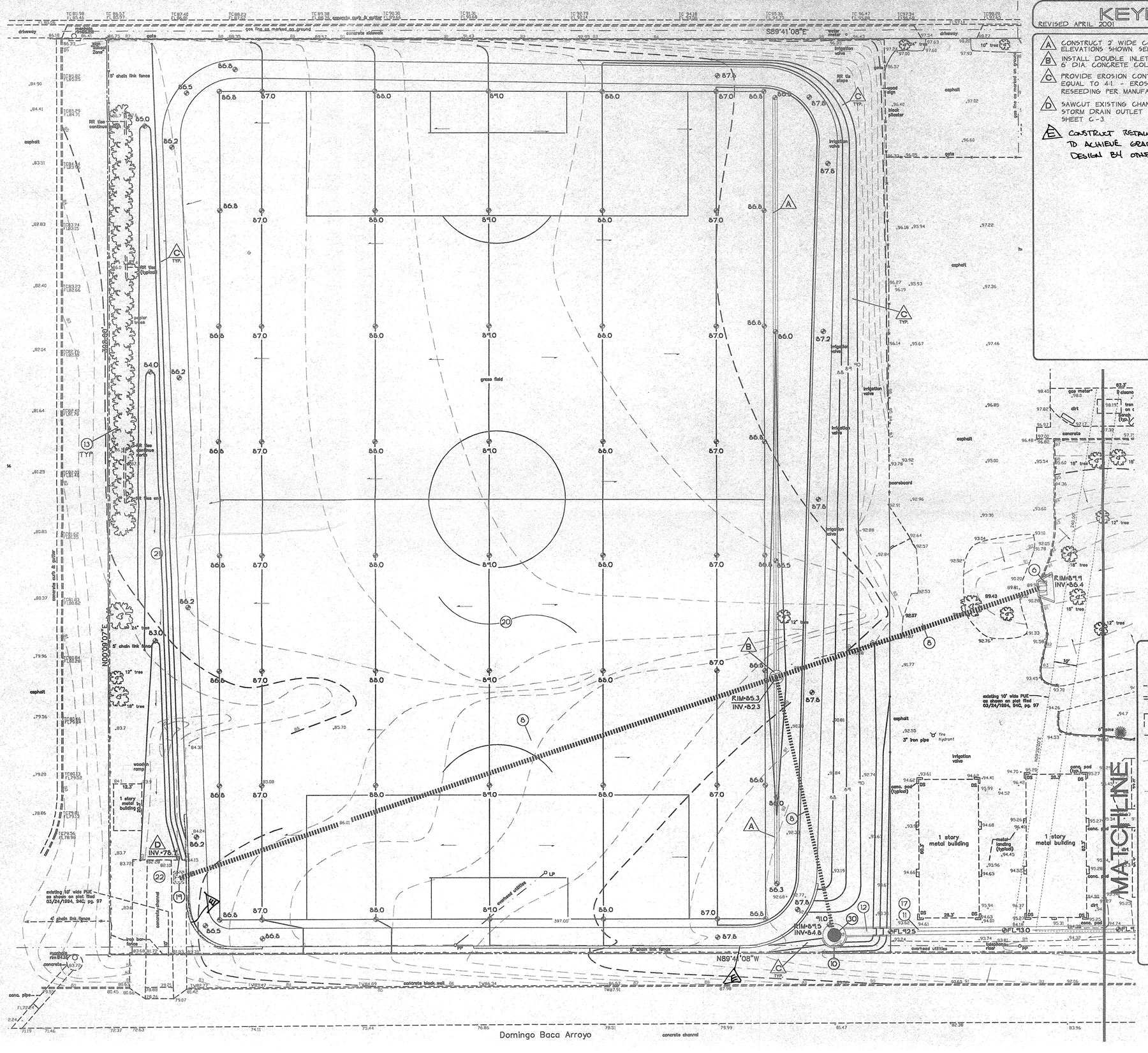


KEYNOTES

REVISED APRIL 2001

A. CONSTRUCT 2' WIDE CONCRETE RUNDOWN AT FLOWLINE ELEVATIONS SHOWN. SEE DRAINAGE DETAILS SHEET C-5.

B. INSTALL DOUBLE INLET CATCH BASIN WITH GRATE AND 6' DIA. CONCRETE COLLAR PER DETAIL SHEET C-3.

C. PROVIDE EROSION CONTROL ON ALL SIDESLOPES > OR EQUAL TO 4:1 - EROSION CONTROL FABRIC WITH RESEEDING PER MANUFACTURER'S RECOMMENDATIONS.

D. SAWCUT EXISTING CHANNEL CONCRETE AND CONSTRUCT STORM DRAIN OUTLET (DOUBLE GRATE) PER DETAIL SHEET C-3.

E. CONSTRUCT RETAINING WALL THIS AREA TO ACHIEVE GRADE DIFFERENCES SHOWN. DESIGN BY OTHERS.

KEYNOTES

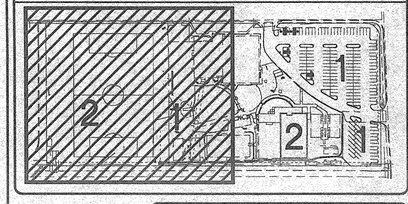
1. CONSTRUCT COA MEDIAN CURB AND GUTTER (COA STD. DETAIL 2415) WHERE CONCENTRATED FLOWS ARE CARRIED AND AS NOTED.
2. GRADE A SHALLOW SWALE WITHIN LANDSCAPING AT ELEVATIONS SHOWN TO DIRECT FLOWS TO PROPOSED INLETS, SIDEWALK CULVERTS, LOW POINTS.
3. CONSTRUCT CONCRETE WALK / PATIO THIS AREA AT GRADES SHOWN. SEE ARCHITECTURAL FOR ADD'L INFO.
4. CONSTRUCT 1' BOTTOM WIDTH SIDEWALK CULVERT AT ELEVATIONS SHOWN TO ALLOW CONCENTRATED FLOWS TO PASS. SEE DETAIL SHEET C3 FOR ADD'L INFO.
5. ~~INSTALL SINGLE INLET CATCH BASIN WITH GRATE AND CONCRETE COLLAR PER STORM SEWER DETAIL SHEET C-3~~ DELETED
6. INSTALL TRIPLE INLET CATCH BASIN WITH GRATE, CONCRETE COLLAR AND CONCRETE HEADWALL PER STORM SEWER DETAIL SHEET C-3
7. ~~INSTALL 4' DIAMETER STORM DRAIN MANHOLE PER STORM SEWER DETAIL~~ DELETED TYP.
8. INSTALL STORM DRAIN PIPE WITH INVERTS AS SHOWN. SEE STORM DRAIN DETAIL SHEET C3 FOR DETAILS, INVERTS, SLOPES, ETC.
9. TOP OF PROPOSED WALKS THIS AREA TO MATCH TOP OF EXISTING WALKS FOR SMOOTH TRANSITION.
10. CONSTRUCT RETAINING / EXTENDED STEMWALLS AS REQUIRED TO ACHIEVE GRADE DIFFERENCES SHOWN. SEE ARCHITECTURAL FOR ADD'L INFO.
11. CONSTRUCT 6" DEPRESSED CONCRETE 'V' GUTTER TO CARRY CONCENTRATED FLOWS AS SHOWN. SAWCUT ASPHALT / CONCRETE AS REQUIRED TO CONSTRUCT. WIDTH WILL VARY TO PROVIDE SMOOTH TRANSITION TO ADJOINING PAVEMENT. SEE SHEET C3 FOR DETAILS.
12. CONSTRUCT 'V' SHAPED CONCRETE RUNDOWN TO DIRECT CONCENTRATED VALLEY GUTTER FLOWS TO STORM DRAIN MANHOLE INLET. SEE SHEET C3 FOR DETAILS.
13. EXISTING TREE(S) THIS AREA TO REMAIN. CONTRACTOR TO MINIMIZE REGRADING WITHIN TREE CANOPY AREA. SEE ARCHITECTURAL FOR ADDITIONAL INFORMATION.
14. ROOF FLOWS FROM THE PROPOSED BUILDING WILL BE DIRECTED TO THE SOUTHEAST CORNER AND RELEASED INTO THE PROPOSED VALLEY GUTTER.
15. CONSTRUCT HEADER CURB (COA STD. DETAIL 2415) WHERE NO CONCENTRATED FLOWS ARE CARRIED AND AS NOTED. (OWNER'S OPTION)
16. FIELD ADJUST GRADES THIS AREA AS REQUIRED TO ACHIEVE OVERALL SMOOTH TRANSITION.
17. SAWCUT / REMOVE AND REPLACE EXISTING ASPHALT PAVEMENT AS REQUIRED TO INSTALL STORM SEWER LINE, CONCRETE VALLEY GUTTER AND INLETS.
18. CONSTRUCT 3' DEPRESSED CONCRETE VALLEY GUTTER TO DIRECT CONCENTRATED FLOWS TO PROPOSED INLET. SAWCUT EXISTING ASPHALT AS REQUIRED TO CONSTRUCT. ~~SEE SHEET C3 FOR DETAILS.~~ DELETED
19. SEE STORM DRAIN OUTLET PIPE DETAIL - SHEET C4
20. REGRADE SOCCER FIELD TO GRADES SHOWN. SEE ARCHITECTURAL FOR ADDITIONAL INFORMATIN.
21. CONSTRUCT GRADED SWALE AT ELEVATIONS SHOWN. THIS AREA TO DIRECT FLOWS TO THE EXISTING CONCRETE CHANNEL ACCESS TO THE DOMINGO BACA ARROYO.
22. EXISTING CONCRETE CHANNEL ACCESS TO THE DOMINGO BACA ARROYO.
23. CONSTRUCT 'V' SHAPED CONCRETE CHANNEL WITHIN ISLAND AT FLOWLINE ELEVATIONS SHOWN TO ALLOW FLOWS TO PASS. MIN. 1' BOTTOM WIDTH.
24. PROVIDE A 3' WIDE OPENING IN CURB THIS AREA TO ALLOW PARKING LOT FLOWS TO PASS TO PROPOSED VALLEY GUTTER.
25. SHALLOW SWALE WITHIN ASPHALT PAVEMENT.
26. SPOT ELEVATIONS WITHIN PAVEMENT REFERENCE FLOWLINE ELEVATION. ADD 0.5 FOR TOP OF ADJACENT WALK / CURB INFORMATION. (TYPICAL)

KEYED NOTES CONTINUE NEXT SHEET

LEGEND

- SIDEWALK, CURB AND GUTTER (EXISTING, PROPOSED)
- BUILDING EXIST / PROPOSED
- PROPERTY LINE
- 85.7 EXISTING SPOT ELEV
- 22 EXISTING CONTOUR
- ⊕ 75.2 PROPOSED SPOT ELEV
- 30 PROPOSED CONTOUR
- SURFACE FLOW EXIST. PROPOSED, ROOF
- LA LANDSCAPED AREA
- TA TOP OF ASPHALT
- TG TOP OF GRATE
- TC TOP OF CURB
- FL FLOW LINE
- FF FINISHED FLOOR
- R/W RIGHT OF WAY
- PL PROPERTY LINE
- PP POWER POLE

SITE KEY / PHASING



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APR 25 2001
HYDROLOGY SECTION

