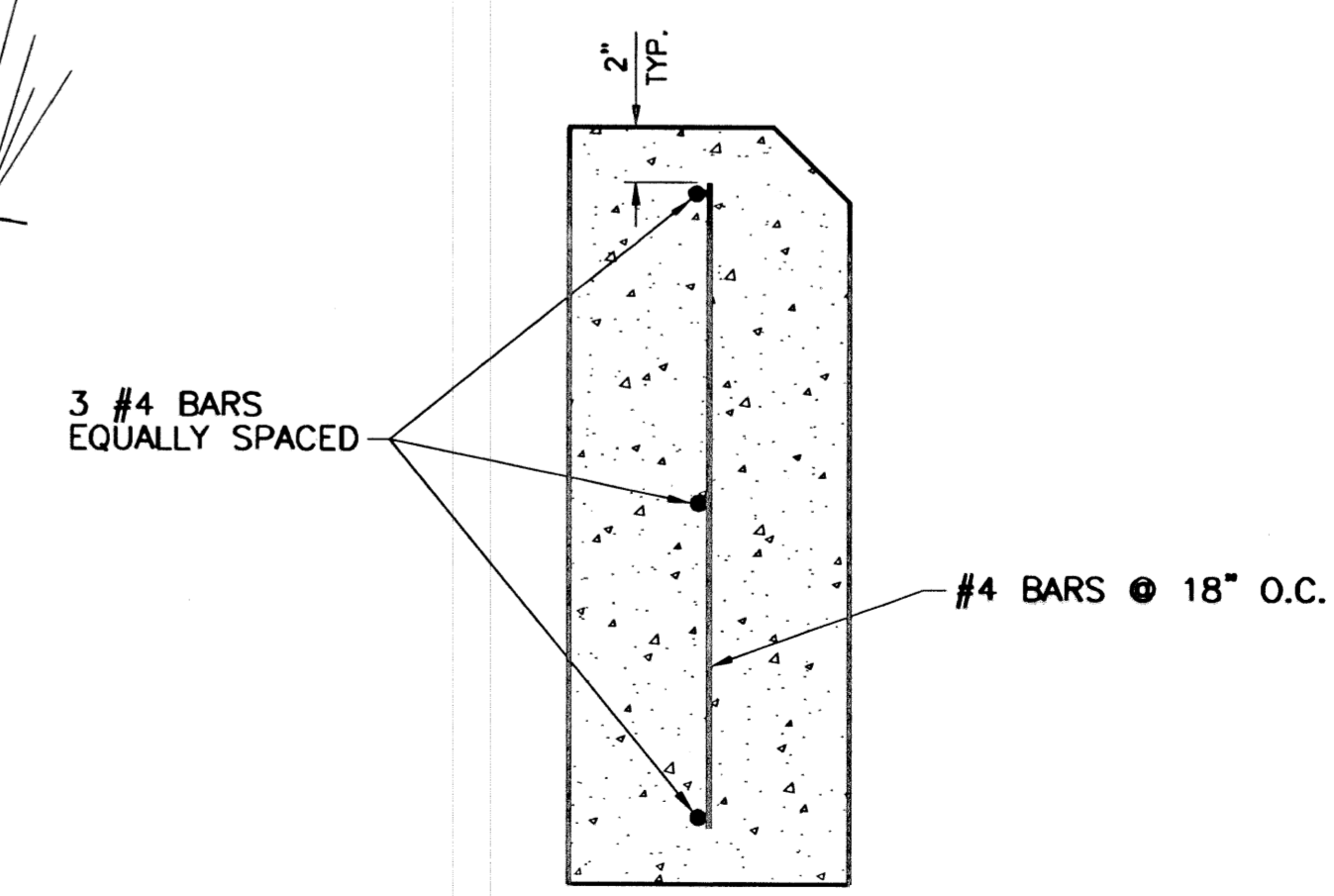
SEDIMENT FOREBAY PLAN



TYPICAL PIPE-END RIPRAP APRON



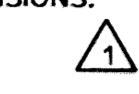
SECTION AT SPREADER



LEVEL SPREADER REINFORCEMENT

RIP RAP OUTLET/ SEDIMENT FORE BAY NOTES

1. OUTLET SHALL CONSIST OF FLAT RIPRAP APRON AT PIPE END HEADWALL, WITH A FOREBAY FOR SEDIMENT STORAGE AND A LEVEL SPREADER TO RELEASE FLOW TO A GRASSSED SWALE.
2. SEE SHEET C-508 FOR RIPRAP AND FOREBAY DIMENSIONS.



Tran Systems
 2400 PERSHING ROAD
 SUITE 400
 KANSAS CITY, MO 64108
 PHONE: 816-528-8600
 FAX: 816-528-8602

CONSULTANTS:

INLAND TRUCK PARTS COMPANY
 WICHITA, KANSAS
 An Employee Owned Company

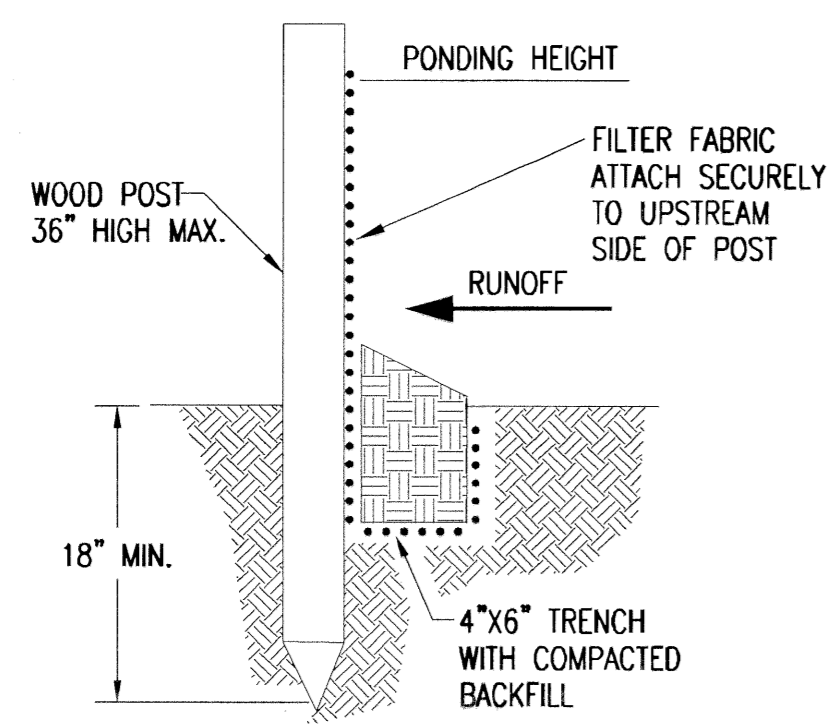
REVISIONS:	DATE	DESCRIPTION
02/24/2012	PERMIT SUBMITTAL	
03/14/2012	REVISED PER COMMENTS	
03/22/2012	ADDENDUM #2	

PROJ NO: P101110436
 SCALE: NONE
 DATE: 5/24/2012
 DESIGNED BY: DLM
 DRAWN BY: DLM
 CHECKED BY: GEH

SHEET TITLE:
SEDIMENT FOREBAY DETAILS

SHEET NO. C-506
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SILT FENCE BARRIERS
NO SCALE

MATERIAL SPECIFICATION:

SILT FENCE FABRIC SHOULD CONFORM TO THE AASHTO M288 96 SILT FENCE SPECIFICATION. THE POSTS USED TO SUPPORT THE SILT FENCE FABRIC SHOULD BE A HARDWOOD MATERIAL WITH THE FOLLOWING MINIMUM DIMENSIONS: 2" SQUARE (NOMINAL) BY 4' LONG. SILT FENCE FABRIC SHOULD BE ATTACHED TO THE WOODEN POSTS WITH STAPLES, WIRE, ZIP TIES, OR NAILS.

PLACEMENT:

A SLOPE BARRIER SHOULD BE USED AT THE TOE OF A SLOPE WHEN A DITCH DOES NOT EXIST. THE SLOPE BARRIER SHOULD BE PLACED ON NEARLY LEVEL GROUND 5' TO 10' AWAY FROM THE TOE OF A SLOPE. THE BARRIER IS PLACED AWAY FROM THE TOE OF THE SLOPE TO PROVIDE ADEQUATE STORAGE FOR SETTLING OUT SEDIMENT. WHEN PRACTICABLE, SILT FENCE SLOPE BARRIERS SHOULD BE PLACED ALONG CONTOURS TO AVOID A CONCENTRATION OF FLOW. SILT FENCE SLOPE BARRIERS CAN ALSO BE PLACED ALONG RIGHT-OF-WAY FENCE LINES TO KEEP SEDIMENT FROM CROSSING ONTO ADJACENT PROPERTY. WHEN PLACED IN THIS MANNER, THE SLOPE BARRIER WILL NOT LIKELY FOLLOW CONTOURS.