Revisions

HOPE CHRISTIAN SCHOOL CAMPUS ADDITIONS

Genesis

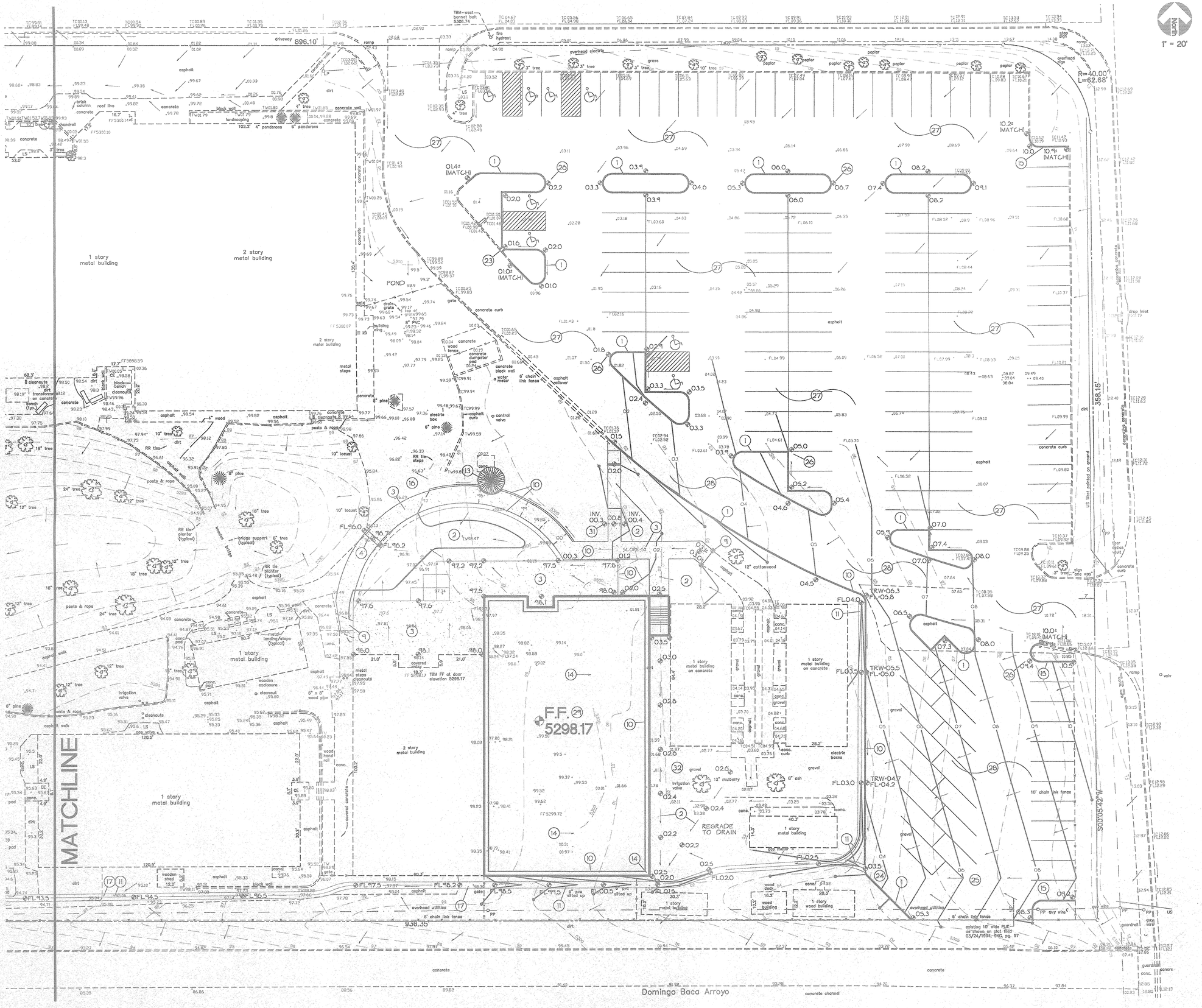
Scale	Drawn By	Checked By	Job Number	Date
1" = 20'	BJP	CLW		APRIL 11, 2001

Drainage and Grading Plan

C-1

SH. 1 OF 2

DG\ Revisions 041201.dwg 04/20/01 15:35:30



1" = 20'

KEYNOTES

(27) PAVEMENT THIS AREA TO BE PATCHED / RESURFACED. MAINTAIN EXISTING FLOWPATHS, ELIMINATE ALL BIRDBATHS, GRIND EXISTING ASPHALT AT ALL CURBS AND WALKS TO MAINTAIN 0 ELEVATION DIFFERENCE.

(26) NEW ASPHALT PAVEMENT THIS AREA. MATCH TOP OF ADJACENT RESURFACED ASPHALT FOR SMOOTH RIDING TRANSITION.

(29) PROPOSED BUILDING ADDITION

(30) INSTALL 6' DIAMETER STORM DRAIN MANHOLE INLET PER STORM SEWER DETAIL SHEET C-3.

(31) PROVIDE 4" PVC PIPE THROUGH WALK AT INVERT ELEVATIONS SHOWN TO ALLOW FLOWS TO PASS.

(32) RAISE GRADES THIS AREA TO ELEVATIONS SHOWN TO PROVIDE POSSITIVE DRAINAGE TO PROPOSED VALLEY GUTTER.

GENERAL NOTES

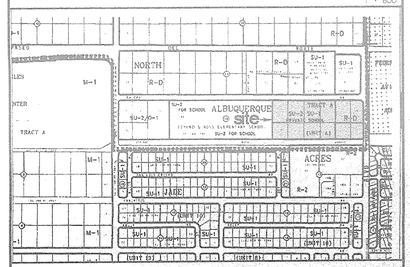
(A) SEE ARCHITECTURAL PLANS FOR ALL SITE PLAN INFORMATION AND DIMENSIONS

(B) SEE ARCHITECTURAL PLANS FOR SITE DEMOLITION INFORMATION.

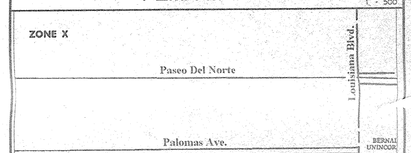
(C) ALL RIP-RAP TO BE MIN. 6" DIA. ANGULAR RIP RAP.

(D) SEE ARCHITECTURAL PLANS FOR PAVEMENT RESTRIPING, NEW SPEED BUMP LOCATIONS, NEW FENCE AND GATE LOCATIONS, ETC.

VICINITY MAP



FEMA MAP



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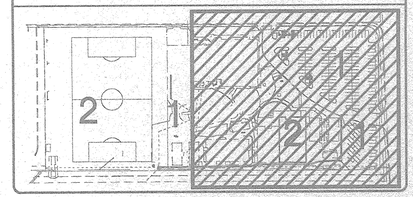

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Revisions

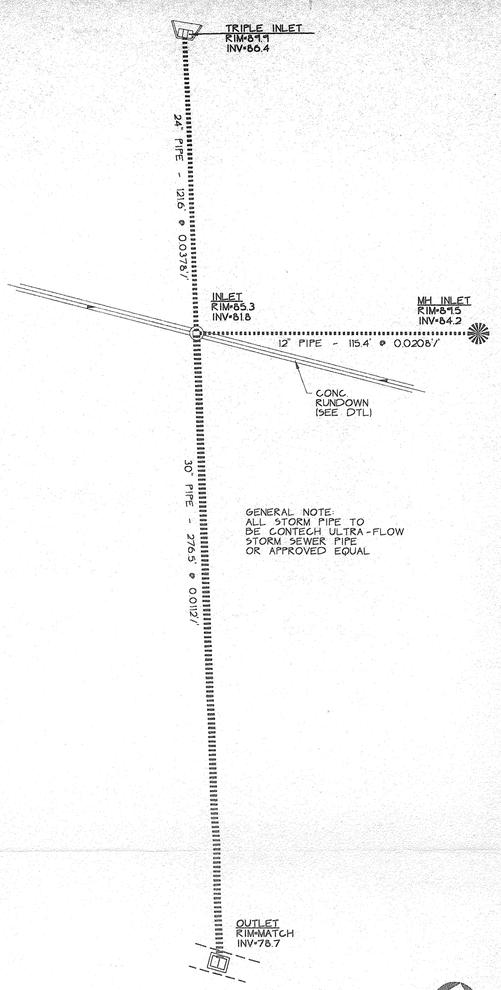
HOPE CHRISTIAN SCHOOL CAMPUS ADDITIONS

Genesis

Scale:	Drawn By:	Checked By:	Job Number:	Date:
1" = 20'	BJD	CLW		JULY 2000

Drainage and Grading Plan

C-2
SH. 2 OF 3

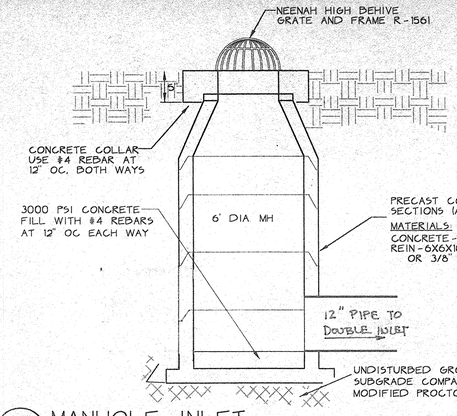


GENERAL NOTE:
ALL STORM PIPE TO BE CONTECH ULTRA-FLOW STORM SEWER PIPE OR APPROVED EQUAL

G STORM DRAIN PLAN

N.T.S.

-SEE DRAINAGE/GRADING PLAN FOR LEGEND
-DISTANCES ARE CENTER TO CENTER



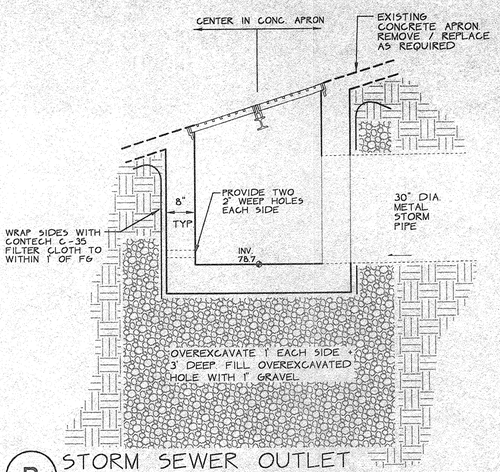
NOTE: FOR STANDARD 4' DIAMETER STORM SEWER MANHOLES PER KEYED NOTE 7, SEE C.O.A. STD. DWG. 2101.

GENERAL NOTES

1. USE STANDARD CAST IRON FRAME AND COVER (TOTAL WEIGHT = 325 LBS-531) WITH "STORM SEWER" CAST ON COVER. FRAME SHALL HAVE TAB TO PREVENT LATERAL MOVEMENT.
2. CONCRETE PIPE SUPPORTS SHALL EXTEND OUTSIDE OF MANHOLE OF FIRST JOINT AS SHOWN AND SHALL CRADLE PIPE TO SPRING LINE.
3. INVERT ELEVATIONS AND DROP OF INVERT THROUGH MANHOLE SHALL BE ACCORDING TO PLANS.

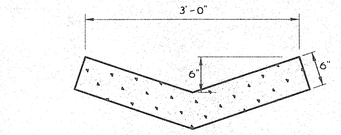
A MANHOLE INLET

N.T.S.

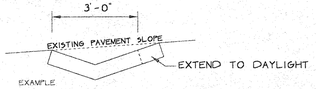


B STORM SEWER OUTLET

SEE INLET DETAIL THIS SHEET FOR STRUCTURAL INFO. N.T.S.

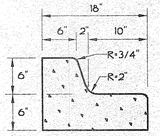


GENERAL NOTE: MAINTAIN 3:1 GUTTER SIDE SLOPE THROUGHOUT. ALTER WIDTH AS REQUIRED IN AREAS OF PAVING REMOVAL. EXTEND CONCRETE TO DAYLIGHT.



C 'V' GUTTER

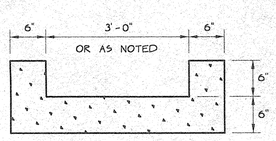
N.T.S.



PROVIDE CONTRACTION JOINTS @ 10' O.C.

D CURB AND GUTTER

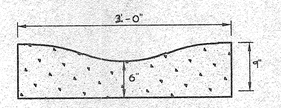
N.T.S.



PROVIDE CONTRACTION JOINTS @ 10' O.C.

E 'U' SHAPED CHANNEL

N.T.S.