PROPER INSTALLATION METHOD:

EXCAVATE A TRENCH THE LENGTH OF THE PLANNED SLOPE BARRIER THAT IS 6" DEEP BY 4" WIDE. MAKE SURE THAT THE TRENCH IS EXCAVATED ALONG A SINGLE CONTOUR. WHEN PRACTICABLE, SLOPE BARRIERS SHOULD BE PLACED ALONG CONTOURS TO AVOID A CONCENTRATION OF FLOW. PLACE THE SOIL ON THE UPSLOPE SIDE OF THE TRENCH FOR LATER USE. ROLL OUT A CONTINUOUS LENGTH OF SILT FENCE FABRIC ON THE DOWNSLOPE SIDE OF THE TRENCH. PLACE THE EDGE OF THE FABRIC IN THE TRENCH STARTING AT THE TOP UPSLOPE EDGE. LINE ALL THREE SIDES OF THE TRENCH WITH THE FABRIC. BACKFILL OVER THE FABRIC IN THE TRENCH WITH THE EXCAVATED SOIL AND COMPACT. AFTER FILLING THE TRENCH, APPROXIMATELY 24" TO 36" OF SILT-FENCE FABRIC SHOULD REMAIN EXPOSED. LAY THE EXPOSED SILT FENCE UPSLOPE OF THE TRENCH TO CLEAR AN AREA FOR DRIVING IN THE POSTS. JUST DOWNSLOPE OF THE TRENCH, DRIVE POSTS INTO THE GROUND TO A DEPTH OF AT LEAST 18". PLACE POSTS NO MORE THAN 4' APART. ATTACH THE SILT FENCE TO THE ANCHORED POST WITH STAPLES, WIRE, ZIP TIES, OR NAILS.

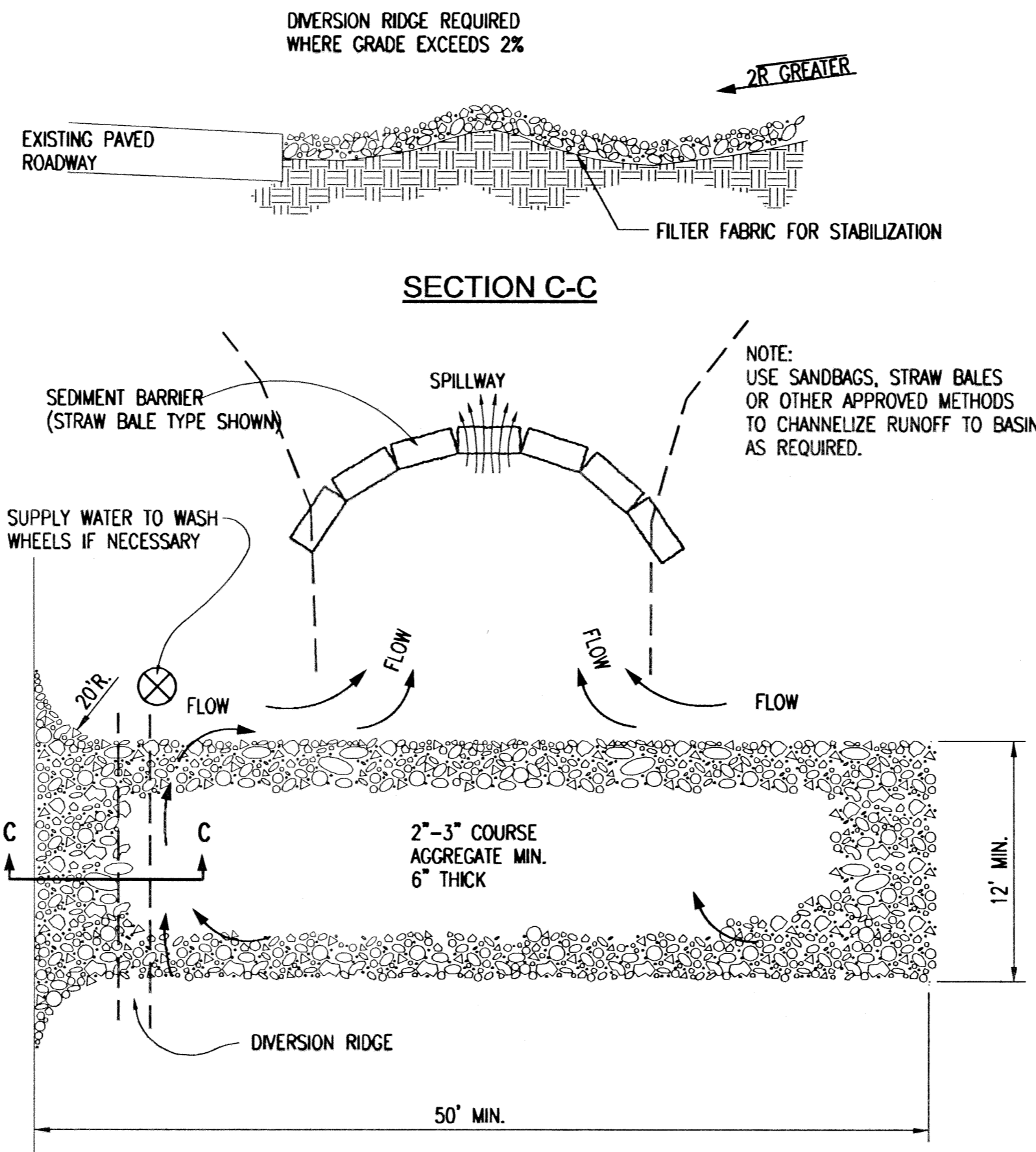
LIST OF COMMON PLACEMENT/INSTALLATION MISTAKES TO AVOID:

WHEN PRACTICABLE, DO NOT PLACE SILT FENCE SLOPE BARRIERS ACROSS CONTOURS. SLOPE BARRIERS SHOULD BE PLACED ALONG CONTOURS TO AVOID A CONCENTRATION OF FLOW. WHEN THE FLOW CONCENTRATES, IT OVERTOPS THE BARRIER AND THE SILT FENCE SLOPE BARRIER QUICKLY DETERIORATES. DO NOT PLACE SILT-FENCE POSTS ON THE UPSLOPE SIDE OF THE SILT FENCE FABRIC. IN THIS CONFIGURATION, THE FORCE OF THE WATER IS NOT RESTRICTED BY THE POSTS, BUT ONLY BY THE STAPLES (WIRE, ZIP TIES, NAILS, ETC.). THE SILT FENCE WILL RIP AND FAIL. DO NOT PLACE SILT FENCE SLOPE BARRIERS IN AREAS WITH SHALLOW SOILS UNDERLAIN BY ROCK. IF THE BARRIER IS NOT SUFFICIENTLY ANCHORED, IT WILL WASH OUT. SILT FENCE SLOPE BARRIERS MUST BE DUG INTO THE GROUND—SILT FENCE AT GROUND LEVEL DOES NOT WORK BECAUSE WATER WILL FLOW UNDERNEATH.

INSPECTION AND MAINTENANCE:

SILT FENCE SLOPE BARRIERS SHOULD BE INSPECTED EVERY 7 DAYS AND WITHIN 24 HOURS OF A RAINFALL OF 1/2" OR MORE. THE FOLLOWING IS A LIST OF QUESTIONS THAT SHOULD BE ADDRESSED DURING EACH INSPECTION:

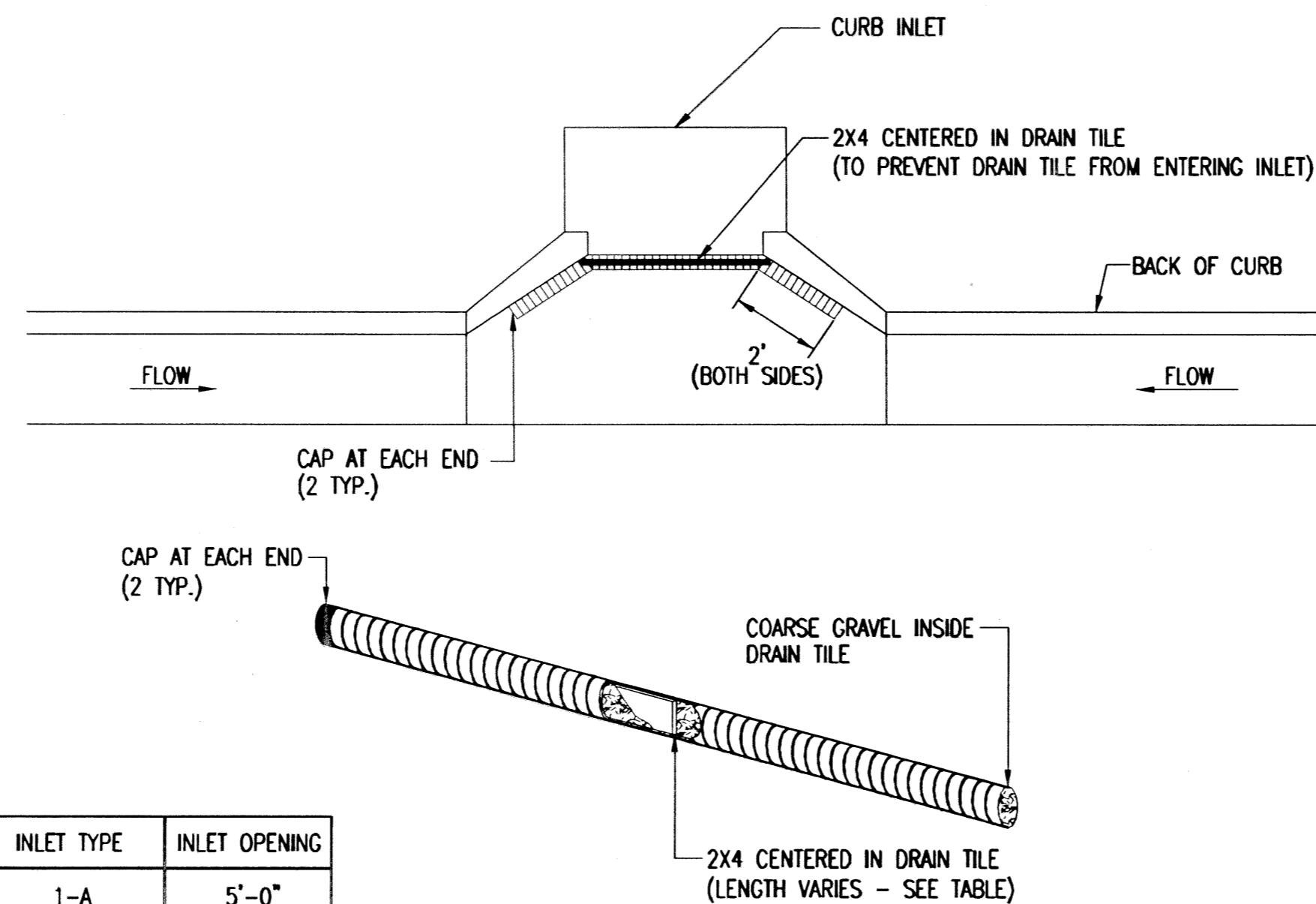
- ARE THERE ANY POINTS ALONG THE SLOPE BARRIER WHERE WATER IS CONCENTRATING?
- DOES WATER FLOW UNDER THE SLOPE BARRIER?
- DO THE SILT FENCES SAG EXCESSIVELY?
- HAS THE SILT FENCE TORN OR BECOME DETACHED FROM THE POSTS?
- DOES SEDIMENT NEED TO BE REMOVED FROM BEHIND THE SLOPE BARRIER?



STABILIZED CONSTRUCTION ENTRANCE
NO SCALE

GENERAL NOTES

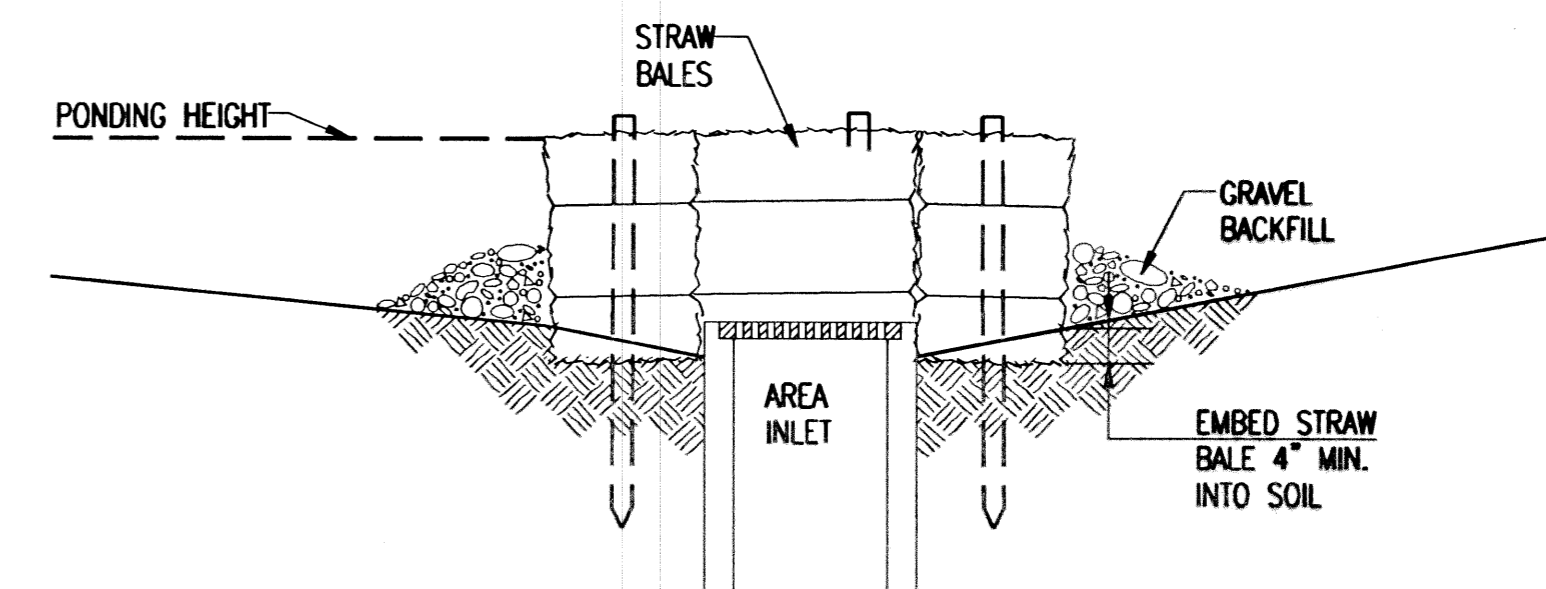
1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.
3. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN, AS SHOWN ABOVE.
4. DRIVE ENTRANCES ONTO RESIDENTIAL LOTS WILL NOT BE REQUIRED TO HAVE THE SEDIMENT BARRIER SHOWN, BUT WHEEL WASHING MAY BE REQUIRED IF STABILIZED ENTRANCE IS NOT SUFFICIENT TO KEEP MUD FROM BEING TRACKED ONTO ADJACENT STREET. ENTRANCE SHALL EXTEND FROM BACK OF CURB TO DWELLING.



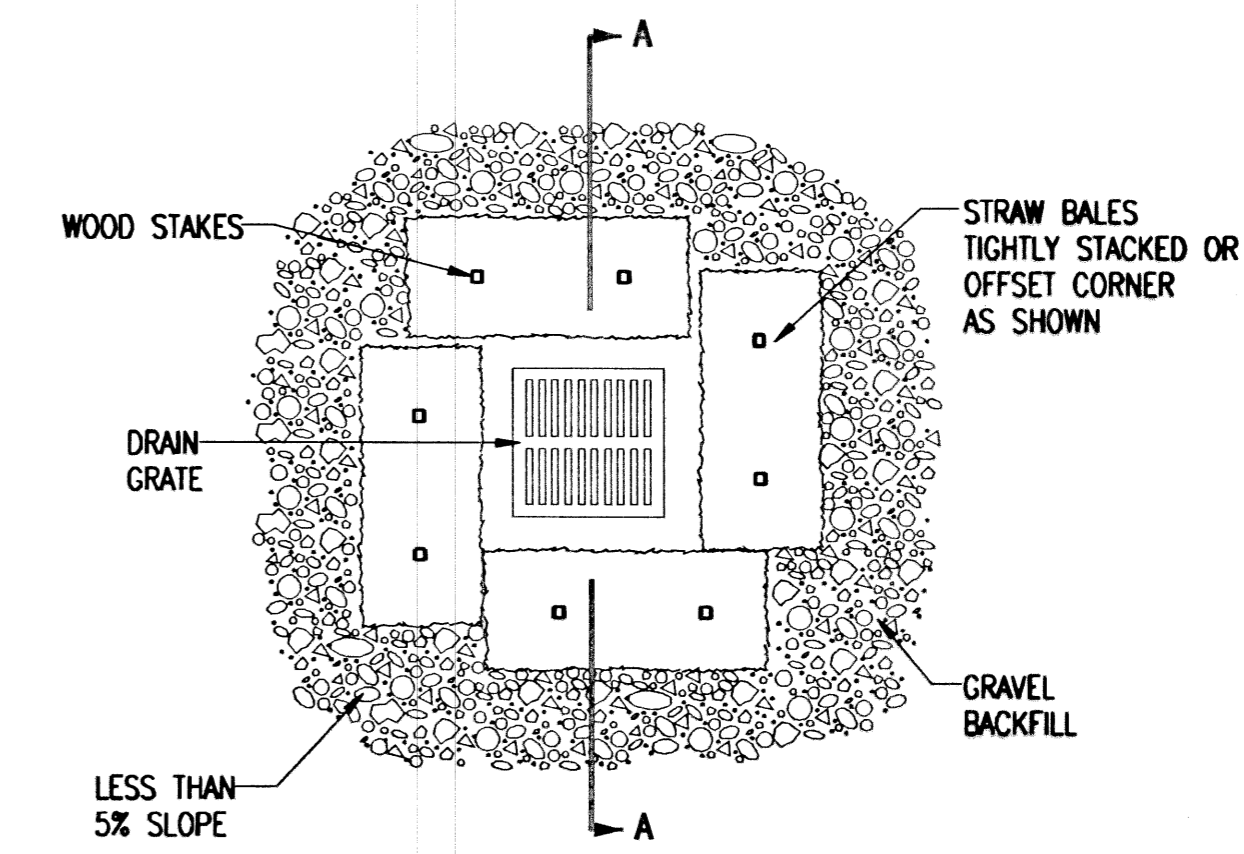
CURB INLET PROTECTION
4" PERFORATED PIPE W/ GRAVEL

NOTE:
PLACE 4" PERFORATED PVC PIPE, FILLED WITH 1/2"-1" DIA. GRAVEL, IN FRONT OF CURB INLET AS SHOWN.