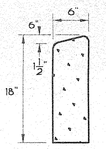


SILICON SEALED CONSTRUCTION CONTROL JOINTS @ 5' O.C.

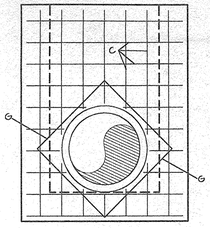
USE 4000 PSI @ 28 DAY AIR ENTRAINED P.C.C.

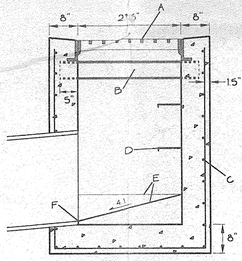
F CONCRETE RUNDOWN

EAST OF SOCCER FIELD N.T.S.



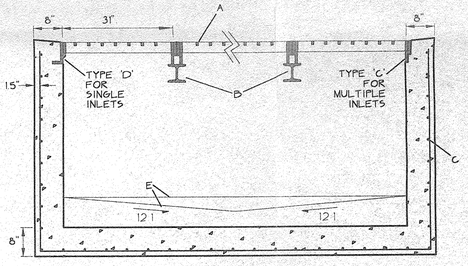
PROVIDE CONTRACTION JOINTS @ 10' O.C.





SECTION B-B

A. NEENAH R-3531 INLET FRAME AND GRATE
B. CENTER SUPPORT ASSEMBLY FOR MORE THAN ONE GRATE (USE 5X5 WF 18.5 FLANGE BEAM).
C. NO. 4 BARS AT 6" O.C. EACH WAY
D. STANDARD ALUMINUM MH STEPS FOR INLETS GREATER THAN 4' DEPTH. 12" APART.
E. CONCRETE FILL AT SLOPE SHOWN (END UNIT ONLY)
F. INVERT PER DESIGN
G. NO. 4 BARS (8 EACH)



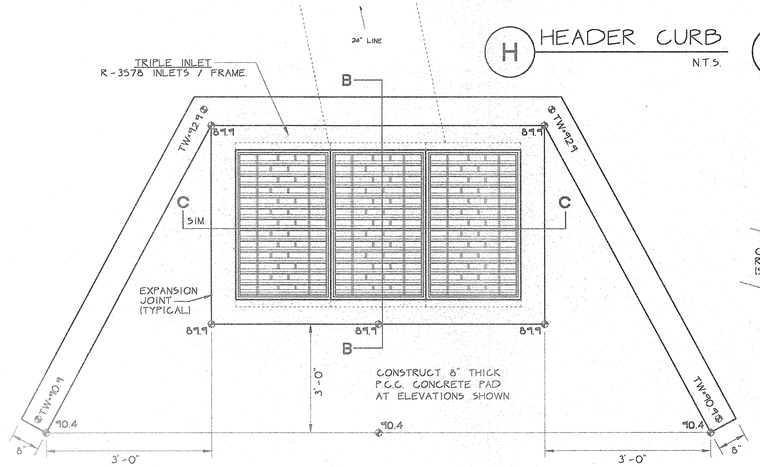
SECTION C-C

H HEADER CURB

N.T.S.

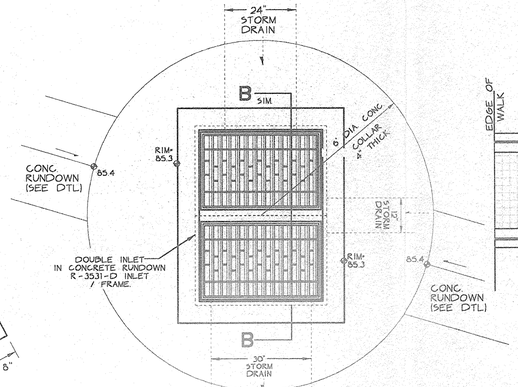
I STORM SEWER INLET CONSTRUCTION - STRUCTURAL INFORMATION

N.T.S.



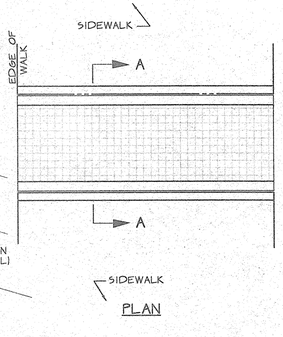
J TRIPLE INLET PLAN

SEE DETAIL THIS SHEET FOR STRUCTURAL INFORMATION N.T.S.



K SINGLE INLET PLAN

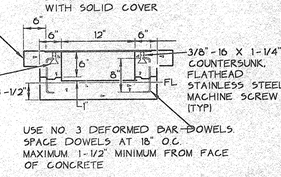
SEE DETAIL THIS SHEET FOR STRUCTURAL INFO.



PLAN

MATCH NEAREST CONTROL JOINT - INSTALL 1/2" EXPANSION JOINT

FOR SECURING PLATE, USE 1" X 5" STAINLESS STEEL ROD ANCHOR - RED HEAD MULTI-SET II SRM-38 ANCHOR. INSTALL PER MANUFACTURER'S INSTRUCTIONS AT 24" O.C. MAXIMUM. USE A MINIMUM OF 2 PER SIDE AND ONE WITHIN 6" OF EACH END



USE NO. 3 DEFORMED BAR DOWELS SPACE DOWELS AT 18" O.C. MAXIMUM. 1-1/2" MINIMUM FROM FACE OF CONCRETE

SECTION A-A

L SIDEWALK CULVERT

NTS

KEYNOTES

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Revisions

HOPE CHRISTIAN SCHOOL CAMPUS ADDITIONS

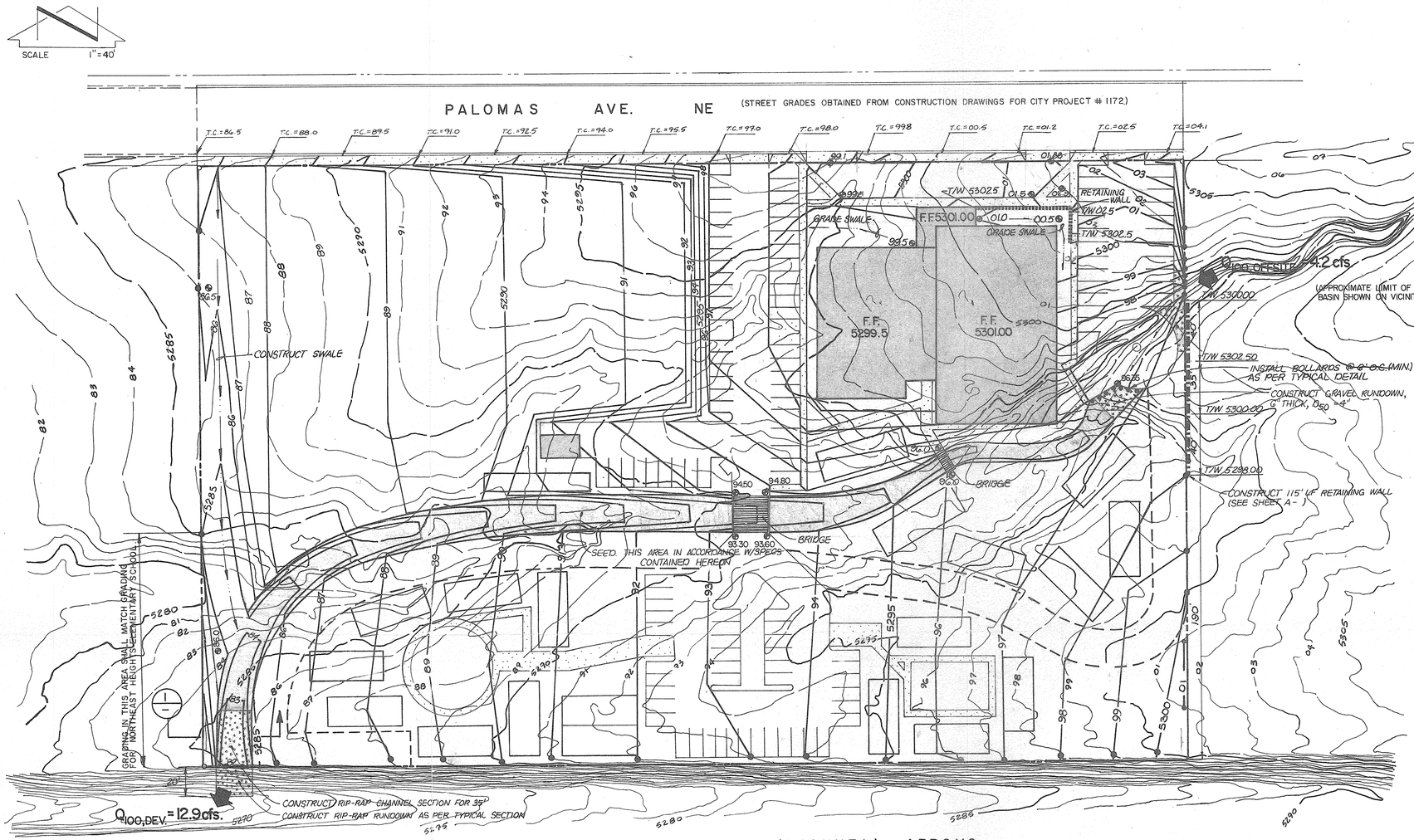
Genesis

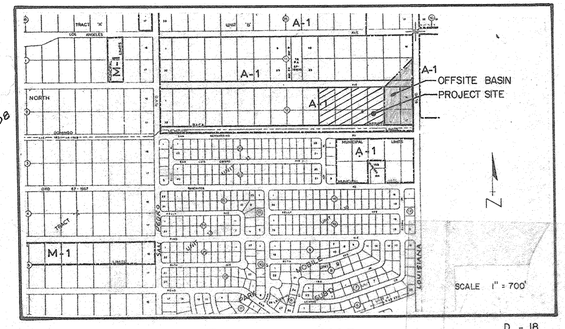
Scale:	Drawn By:	Checked By:	Job Number:	Date:
N.T.S.	DJB	CLW		APRIL 2001

Storm Drain and Paving Details

C-3
SH. 3 OF 3

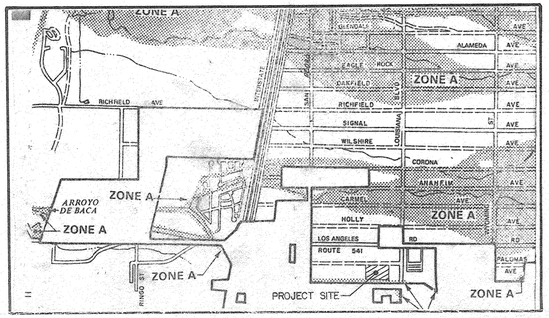
D18-D9





VICINITY MAP

D - 18



FLOOD HAZARD MAP

PLATE 3
1"=2000'

PROJECT BENCHMARK

A STANDARD A.C.S. BRASS TABLET STAMPED "11-D18-1978" SET IN THE TOP OF A CONCRETE POST FLUSH WITH THE GROUND AT THE SOUTHEAST CORNER OF THE INTERSECTION OF SAN PEDRO BLVD., N.E. AND LOS ANGELES AVE., N.E. ELEVATION = 5235.63 FEET (M.S.L.D.)

LEGEND

- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROPOSED SPOT ELEVATION
- RETAINING WALL
- PORTABLE CLASSROOM
- PERMANENT BUILDING
- RIP-RAP
- AREA TO BE SEEDED W/NATIVE GRASSES

DRAINAGE PLAN

The following items concerning the Drainage Plan for Hope High School are contained hereon:

1. Vicinity Map
2. Flood Hazard Map
3. Grading Plan
4. Calculations

The proposed improvements, as shown by the Vicinity Map, are located on the south side of Palomas Avenue N.E. between San Pedro Boulevard N.E. and Louisiana Boulevard N.E. The site is more particularly described as Lots 11-14 and the northerly 164 feet of Lots 19-22, Block 12, Tract A, Unit A, North Albuquerque Acres. At present, the site is undeveloped.