2X4 LENGTH	INLET TYPE	INLET OPENING
5'-6"	1-A	5'-0"
10'-6"	1-A	10'-0"
15'-6"	1-A	15'-0"



SECTION A-A



STRAW BALE BARRIERS FOR AREA INLETS
NO SCALE
(INLET PROTECTION)

MATERIAL SPECIFICATION:

BALE AREA INLET BARRIERS SHOULD BE CONSTRUCTED OF WHEAT STRAW, OAT STRAW, PRAIRIE HAY, OR BROMEGRASS HAY THAT IS FREE OF WEEDS DECLARED NOXIOUS BY THE KANSAS STATE BOARD OF AGRICULTURE. THE STAKES USED TO ANCHOR THE BALES SHOULD BE A HARDWOOD MATERIAL WITH THE FOLLOWING MINIMUM DIMENSIONS: 2" SQUARE (NOMINAL) BY 4' LONG. TWINE SHOULD BE USED TO BIND BALES. THE USE OF WIRE BINDING IS PROHIBITED BECAUSE IT DOES NOT BIODEGRADE READILY.

PLACEMENT:

BALE AREA INLET BARRIERS SHOULD BE PLACED DIRECTLY AROUND THE PERIMETER OF A DROP INLET. WHEN A BALE AREA INLET BARRIER IS LOCATED NEAR AN INLET THAT HAS STEEP APPROACH SLOPES, THE STORAGE CAPACITY BEHIND THE BARRIER IS DRASTICALLY REDUCED. TIMELY REMOVAL OF SEDIMENT MUST OCCUR FOR A BARRIER TO OPERATE PROPERLY IN THIS LOCATION.

PROPER INSTALLATION METHOD:

EXCAVATE A TRENCH AROUND THE PERIMETER OF THE AREA INLET THAT IS AT LEAST 4" DEEP BY A BALE'S WIDTH WIDE. PLACE THE BALES IN THE TRENCH, MAKING SURE THAT THEY ARE BUTTED TIGHTLY. SOME BALES MAY NEED TO BE SHORTENED TO FIT INTO THE TRENCH AROUND THE AREA INLET. TWO STAKES SHOULD BE DRIVEN THROUGH EACH BALE, APPROXIMATELY 6" TO 8" IN FROM THE BALE ENDS. STAKES SHOULD BE DRIVEN AT LEAST 12" INTO THE GROUND. ONCE ALL THE BALES HAVE BEEN INSTALLED AND ANCHORED, PLACE THE EXCAVATED SOIL AGAINST THE RECEIVING SIDE OF THE BARRIER AND COMPACT IT. THE COMPACTED SOIL SHOULD BE NO MORE THAN 3" TO 4" DEEP. NOTE: WHEN A BALE AREA INLET BARRIER IS PLACED IN A SHALLOW MEDIAN DITCH, MAKE SURE THAT THE TOP OF THE BARRIER IS NOT HIGHER THAN THE PAVED ROAD. IN THIS CONFIGURATION, WATER MAY SPREAD ONTO THE ROADWAY CAUSING A HAZARDOUS CONDITION.

LIST OF COMMON PLACEMENT INSTALLATION MISTAKES TO AVOID:

BALES SHOULD BE PLACED DIRECTLY AGAINST THE PERIMETER OF THE AREA INLET. THIS ALLOWS OVERTOPPING WATER TO FLOW DIRECTLY INTO THE INLET INSTEAD OF ONTO NEARBY SOIL CAUSING SCOUR. BALE AREA INLET BARRIERS MUST BE DUG INTO THE GROUND. BALES AT GROUND LEVEL DO NOT WORK BECAUSE THEY ALLOW WATER TO FLOW UNDER THE BARRIER.

INSPECTION AND MAINTENANCE:

BALE AREA INLET BARRIERS SHOULD BE INSPECTED EVERY 7 DAYS AND WITHIN 24 HOURS OF A RAINFALL 1/2" OR MORE. THE FOLLOWING IS A LIST OF QUESTIONS THAT SHOULD BE ADDRESSED DURING EACH INSPECTION:

- DOES WATER FLOW UNDER THE AREA INLET BARRIER?
- DOES WATER FLOW THROUGH SPACES BETWEEN ADJUTING BALES?
- ARE ANY BALES DISLODGED?
- ARE BALES DECOMPOSING DUE TO AGE AND/OR WATER DAMAGE?
- DOES SEDIMENT NEED TO BE REMOVED FROM BEHIND THE AREA INLET BARRIER?

CONSULTANTS:

REVISIONS:	PERMIT SUBMITTAL	DATE	DESCRIPTION
02/24/2012	03/14/2012	03/22/2012	
	ADDENDUM #2		

PROJ NO: P101110436
SCALE: NONE
DATE: 5/24/2012
DESIGNED BY: DLM
DRAWN BY: DLM
CHECKED BY: GEH

SHEET TITLE:
EROSION CONTROL STANDARD DETAILS

SHEET NO.:
C-507

Riprap Apron Design Per Hec 14
After Determining d50, find riprap class & apron length/depth in figure 10-1 of HEC14

OUTLET ST4 = SWALE 1		OUTLET ST9 = SWALE 2	
d	1.5 Pipe Diameter (FT.)	d	1.5 Pipe Diameter (FT.)
q	12 Design Discharge (CFS)	q	17 Design Discharge (CFS)
tw	0.6 Tailwater (Use tw = 0.4D)	tw	0.6 Tailwater (Use tw = 0.4D)
g	32.2 Gravity Constant	g	32.2 Gravity Constant
d50	0.53 Equation 10.4	d50	0.84 Equation 10.4
Actual D50 and Class	10" Class 3	Actual D50 and Class	10" Class 3
Apron Length	7.5 Ft. (See Plans for actual sizes)	Apron Length	7.5 Ft. (See Plans for actual sizes)
Apron Depth	24 Inches	Apron Depth	24 Inches
Total Area	591 SF	Total Area	717 SF

OUTLET ST12 = SWALE 3		OUTLET ST17 = SWALE 4	
d	1.5 Pipe Diameter (FT.)	d	1.5 Pipe Diameter (FT.)
q	9 Design Discharge (CFS)	q	11 Design Discharge (CFS)
tw	0.6 Tailwater (Use tw = 0.4D)	tw	0.6 Tailwater (Use tw = 0.4D)
g	32.2 Gravity Constant	g	32.2 Gravity Constant
d50	0.36 Equation 10.4	d50	0.47 Equation 10.4
Actual D50 and Class	6" Class 2	Actual D50 and Class	6" Class 2
Apron Length	6 Ft. (See Plans for actual sizes)	Apron Length	8 Ft. (See Plans for actual sizes)
Apron Depth	18 Inches	Apron Depth	18 Inches
Total Area	764 SF	Total Area	577 SF

OUTLET ST20 = Into Detention Basin N1		OUTLET ST22 = Detention Basin N1	
d	2 Pipe Diameter (FT.)	d	2.5 Pipe Diameter (FT.)
q	11.8 Design Discharge (CFS)	q	37 Design Discharge (CFS)
tw	0.8 Tailwater (Use tw = 0.4D)	tw	1 Tailwater (Use tw = 0.4D)
g	32.2 Gravity Constant	g	32.2 Gravity Constant
d50	0.26 Equation 10.4	d50	0.72 Equation 10.4
Actual D50 and Class	6" Class 2	Actual D50 and Class	10" Class 3
Apron Length	8.00 Ft. (See Plans for actual sizes)	Apron Length	12.50 Ft. (See Plans for actual sizes)
Apron Depth	6.00 Inches	Apron Depth	10.00 Inches
Total Area	57 SF	Total Area	344 SF

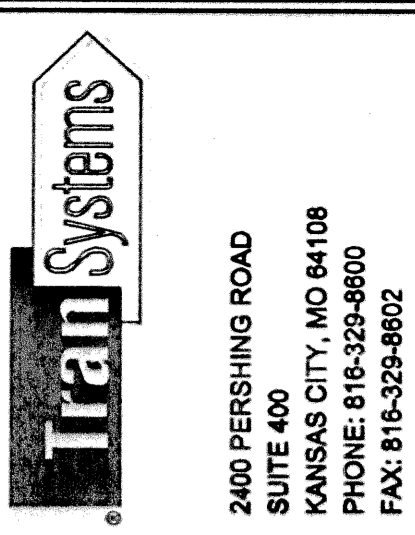
OUTLET ST24 = Detention Basin S1		OUTLET ST26 = Detention Basin S2	
d	2 Pipe Diameter (FT.)	d	2 Pipe Diameter (FT.)
q	12.7 Design Discharge (CFS)	q	16.4 Design Discharge (CFS)
tw	0.8 Tailwater (Use tw = 0.4D)	tw	0.8 Tailwater (Use tw = 0.4D)
g	32.2 Gravity Constant	g	32.2 Gravity Constant
d50	0.29 Equation 10.4	d50	0.41 Equation 10.4
Actual D50 and Class	6" Class 2	Actual D50 and Class	6" Class 2
Apron Length	8 Ft. (See Plans for actual sizes)	Apron Length	8 Ft. (See Plans for actual sizes)
Apron Depth	20 Inches	Apron Depth	20 Inches
Total Area	146 SF	Total Area	284 SF

RIP RAP INFORMATION

**WATER QUALITY TREATMENT
GRASSED SWALES**

	Spreader Weir Length (Add 6' for embedment)	Forebay Top - Length & Width	RIPRAP D50 (INCHES) AND CLASS	RIPRAP DEPTH (INCHES)	Top of Level Spreader	FL US End of Swale	Swale Length	FL at DS End of 0.5% Swale
Total Area to Swale #1, Qvw & WQv								
1.56	25.0	25.0	10	24.0	1322.98	1322.81	110	1322.26
0.963		12.7	CLASS 3					
0.125								
Total Area to Swale #2, Qvw & WQv								
2.38	25.0	25.0	10	24.0	1320.55	1320.38	110	1319.83
0.758		16.0	CLASS 3					
0.151								
Total Area to Swale #3, Qvw & WQv								
1.36	30.0	30.0	6	20.0	1322.95	1322.78	60	1322.48
0.832		15.0	CLASS 2					
0.095								
Total Area to Swale #4, Qvw & WQv								
1.75	24.0	24.0	6	20.0	1322.32	1322.15	90	1321.70
0.863		14.0	CLASS 2					
0.126								

SWALE INFORMATION



CONSULTANTS:

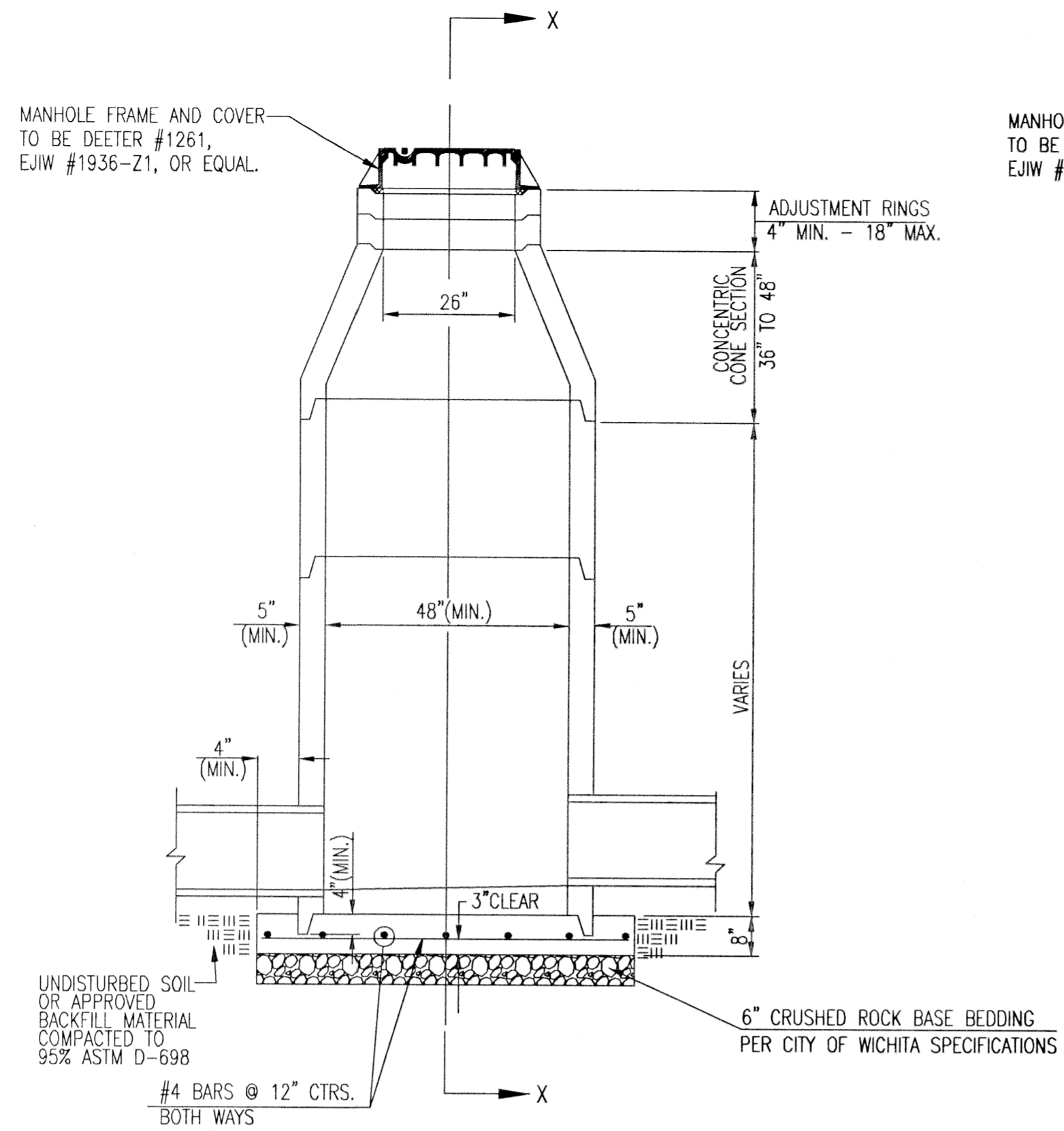


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02/24/2012	PERMIT SUBMITTAL	
03/14/2012	REVISED PER COMMENTS	
03/22/2012	ADDENDUM #2	

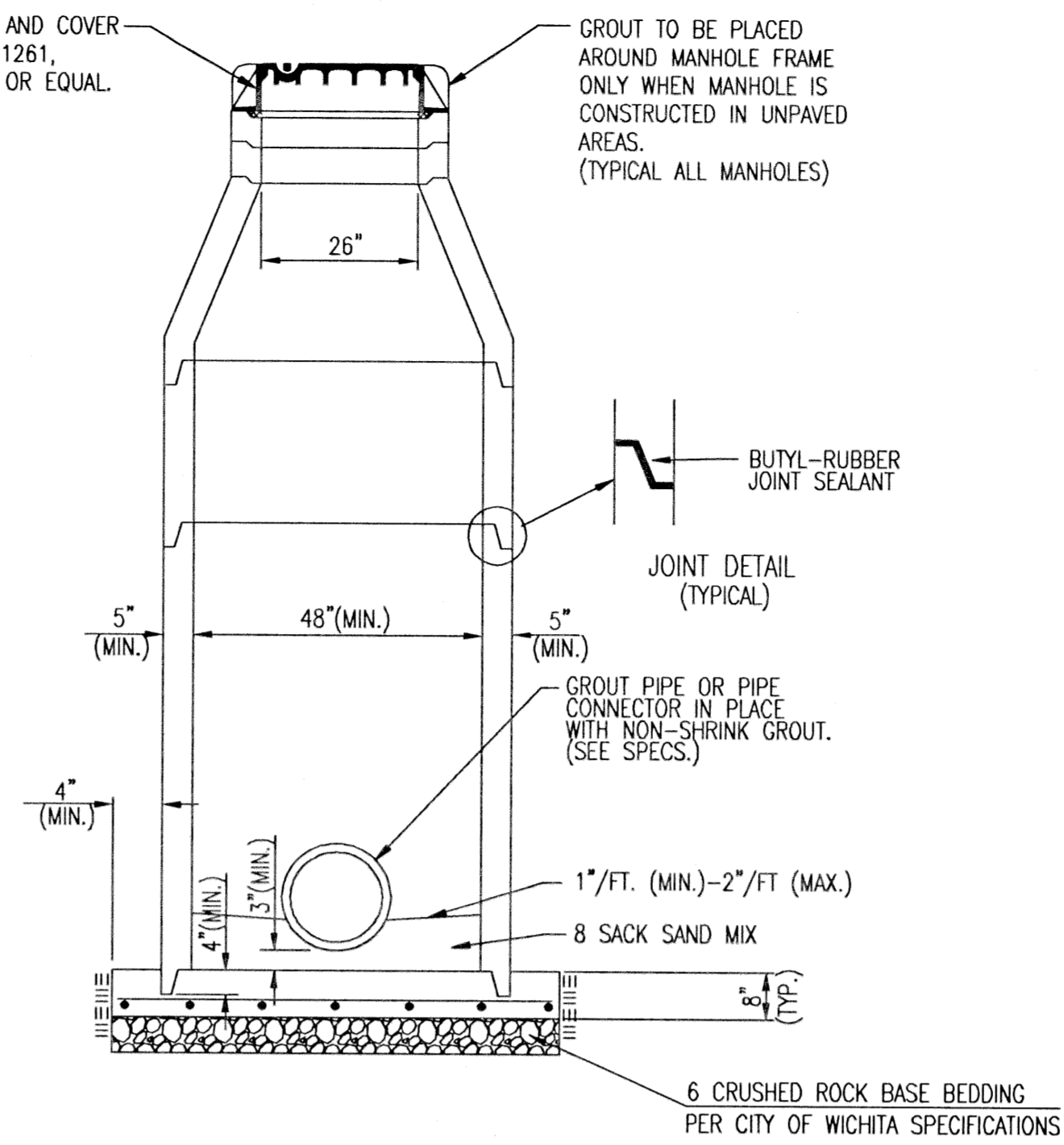
PROJ NO: P101110436
SCALE: NONE
DATE: 5/24/2012
DESIGNED BY: DLM
DRAWN BY: DLM
CHECKED BY: GEH