The site does not lie within a designated flood hazard zone, as demonstrated by the Flood Hazard Map. The Domingo Baca Arroyo lies along the southerly boundary of the site. In the undeveloped condition, a minor arroyo transects the site. This arroyo enters the site on the easterly boundary carrying a 100-year peak discharge of 4.2 cfs. The construction of Palomas Avenue along the north boundary of the site will prevent offsite flows from entering from the north. Due to the nature of the topography, no offsite flows will enter the site from the south or the west.

The Grading Plan shows (1) existing contours at 1'-0" intervals, (2) proposed grades indicated by spot elevations and contours at 1'-0" intervals, (3) swales, (4) continuity between proposed and existing elevations and (5) an earthen channel running essentially northeast to southwest intended to convey offsite flows as well as runoff generated within the site. Because the site will consist of paved areas, building areas, landscaped areas, natural vegetation and rip-rap, soil erosion will not be accelerated by the developed site. Finished floor elevations have been established to avoid flooding.

The site has been graded, for the most part, to drain to the Domingo Baca Arroyo. This drainage scheme is consistent with the existing drainage pattern as well as the pre-design conference minutes as recorded by the City of Albuquerque Hydrology Section for Hydrology Project No. D18-D7. Although the pre-design conference was held for Northeast Heights Elementary School, it was expressed during the meeting that the findings would also pertain to the development of Hope High School. The pre-design conference findings permit (1) the free discharge of runoff to Palomas Avenue from the school entrance, (2) that no ponding be required and (3) the free discharge of runoff from the site to the arroyo. The site has been graded with these points in mind. To achieve this, the majority of the site drains to an earthen channel to be constructed through the center of the site. This earthen channel, as stated above, will accept the offsite runoff from the east and will convey that runoff, combined with runoff generated within the site, to a point of discharge located at the southwest corner of the site.

The Calculations shown hereon analyze existing and proposed drainage conditions by the Soil Conservation Service (SCS) Curve Number Method. These calculations demonstrate that the peak discharge from the site is increased by only 0.3 cfs due to development. Although impervious areas have been created, landscaped areas have been added, which improve the surface drainage characteristics of the site. It is because of this that the development of this site will not significantly increase the peak discharge from the site.

The calculations which appear below also demonstrate the adequacy of the earthen channel. These calculations analyze not only the capacity of the channel, but also the depth and velocities anticipated for the 10- and 100-year flows. These calculations are based on the usage of the Mannings equation.

CALCULATIONS

EXISTING CONDITION:

$L = 1{,}200'$, $\Delta elev = 32'$, $s = \frac{\Delta elev}{L} = 0.03$

$t_c = 0.00013 \frac{L^{0.77}}{s^{0.385}} = 0.12$ Hr. (Kirpich Equation)

Soil type = EtC (B soil w/15% cover - Herbaseous)
CN = 80

Analyzing the site by SCS Curve Number Method, Area = 6 Ac, Rainfall (P) = 2.5 in., and Rainfall Distribution = 75%,

$Q_{100,\ Exist} = 8.4$ cfs

$V_{100,\ Exist} = 0.45$ ac-ft.

Analyzing offsite by SCS Curve Number Method, Area = 3 Ac,

$Q_{100,\ Offsite} = 4.2$ cfs

$V_{100,\ Offsite} = 0.225$ ac-ft.

$t_{100,\ Offsite} = 2$ cfs

PROPOSED CONDITION:

Natural areas = 2.2 Ac (CN = 80)
Building and paved areas = 1.8 Ac (CN = 95)
Landscaped areas = 2.0 Ac (CN = 69)

Composite $CN = \frac{2.2}{6}(80) + \frac{1.8}{6}(95) + \frac{2.0}{6}(69) = 81$

By SCS Curve Number Method,

$Q_{100,\ Dev} = 8.7$ cfs

$V_{100,\ Dev} = 0.47$ ac-ft.

$\Delta Q = Q_{100,\ Dev} - Q_{100,\ Exist} = 8.7 - 8.4 = 0.3$ cfs

∴ Peak discharge increased by only 0.3 cfs due to development.

$Q_{10,\ Dev} = 4.2$ cfs

$Q_T = Q_{100,\ Dev} + Q_{100,\ Offsite} = 8.7 + 4.2 = 12.9$ cfs

CHANNEL:

$Q = \frac{1.49}{n} A R^{2/3} s^{1/2}$ (Manning Equation)

Where n = 0.035 (Hydrology for Engineers, Linsley, et al., 1975)
s = 0.0222

For design flow, Q = 13 cfs,
d = 0.35'
v = 3 fps

For 10-year flow, $Q_{10,\ Dev} = 2$ cfs + 4.2 = 6.2 cfs
d = 0.23'
v = 2.3 fps

92.49
84.3
3.2

141.75 cfs

VEGETATION FOR EROSION CONTROL

1. SEED RATE:

Species	Pure Live Seed (lbs/acre)*
Annual Rye Grass	8.0
Giant Dropseed	2.0
Sand Dropseed	1.0
Indian Ricegrass	4.0
Sideoats Grama	6.0
Total	21.0

*Rates apply to drilled seed. Double rates listed if seed is broadcast.

2. FERTILIZER

200 bulk lbs. 0-20-0 Super Phosphate per acre
150 bulk lbs. 45-0-0 Urea per acre

3. MULCH

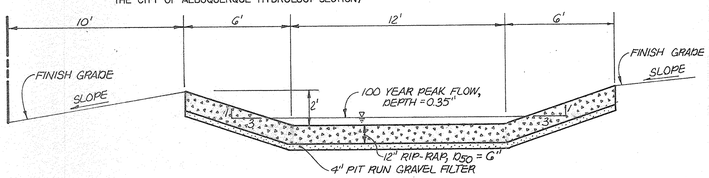
5,000 lbs. hay mulch per acre

4. WATERING SCHEDULE

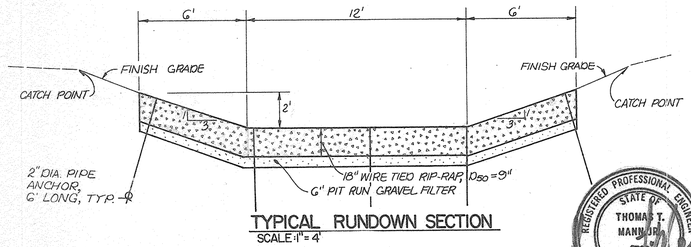
WEEK NO.	1	2	3	4	5	6	Total
IN/ACRE	1.0/1.0*	2.0	1.0	1.0	0.5	0.5	7.0

*Two (2) applications three (3) days apart are required the first week.

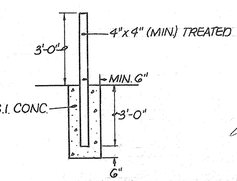
(PROPOSED GRADES PREPARED BY AND ON FILE WITH THE CITY OF ALBUQUERQUE HYDROLOGY SECTION)



SECTION (1)
SCALE: 1"=4'



TYPICAL RUNDOWN SECTION
SCALE: 1"=4'



TYPICAL BOLLARD INSTALLATION
SCALE: 1"=3'

REGISTERED PROFESSIONAL ENGINEER
STATE OF NEW MEXICO
THOMAS T. MANN JR.
3232
NEW MEXICO LAND SURVEYOR
11/24/81

RECEIVED
NOV 24 1981
ENGINEERING

APPROVED FOR DRAINAGE
11/25/81
DATE
SIGNATURE
CE/HYD.
TITLE
CONTINGENCIES

JOB No. 0-107

811 DALLAS, N.E. · ALBUQUERQUE · NEW MEXICO · 87110
ENGINEERS

SCALE
1"=40'

LEGEND

- Existing Contour
- Proposed Contour
- Existing Flow Arrow
- Proposed Existing Building Relocation
- Proposed Building Addition
- FF=5293.9 Finish Floor Elevation

3-29-94 REVISION: TWO PROPOSED PORTABLE CLASSROOM BUILDINGS HAVE BEEN SHOWN IN REVISED LOCATIONS NEAR THE SOUTH LINE OF THE SITE 400 FT EAST OF THE SW CORNER. AN EXISTING PORTABLE BUILDING IS PROPOSED TO BE ROTATED TO ACCOMODATE THE NORTH/SOUTH ORIENTATION PROPOSED. THE BUILDINGS ARE TO BE LOCATED ON EXISTING ASPHALT PAVEMENT, THEREFORE NO INCREASE IN SITE RUNOFF WILL OCCUR WITH THE PROPOSED IMPROVEMENTS.

6-10-94 REVISION: THE PREVIOUSLY PROPOSED GYM ADDITION (910 SF) HAS BEEN DELETED. A PROPOSED BLDG. RELOCATION HAS BEEN ADDED IN THE SOUTHEAST CORNER OF THE SITE ALONG WITH SEVERAL BLDG. SIZE REVISIONS. EXISTING PAVEMENT HAS ALSO BEEN ADDED NORTHEAST OF THE MULTI-PURPOSE BLDG. THESE CHANGES INCREASE Q100 TO 32.9 CFS AND V100 TO 1.15 AC-FT WHICH DOES NOT EXCEED THE CHANNEL SIDE INLET CAPACITY OF 40 CFS.

DRAINAGE CONCEPT

EXISTING
THE EXISTING SCHOOL SITE CONSISTS OF NUMEROUS BUILDINGS, PAVED AND UNPAVED PARKING AREAS, GRASS PLAYFIELDS, AND SAND/DIRT PLAYGROUND AREAS. ALL RUNOFF IS DIRECTED TO THE SOUTHWEST CORNER OF THE SITE WHERE AN EXISTING CONCRETE SIDE-INLET ACCEPTS FLOWS INTO THE CONCRETE-LINED DOMINGO BACA ARROYO. EXISTING STORM DRAIN INLETS IN LOUISIANA BLVD NE INTERCEPT PUBLIC OFF-SITE FLOWS WHICH ARE ALSO DISCHARGED TO THE DOMINGO BACA ARROYO.

PRECIPITATION ZONE: 3 AREA = 8.5456 ACRES
LAND TREATMENT: 0% A 30% B 41% C 29% D

Q_{100} = (2.58)(2.60) + (3.47)(3.45) + (2.50)(5.02)
Q_{100} = 31.2 CFS

V_{100} = [(2.58)(0.92) + (3.47)(1.29) + (2.50)(2.36)]/12
V_{100} = 1.06 AC-FT

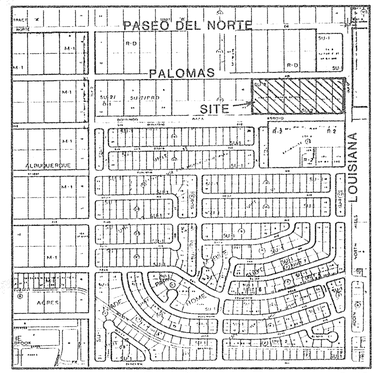
7-5-94 REVISION: THE EXISTING CLASSROOM BLDG. (NOTED AS A RELOCATION IN REV. NO. 2) HAS BEEN SHOWN NEAR THE GYM. A REPLACEMENT BLDG. IS PROPOSED TO BE PLACED IN THE LOCATION OF THE EXISTING BLDG. AS SHOWN. FINISH FLOOR ELEVATIONS HAVE BEEN GIVEN FOR THE TWO BUILDINGS PROPOSED AT THIS TIME (NOTED AS 1).

PROPOSED
PROPOSED SITE IMPROVEMENTS INCLUDE 9,600 SQUARE FEET ADDITIONAL BUILDING AREA AND 30,600 SQUARE FEET ADDITIONAL PAVED PARKING AREA. HISTORIC DRAINAGE PATTERNS WILL REMAIN UNCHANGED.