SHEET TITLE:
RIPRAP AND SWALE INFORMATION TABLES

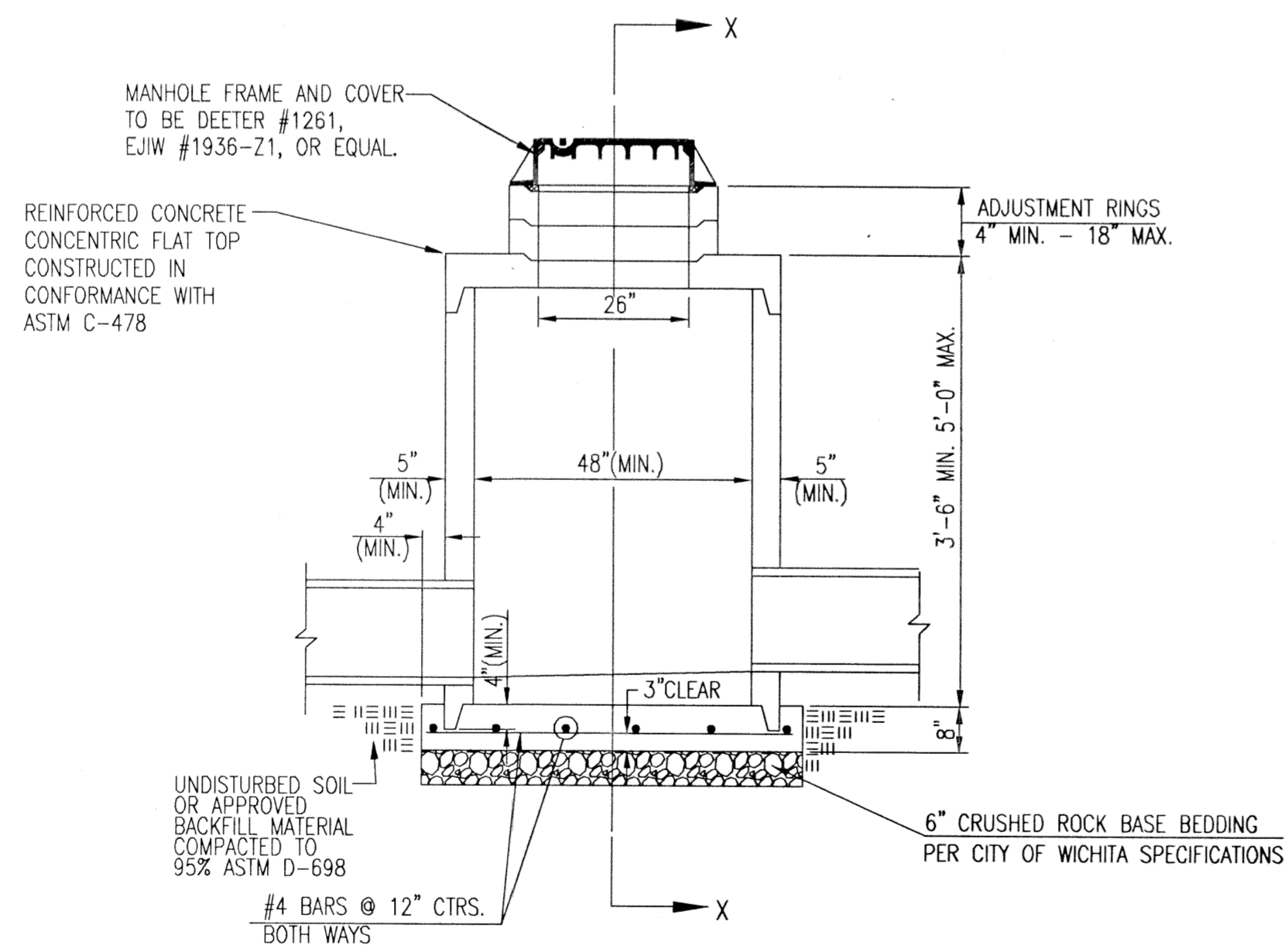
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C-508



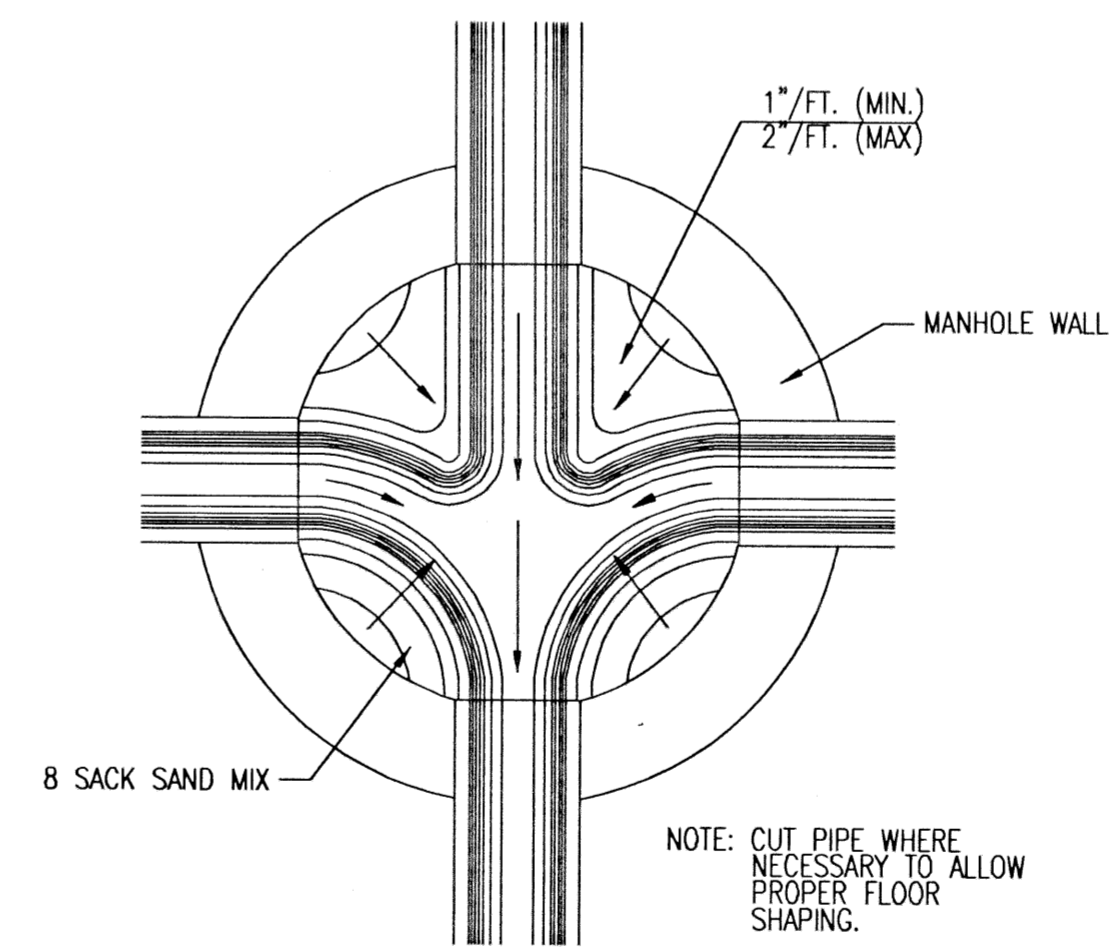
PRECAST STANDARD MANHOLE TYPE "A"



SECTION X-X (TYPICAL)



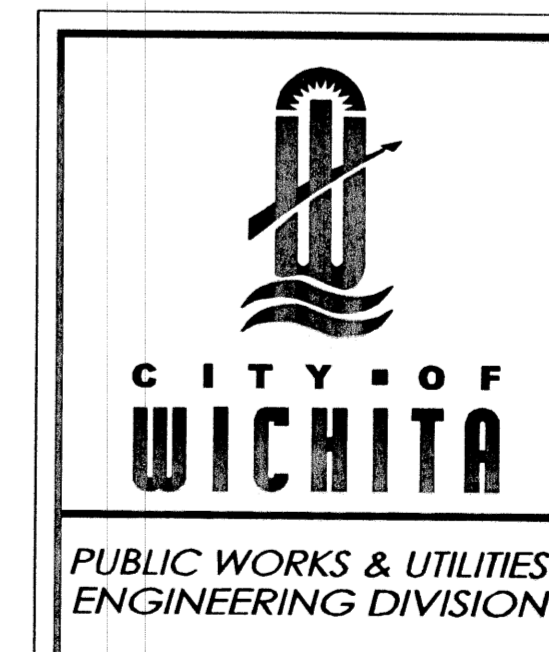
PRECAST SHALLOW MANHOLE TYPE "B"