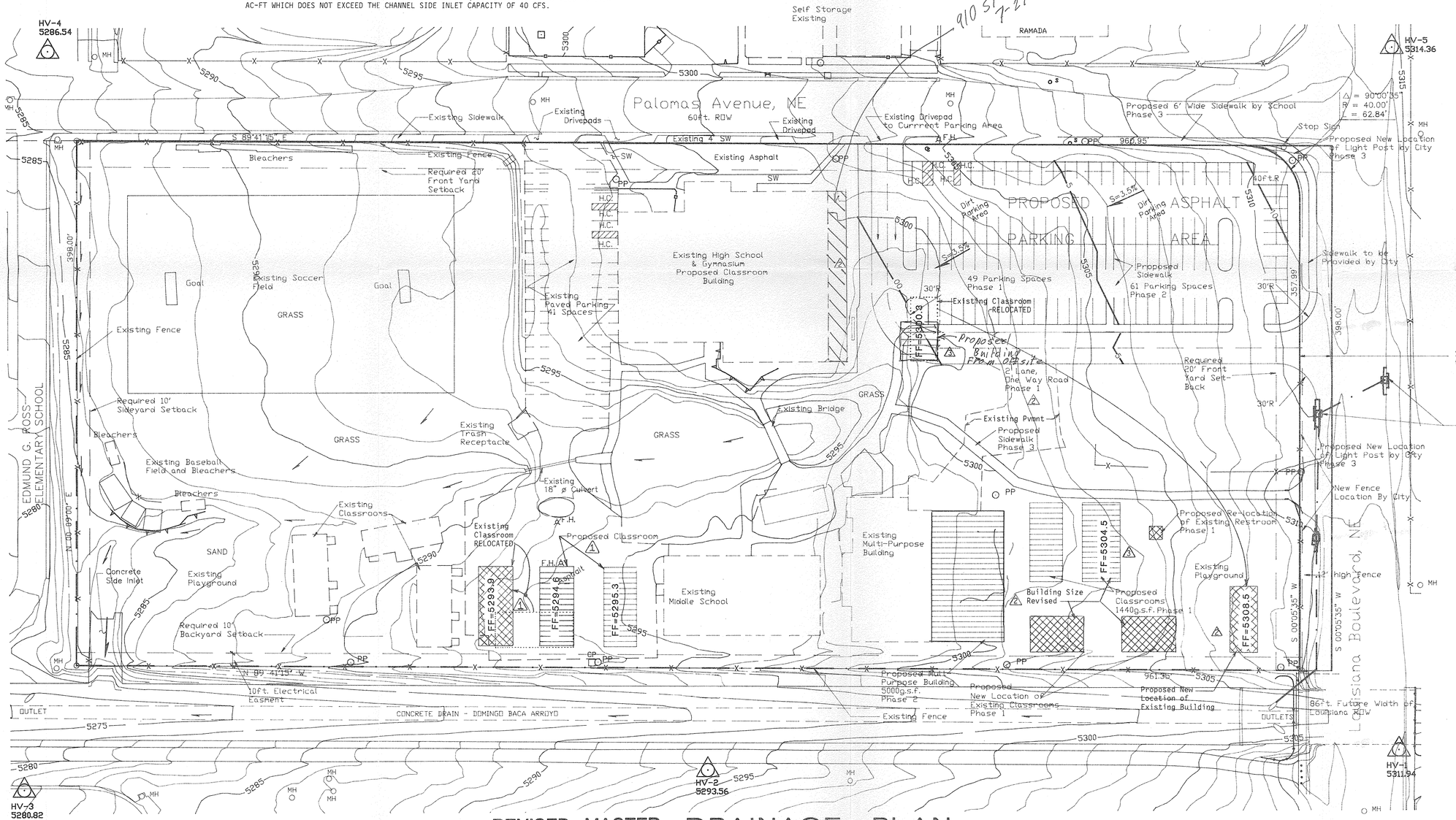
LAND TREATMENT: 0% A 30% B 30% C 40% D

Q_{100} = (2.58)(2.60) + (2.56)(3.45) + (3.41)(5.02)
Q_{100} = 32.7 CFS
V_{100} = [(2.58)(0.92) + (2.56)(1.29) + (3.41)(2.36)]/12
V_{100} = 1.14 AC-FT

THE PROPOSED DEVELOPMENT INCREASES RUNOFF APPROXIMATELY SIX (6) PERCENT.



SCALE: 1"=750'± VICINITY MAP D-18



REVISED MASTER DRAINAGE PLAN

SITE AREA: 8.5456 ACRES

SOILS: PANEL 11 OF THE SCS SOIL SURVEY OF BERNALILLO COUNTY SHOWS SITE SOILS TO BE EMBUDO-TIJERAS, A GRAVELLY FINE SANDY LOAM, CLASSIFIED AS HYDROLOGIC SOIL GROUP 'B'.

LEGAL DESCRIPTION: LOTS 11-22, BLOCK 12, TRACT A, UNIT A, NORTH ALBUQUERQUE ACRES.

SURVEY(S): BOUNDARY SURVEY BY BILL PETTIT (11-92) AND TOPOGRAPHIC SURVEY BY THOMAS R. MANN (11-92).

BENCHMARK: ACS BENCHMARK "1-C19", A BRASS TABLET SET ON A CONCRETE POST FLUSH WITH THE GROUND 30 FT NORTH OF THE CENTERLINE OF PASEO DEL NORTE & 25 FT EAST OF THE CENTERLINE OF LOUISIANA BLVD NE.

ELEVATION = 5,318.20

SCOTT M. McGEE NEW MEXICO 10519 REGISTERED PROFESSIONAL ENGINEER
3-25-93 REV. NO. 1
3-29-94 REV. No. 2
6-10-94 REV. No. 3
7-5-94 REV. No. 4

ISAACSON & ARFMAN, P.A.
Consulting Engineering Associates
128 Monroe Street N.E.
Albuquerque New Mexico

RECEIVED
AUG -6 1994
HYDROLOGY DIVISION

no.	date	revision
4	7-5-94	SEE NOTE ABOVE LEFT
2	6-10-94	SEE NOTE ABOVE LEFT
1	3-29-94	3 PORTABLE BLDG LOCATIONS REVISED

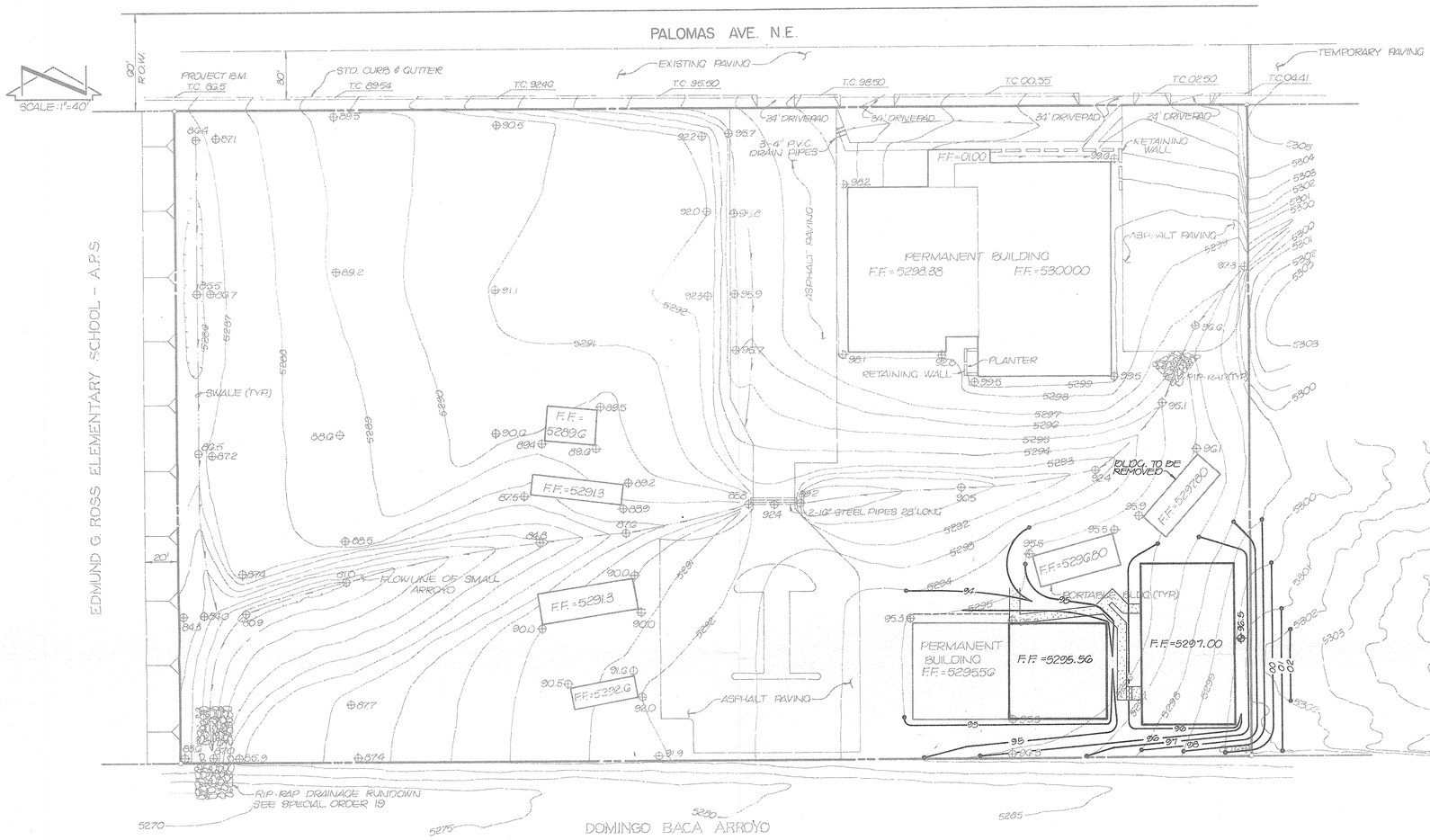
dekker/perich & associates
architecture planning interiors
6501 Americas Parkway, NE, Suite 675
Albuquerque, New Mexico 87110
505 888-3111 Fax 883-8050

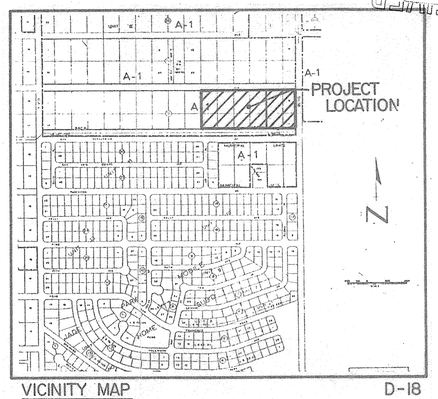
Hope Christian School
6800 Palomas NE
Albuquerque, NM

Grading Plan

job no. 92036
drn. by D/P & A
ckd. by D/P & A
issued 3/26/93

of sheet





VICINITY MAP
SCALE: 1" = 600'

D-18

APR 19 1984
HYDROLOGY SECTION

DRAINAGE PLAN

In 1981, a Grading Plan was prepared for the Hope High School campus. The plan was approved on November 23, 1981. The plan showed the proposed layout for the campus at that time. As a result of growth at the school, the buildings have not been arranged exactly as proposed in the 1981 plan. On August 12, 1982, an as-built drainage plan and certification for the campus was submitted to and approved by the City. A review of the plans shows that they are very similar, but not alike.

The basic plan calls for the discharge of all water into a small arroyo that traverses the site and discharges into the Domingo Baca Arroyo. Essentially, all facilities have been drained to conform with this plan. Since 1982, Hope High School has purchased the four lots directly east of the campus. They now own all of the land from the original campus to Louisiana Boulevard. There is no planned construction on the newly acquired land at this time. However, that land would easily fit in with the original drainage concept.

The construction program proposed with this drainage plan entails the construction of two permanent buildings. The buildings will be located in the southeast corner of the original campus. One of the buildings is free standing, while the second building is an extension of a permanent building. The site is graded to drain back to the arroyo in the middle of the campus. Offsite grading is required along the east side of the original campus. This does not present a problem since Hope High School owns the land to the east. At the present time, the amount of impervious area does not exceed the amount that was originally anticipated, therefore, the addition of these buildings will not increase the amount of runoff to the arroyo.

No calculations have been supplied since this is essentially a free discharge condition and is in conformance with the original drainage plan.

REGISTERED PROFESSIONAL ENGINEER
STATE OF NEW MEXICO
THOMAS T. MANNOR
3792
LAND SURVEYOR

4/10/84

Tom Mann Associates, Inc.
811 DALLAS, N.E. · ALBUQUERQUE · NEW MEXICO · 87110
ENGINEERS

NO.	DATE	BY	REVISIONS

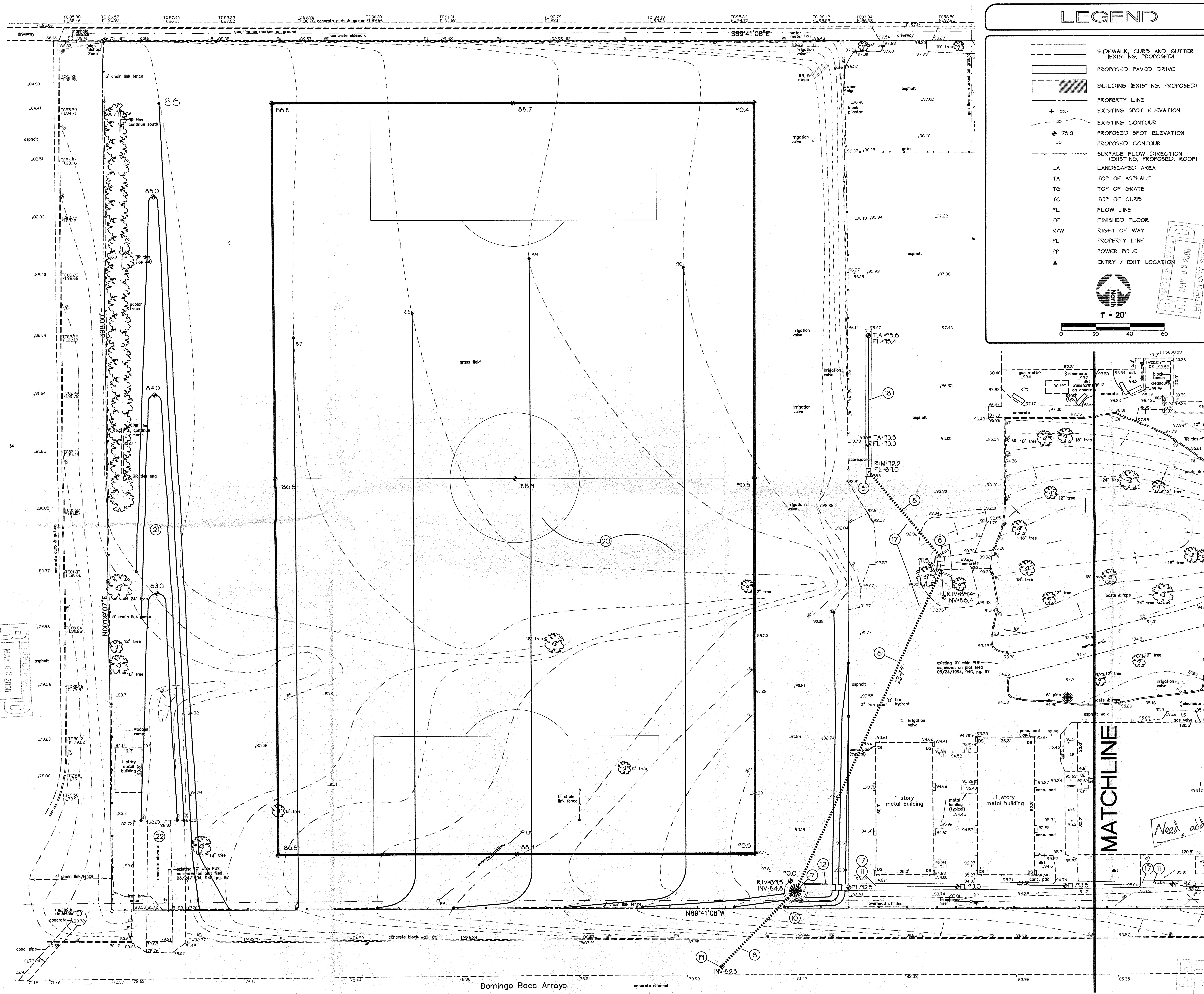
DESIGNED BY JGM
DRAWN BY CGC
APPROVED TTM

JOB NO. 0-107
DATE 4/84

DRAINAGE CERTIFICATION
HOPE HIGH SCHOOL

FILE NO.

SHEET 1 OF 1



LEGEND

	SIDEWALK, CURB AND GUTTER (EXISTING, PROPOSED)
	PROPOSED PAVED DRIVE
	BUILDING (EXISTING, PROPOSED)
	PROPERTY LINE
+ 65.7	EXISTING SPOT ELEVATION
20	EXISTING CONTOUR
75.2	PROPOSED SPOT ELEVATION
30	PROPOSED CONTOUR
	SURFACE FLOW DIRECTION (EXISTING, PROPOSED, ROOF)
LA	LANDSCAPED AREA
TA	TOP OF ASPHALT
TG	TOP OF GRATE
TC	TOP OF CURB
FL	FLOW LINE
FF	FINISHED FLOOR
R/W	RIGHT OF WAY
PL	PROPERTY LINE
PP	POWER POLE
▲	ENTRY / EXIT LOCATION

North

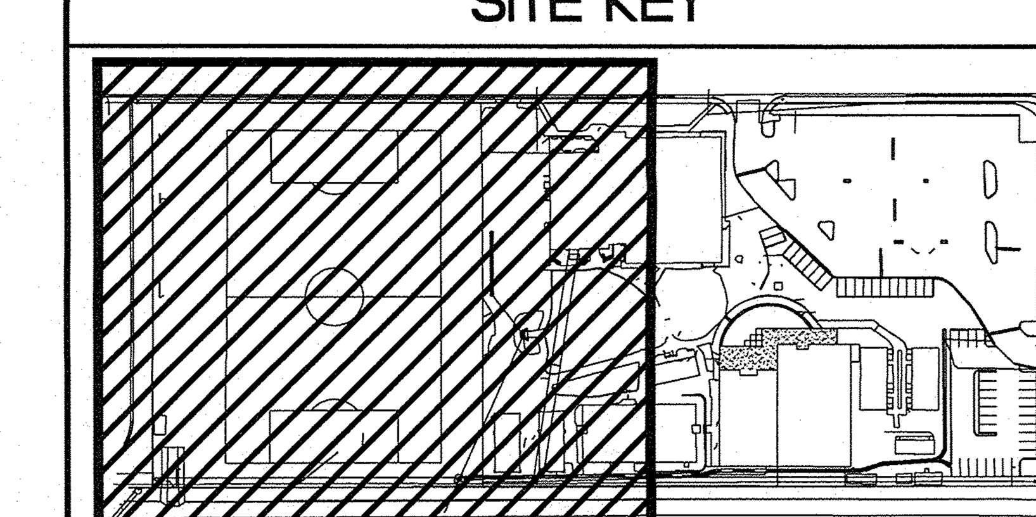
1" = 20'

0 20 40 60

KEYNOTES

1. CONSTRUCT COA MEDIAN CURB AND GUTTER (COA STD. DETAIL 2415) WHERE CONCENTRATED FLOWS ARE CARRIED AND AS NOTED.
2. GRADE A SHALLOW SWALE WITHIN LANDSCAPING AT ELEVATIONS SHOWN TO DIRECT FLOWS TO PROPOSED INLETS, SIDEWALK CULVERTS, LOW POINTS.
3. CONSTRUCT CONCRETE WALK / PATIO THIS AREA AT GRADES SHOWN. SEE ARCHITECTURAL FOR ADD'L INFO.
4. CONSTRUCT 1' BOTTOM WIDTH SIDEWALK CULVERT AT ELEVATIONS SHOWN TO ALLOW CONCENTRATED FLOWS TO PASS. SEE DETAIL SHEET C3 FOR ADD'L INFO.
5. INSTALL SINGLE INLET CATCH BASIN WITH GRATE AND CONCRETE COLLAR PER STORM SEWER DETAIL SHEET C3
6. INSTALL TRIPLE INLET CATCH BASIN WITH GRATE AND CONCRETE COLLAR PER STORM SEWER DETAIL SHEET C3
7. INSTALL STORM DRAIN MANHOLE / INLET PER STORM SEWER DETAIL SHEET C3
8. INSTALL STORM DRAIN PIPE WITH INVERTS AS SHOWN. SEE STORM DRAIN DETAIL SHEET C3 / C4 FOR DETAILS, INVERTS, SLOPES, ETC.
9. TOP OF PROPOSED WALKS THIS AREA TO MATCH TOP OF EXISTING WALKS FOR SMOOTH TRANSITION.
10. CONSTRUCT RETAINING / EXTENDED STEMWALLS AS REQUIRED TO ACHIEVE GRADE DIFFERENCES SHOWN. SEE ARCHITECTURAL FOR ADD'L. INFO.
11. CONSTRUCT 6" DEPRESSED CONCRETE 'V' GUTTER TO CARRY CONCENTRATED FLOWS AS SHOWN. SAWCUT ASHPALT / CONCRETE AS REQUIRED TO CONSTRUCT. WIDTH WILL VARY TO PROVIDE SMOOTH TRANSITION TO ADJOINING PAVEMENT. SEE SHEET C3 FOR DETAILS.
12. CONSTRUCT 'U' SHAPED CONCRETE RUNDOWN TO DIRECT CONCENTRATED VALLEY GUTTER FLOWS TO STORM DRAIN MANHOLE INLET. SEE SHEET C3 FOR DETAILS.
13. EXISTING TREE(S) THIS AREA TO REMAIN. CONTRACTOR TO MINIMIZE REGRADING WITHIN TREE CANOPY AREA. SEE ARCHITECTURAL FOR ADDITIONAL INFORMATION.
14. ROOF FLOWS FROM THE PROPOSED BUILDING WILL BE DIRECTED TO THE SOUTHEAST CORNER AND RELEASED INTO THE PROPOSED VALLEY GUTTER.
15. CONSTRUCT HEADER CURB (COA STD. DETAIL 2415) WHERE NO CONCENTRATED FLOWS ARE CARRIED AND AS NOTED.
16. FIELD ADJUST GRADES THIS AREA AS REQUIRED TO ACHIEVE OVERALL SMOOTH TRANSITION.
17. SAWCUT / REMOVE AND REPLACE EXISTING ASPHALT PAVEMENT AS REQUIRED TO INSTALL STORM SEWER LINE AND CONCRETE VALLEY GUTTER.
18. CONSTRUCT 2" DEPRESSED CONCRETE VALLEY GUTTER TO DIRECT CONCENTRATED FLOWS TO PROPOSED INLET. SAWCUT EXISTING ASHPALT AS REQUIRED TO CONSTRUCT. SEE SHEET C3 FOR DETAILS.
19. SEE STORM DRAIN OUTLET PIPE DETAIL - SHEET C3
20. REGRADE SOCCER FIELD TO GRADES SHOWN. SEE ARCHITECTURAL FOR ADDITIONAL INFORMATIN.
21. CONSTRUCT GRADED SWALE AT ELEVATIONS SHOWN THIS AREA TO DIRECT FLOWS TO THE EXISTING CONCRETE CHANNEL ACCESS TO THE DOMINGO BACA ARROYO.
22. EXISTING CONCRETE CHANNEL ACCESS TO THE DOMINGO BACA ARROYO.
23. CONSTRUCT 'U' SHAPED CONCRETE CHANNEL WITHIN ISLAND AT FLOWLINE ELEVATIONS SHOWN TO ALLOW FLOWS TO PASS.