TYPICAL MANHOLE FLOOR SHAPING

GENERAL NOTES

- IF, IN THE OPINION OF THE ENGINEER, THE MANHOLE SUBGRADE APPEARS UNSTABLE, THE CONTRACTOR WILL HAVE THE OPTION TO COMPACT SUBGRADE AS SHOWN OR INCREASE THE THICKNESS OF THE MANHOLE BASE AS DIRECTED BY THE ENGINEER.
- STEEL REINFORCING WILL BE REQUIRED IN ALL MANHOLE BASES.
- ALL MANHOLE CONSTRUCTION SHALL BE WATER TIGHT.
- TOP OF MANHOLE FLOOR SLAB SHALL BE AT LEAST 3 INCHES BELOW THE FLOW LINE OF THE OUTLET PIPE TO INSURE SUFFICIENT MINIMUM THICKNESS OF SHAPED INVERT.
- ALL PRECAST CONCRETE MANHOLE SECTIONS SHALL CONFORM TO THE LATEST REVISION OF ASTM C-478 AS MODIFIED BY THE SPECIFICATIONS.
- CONCRETE USED FOR MANHOLE CONSTRUCTION SHALL CONFORM TO CITY OF WICHITA SPECIFICATIONS FOR CONCRETE PAVEMENT MIX.
- PRECAST MANHOLES SHALL BE SET AT LEAST 4 INCHES INTO MANHOLE BASE.
- MANHOLES WITH PIPE SIZES 24" AND LARGER SHALL HAVE 5 FOOT INSIDE DIAMETER (MIN.).
- MANHOLES WITH PRECAST BASES MAY BE USED AT THE CONTRACTORS OPTION. THESE MANHOLES SHALL HAVE AN 8" MINIMUM BASE THICKNESS AND SHALL BE PLACED ON AN 8" MIN. CRUSHED ROCK BASE. PIPES SHALL BE ENCASED WITH CRUSHED ROCK TO AT LEAST 3 FEET FROM THE MANHOLE WALL.
- CONTRACTOR SHALL REMOVE LIFTING HOOKS AFTER INSTALLATION. RECESSES IN MANHOLE WALL SHALL BE GROUTED FLUSH TO THE MANHOLE WALL WITH HYDRAULIC CEMENT AFTER THE MANHOLE IS IN PLACE. LIFTING HOLES THRU THE MANHOLE WALL WILL NOT BE ACCEPTED.
- THE ENDS OF ALL PIPES IN MANHOLES SHALL BE CUT OFF FLUSH WITH THE INSIDE FACE OF THE MANHOLE WALL.
- MANHOLE INVERT SHALL BE SHAPED WITH 8 SACK SAND MIX CONCRETE TO CREATE FLOW CHANNELS AND TO INCREASE HYDRAULIC EFFICIENCY SUCH THAT THE MANHOLE WILL BE SELF CLEANING BETWEEN ALL INLET AND/OR OUTLET PIPES.
- MANHOLE FRAME AND COVER TO BE DEETER #1261, EIJW #1936-21, OR APPROVED EQUAL, SEE SW-303.
- FOR FLAT GRATED INLET APPLICATION, GRATE TO BE DEETER #1933, EIJW #1205 MDI, OR APPROVED EQUAL.
- FOR BEEHIVE GRATE APPLICATION, GRATE TO BE DEETER #4495, EIJW #120545, OR APPROVED EQUAL.



PRECAST CONCRETE MANHOLE (STORM SEWER)		
CITY ENGINEER JAMES L. ARMOUR, P.E., L.S.		
PROJECT NUMBER	OCA NUMBER	DATE
		11/2010
CITY ENGINEER'S OFFICE CITY HALL - SEVENTH FLOOR 455 NORTH MAIN STREET WICHITA, KANSAS 67202-1620 (316) 268-4501		DESIGN DRAWN
		SHEET of

Tran Systems
2400 PERSHING ROAD
SUITE 400
KANSAS CITY, MO 64108
PHONE: 816-323-8800
FAX: 816-323-8802

CONSULTANTS:

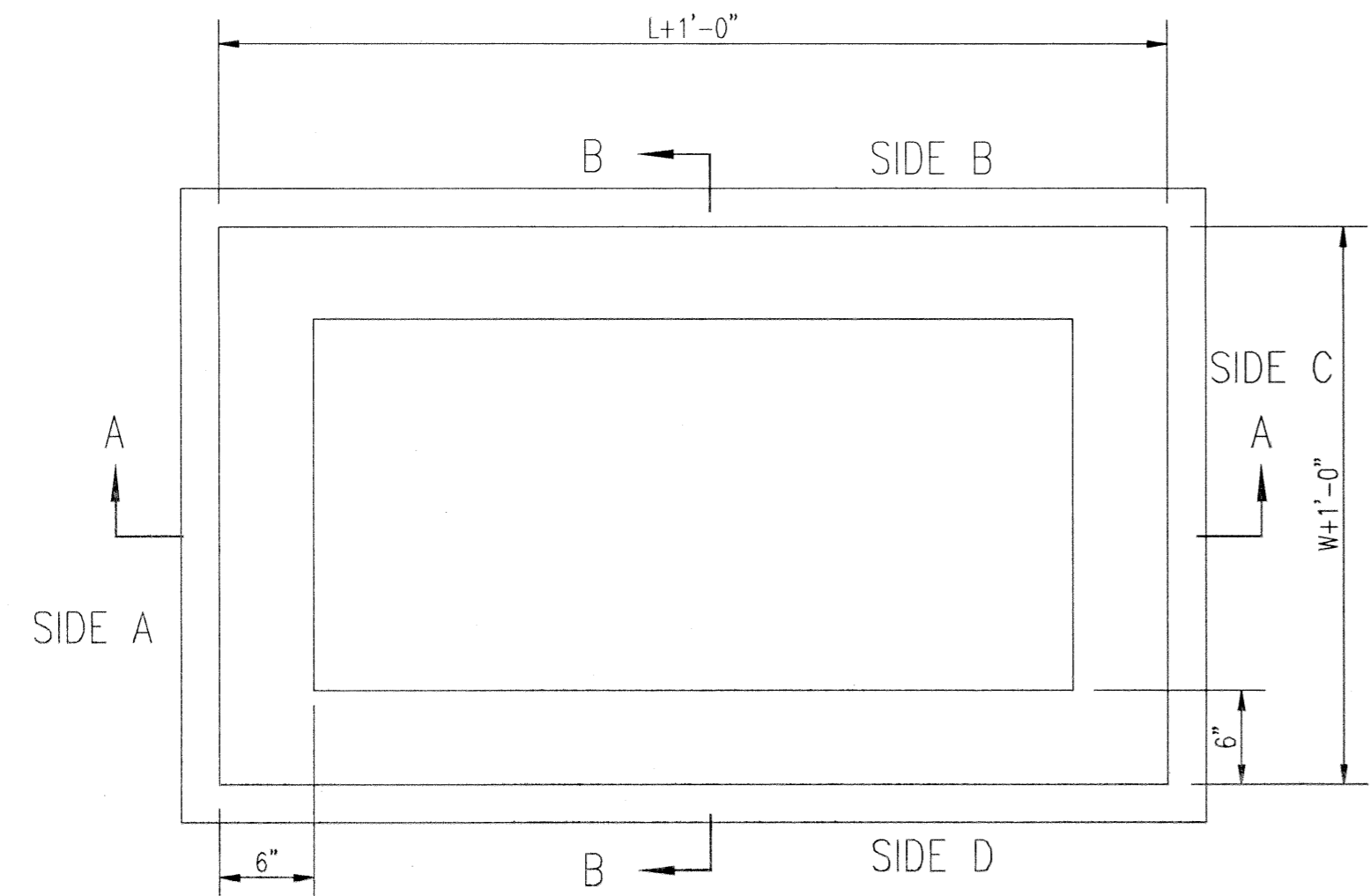
INLAND TRUCK PARTS
NEW SERVICE STATION
WICHITA, KANSAS
INLAND TRUCK PARTS COMPANY
An Employee Owned Company