SITE KEY



CHRISTOPHER L. WEISS NEW MEXICO 8653 REGISTERED PROFESSIONAL ENGINEER 5-3-00

C.L. WEISS ENGINEERING, INC.

SANDIA PARK OFFICE
POST OFFICE BOX 97
SANDIA PARK NM, 87047
(505) 281-1800

ALVARADO OFFICE
1100 ALVARADO DR. NE
ALBUQUERQUE, NM 87110
(505) 266-3444

Revisions

HOPE CHRISTIAN SCHOOL CAMPUS ADDITIONS

Genesis

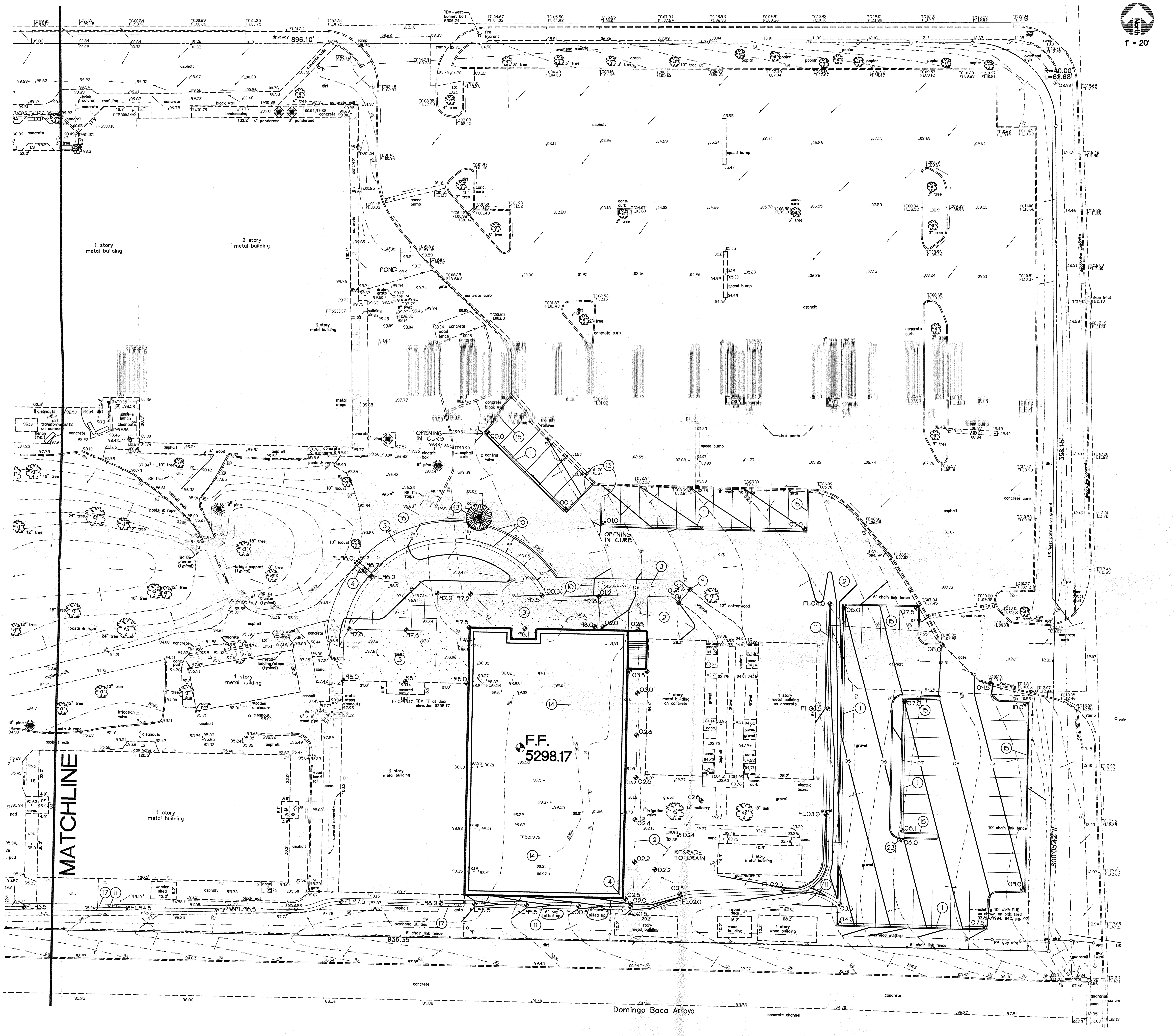
Scale:	Drawn By:	Checked By:	Job Number:	Date:
1" = 20'	BJB	CLW		MAY 2000

Drainage and Grading Plan

C-1

SH. OF

DG Paperspace.dwg 05/02/00 13:41:16

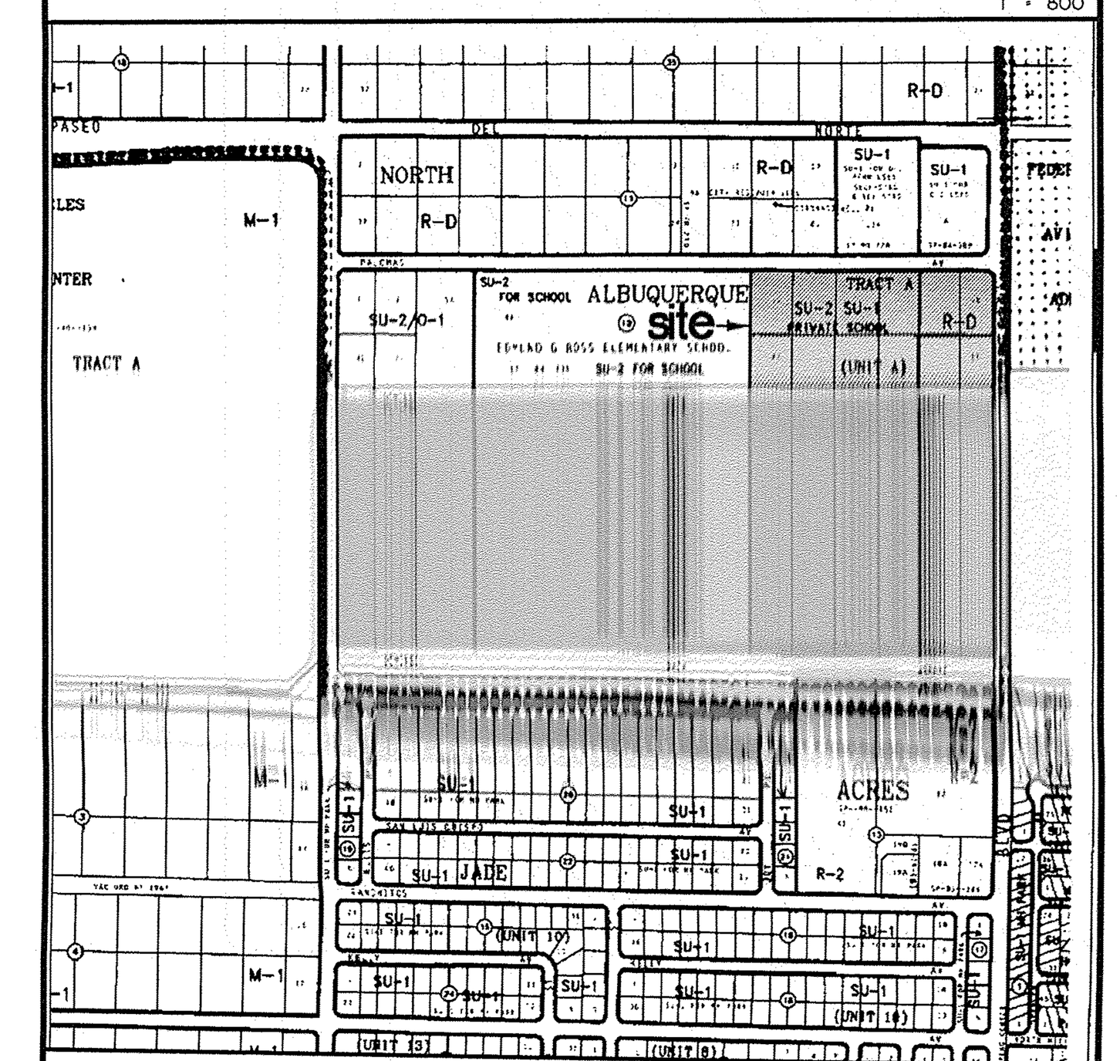


KEYNOTES

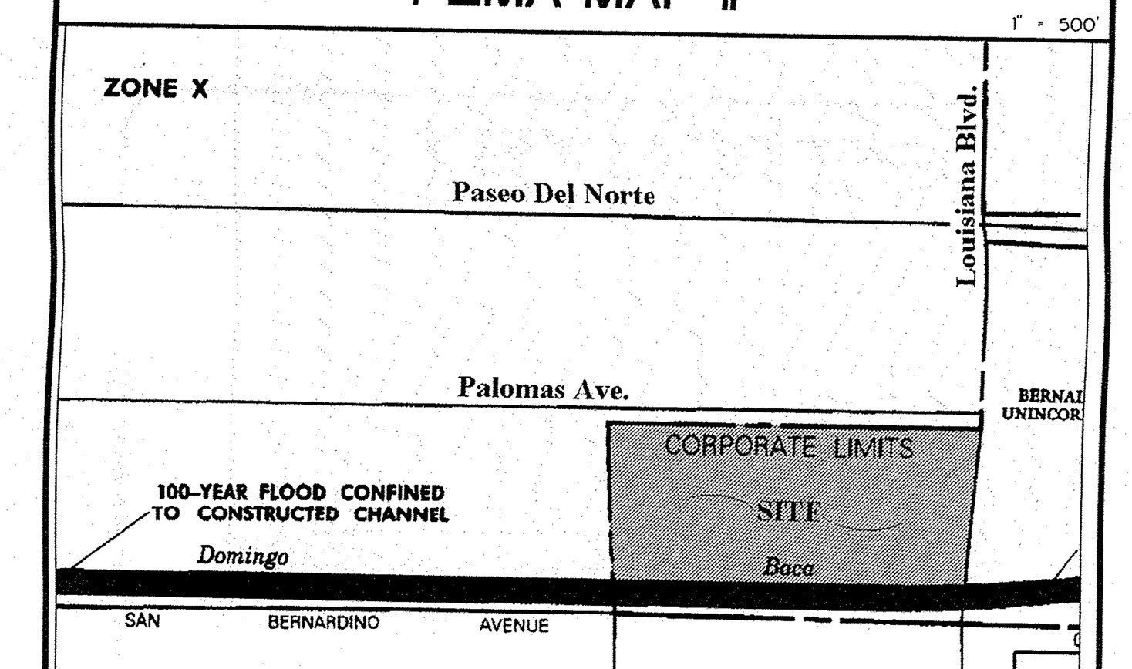
GENERAL NOTES

- (A) SEE ARCHITECTURAL PLANS FOR ALL SITE PLAN INFORMATION AND DIMENSIONS
- (B) SEE ARCHITECTURAL PLANS FOR SITE DEMOLITION INFORMATION.
- (C) ALL RIP-RAP TO BE MIN. 6" DIA. ANGULAR RIP RAP.