REVISIONS:	DATE	DESCRIPTION
02/24/2012		PERMIT SUBMITTAL
03/14/2012		REVISED PER COMMENTS
02/22/2012		ADDENDUM #2

PROJ NO: P101110436
SCALE: NONE
DATE: 5/24/2012
DESIGNED BY: DLM
DRAWN BY: DLM
CHECKED BY: GEH

SHEET TITLE:
PRECAST CONCRETE MANHOLE DETAIL

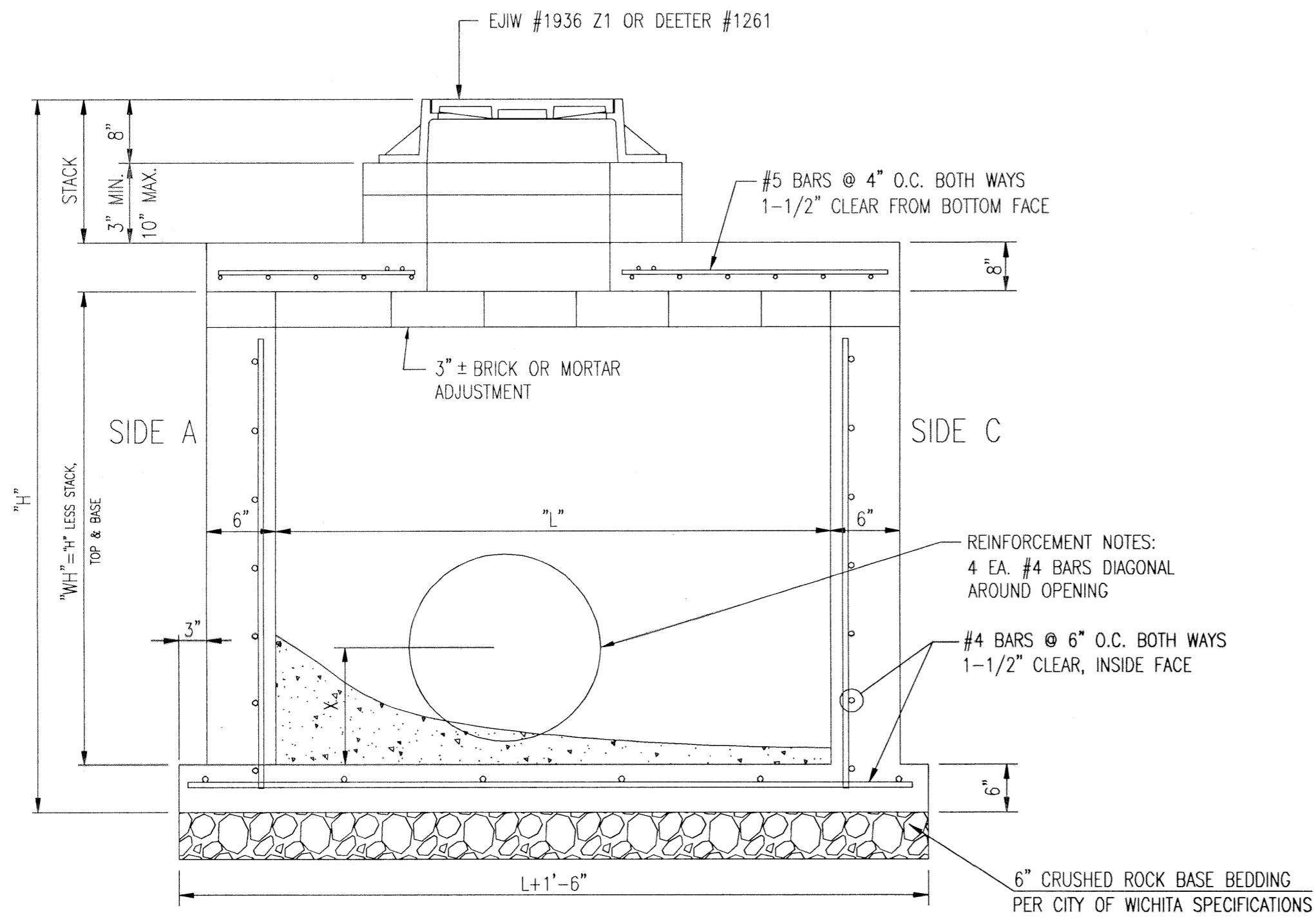
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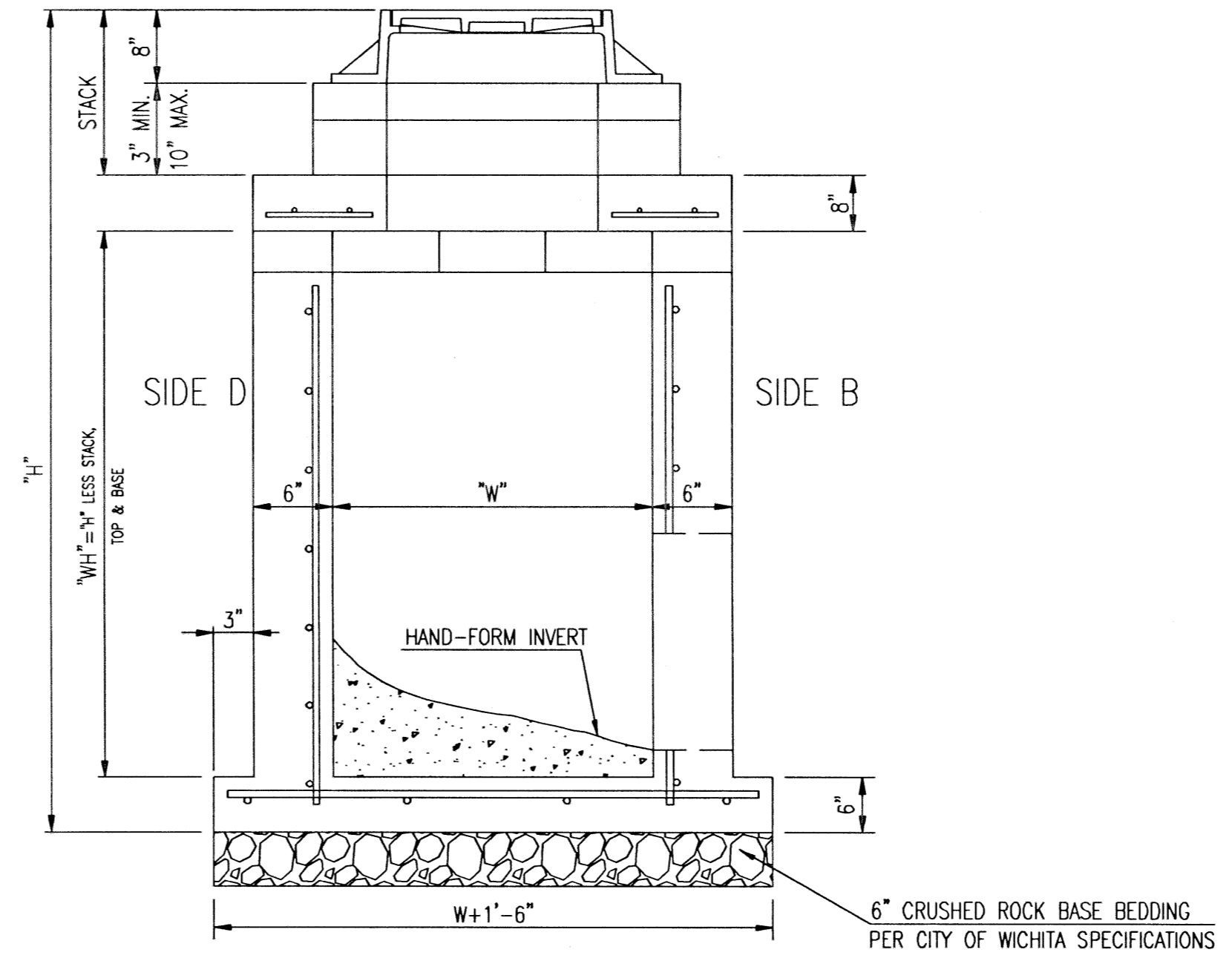
TOP VIEW

GENERAL NOTES

1. GRATE FRAME TO BE INSTALLED ON THIN MORTAR CUSHION TO INSURE FULL SUPPORT ALONG BRICK. CONCRETE USED FOR INLET CONSTRUCTION SHALL CONFORM TO CITY OF WICHITA SPECIFICATIONS FOR CONCRETE PAVEMENT MIX.
2. INLET INVERT SHALL BE SHAPED WITH 8 SACK SAND MIX CONCRETE TO CREATE FLOW CHANNELS AND TO INCREASE HYDRAULIC EFFICIENCY SUCH THAT THE INLET WILL BE SELF CLEANING BETWEEN ALL INLET AND/OR OUTLET PIPES.
3. THE ENDS OF ALL PIPES INSTALLED IN INLETS SHALL BE CUT OFF FLUSH WITH THE INSIDE FACE OF THE INLET WALL.
4. INLET FRAME AND GRATE TO BE DEETER #1261, EJIW #1936-Z1 OR APPROVED EQUAL, SEE SW-303.
5. CONTRACTOR SHALL REMOVE LIFTING HOOKS AFTER INSTALLATION. RECESSES IN MANHOLE WALL SHALL BE GROUTED FLUSH TO THE MANHOLE WALL WITH HYDRAULIC CEMENT AFTER THE MANHOLE IS IN PLACE. LIFTING HOLES THRU THE MANHOLE WALL WILL NOT BE ACCEPTED.



SECTION "A-A"



SECTION "B-B"

<p>CITY OF WICHITA PUBLIC WORKS & UTILITIES ENGINEERING DIVISION</p>	REINFORCED CONCRETE MANHOLE (STORM SEWER)		
	CITY ENGINEER JAMES L. ARMOUR, P.E., L.S.		
	PROJECT NUMBER	OCA NUMBER	DATE
			11/2010
CITY ENGINEER'S OFFICE CITY HALL - SEVENTH FLOOR 435 NORTH MAIN STREET WICHITA, KANSAS 67202-1620 (316) 268-4501		DESIGN	DRAWN
		SHEET - of -	

CONSULTANTS:

INLAND TRUCK PARTS
NEW SERVICE STATION
WICHITA, KANSAS
**INLAND TRUCK
PARTS COMPANY**
'An Employee Owned Company'

REVISIONS:	DATE	DESCRIPTION
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03/14/2012	REVISED PER COMMENTS	
03/22/2012	ADDENDUM #2	

PROJ NO: P101110436
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DESIGNED BY: DLM
DRAWN BY: DLM
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SHEET TITLE: REINFORCED CONCRETE MANHOLE DETAIL
SHEET NO. C-510
SHEET OF

dlmason 5/24/2012 1:57:30 PM - C:\p1\104939\dwg\RETRSC-51-D11.dwg