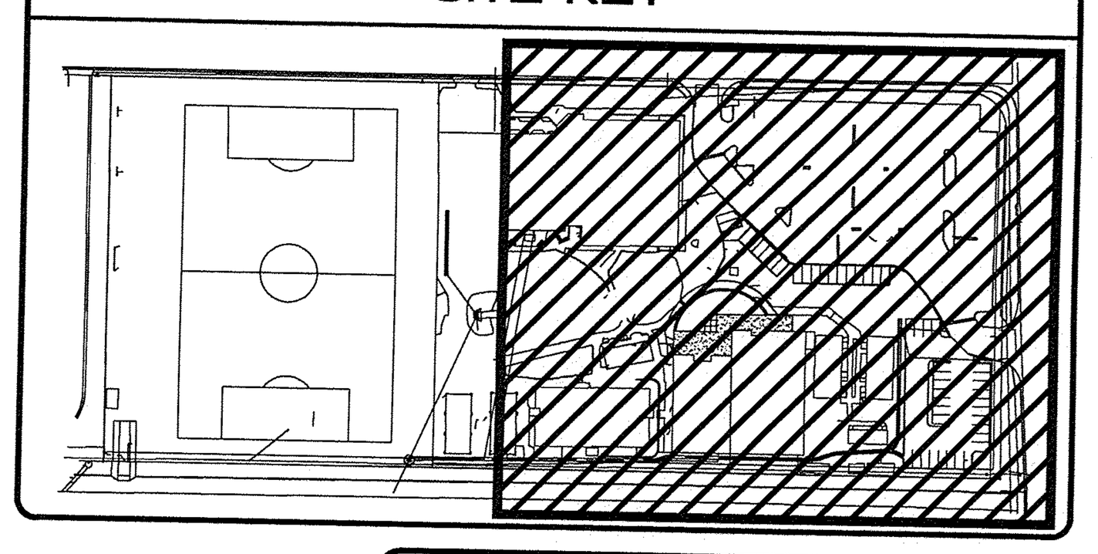
VICINITY MAP



FEMA MAP



SITE KEY



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Revisions

HOPE CHRISTIAN SCHOOL CAMPUS ADDITIONS

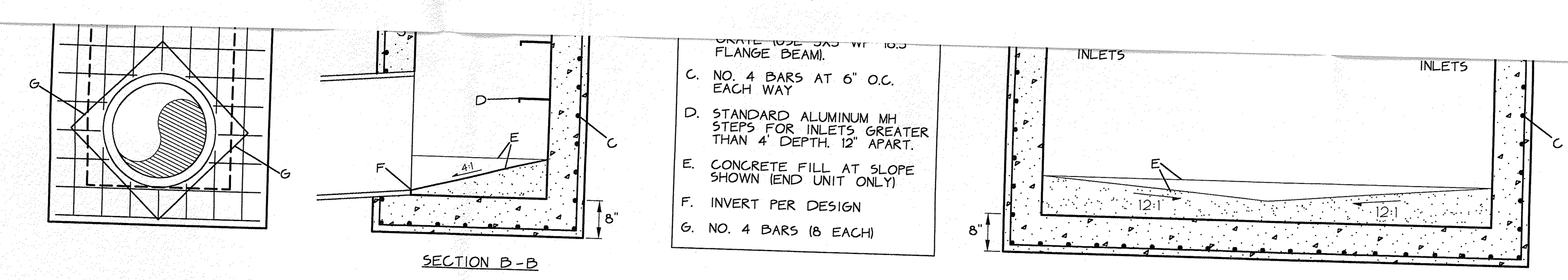
Genesis

Scale	Drawn By	Checked By	Job Number	Date
1" = 20'	BJB	CLW		MAY 2000

Drainage and Grading Plan — C-2 SH. OF

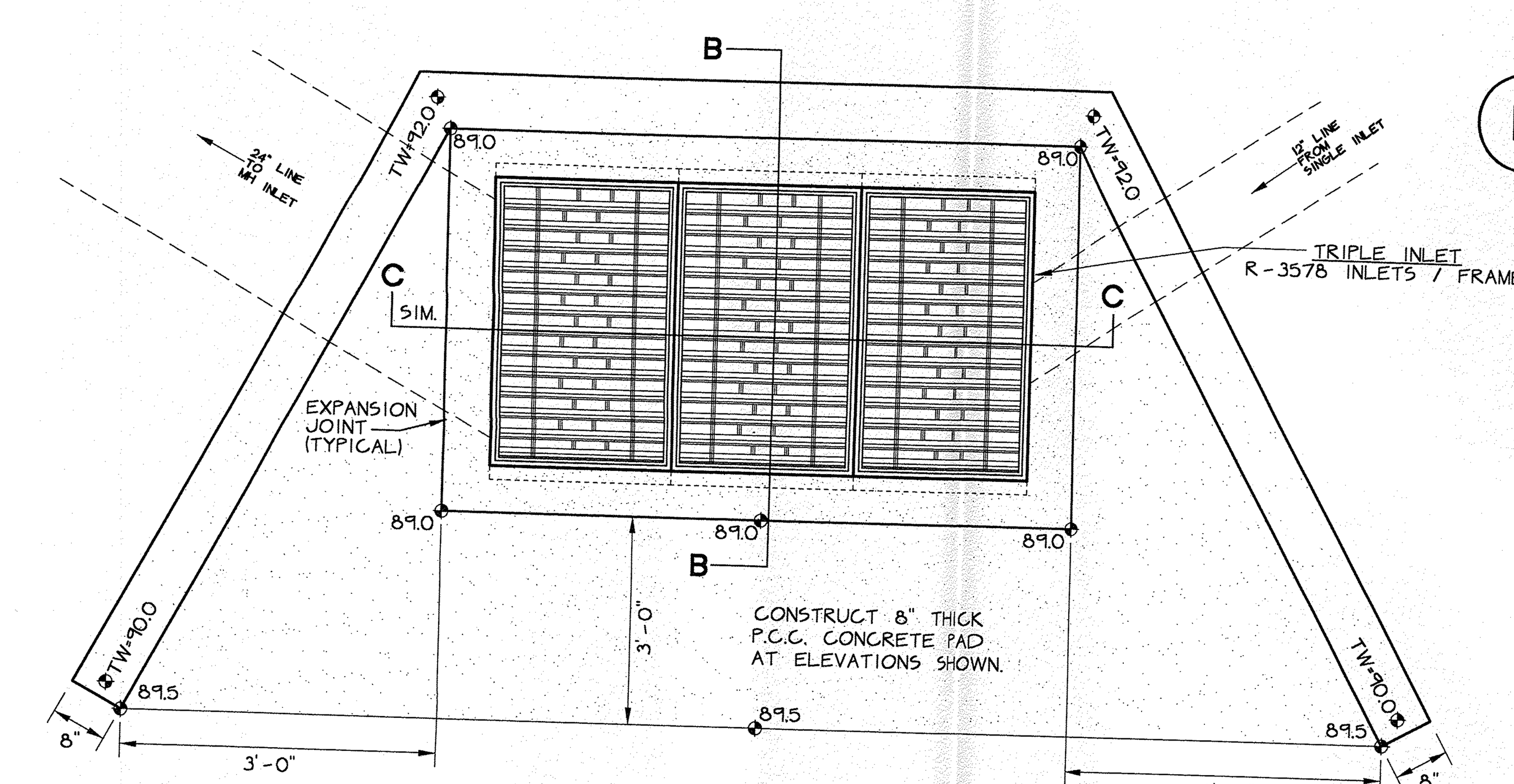
(G) STORM DRAIN PLAN

-SEE DRAINAGE/GRADING PLAN FOR LEGEND N.T.S.
-DISTANCES ARE CENTER TO CENTER



(H) STORM SEWER INLET CONSTRUCTION - STRUCTURAL INFORMATION

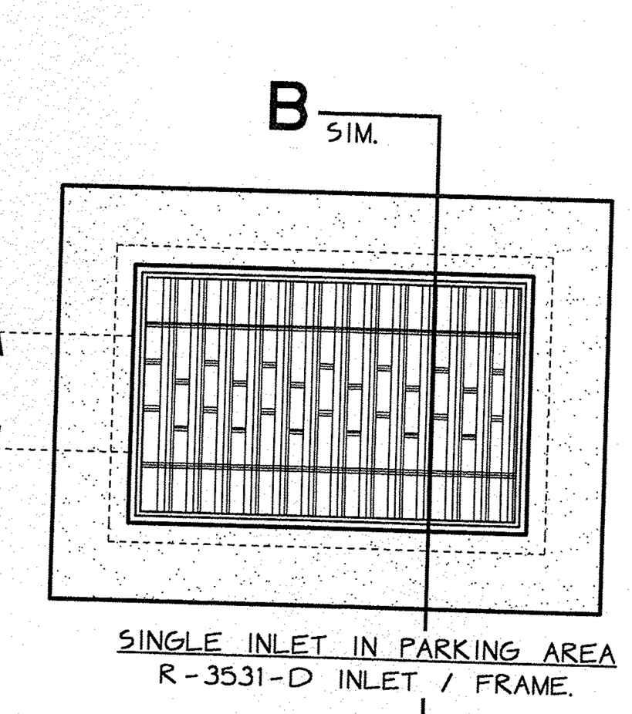
N.T.S.



(J) TRIPLE INLET PLAN

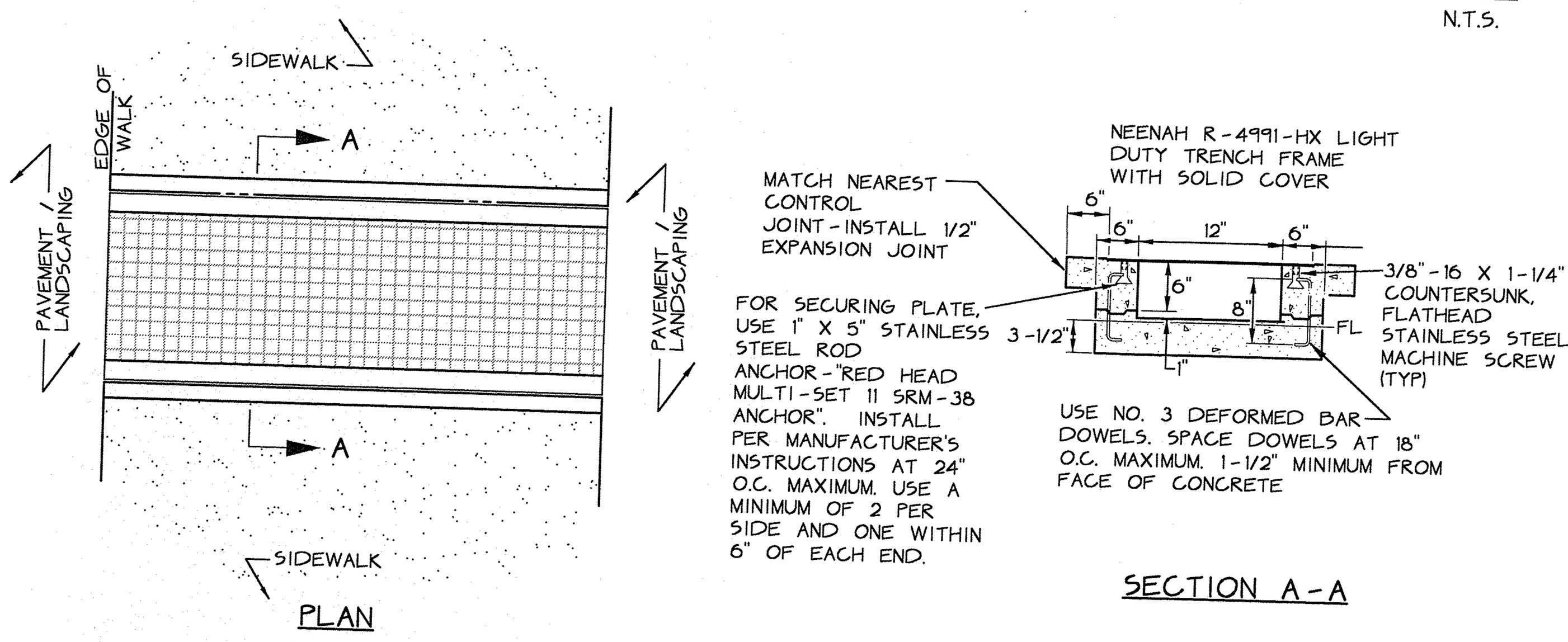
SEE DETAIL THIS SHEET FOR STRUCTURAL INFORMATION

N.T.S.



(K) SINGLE INLET PLAN

SEE DETAIL THIS SHEET FOR STRUCTURAL INFO.



(L) SIDEWALK CULVERT

NTS

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Revisions

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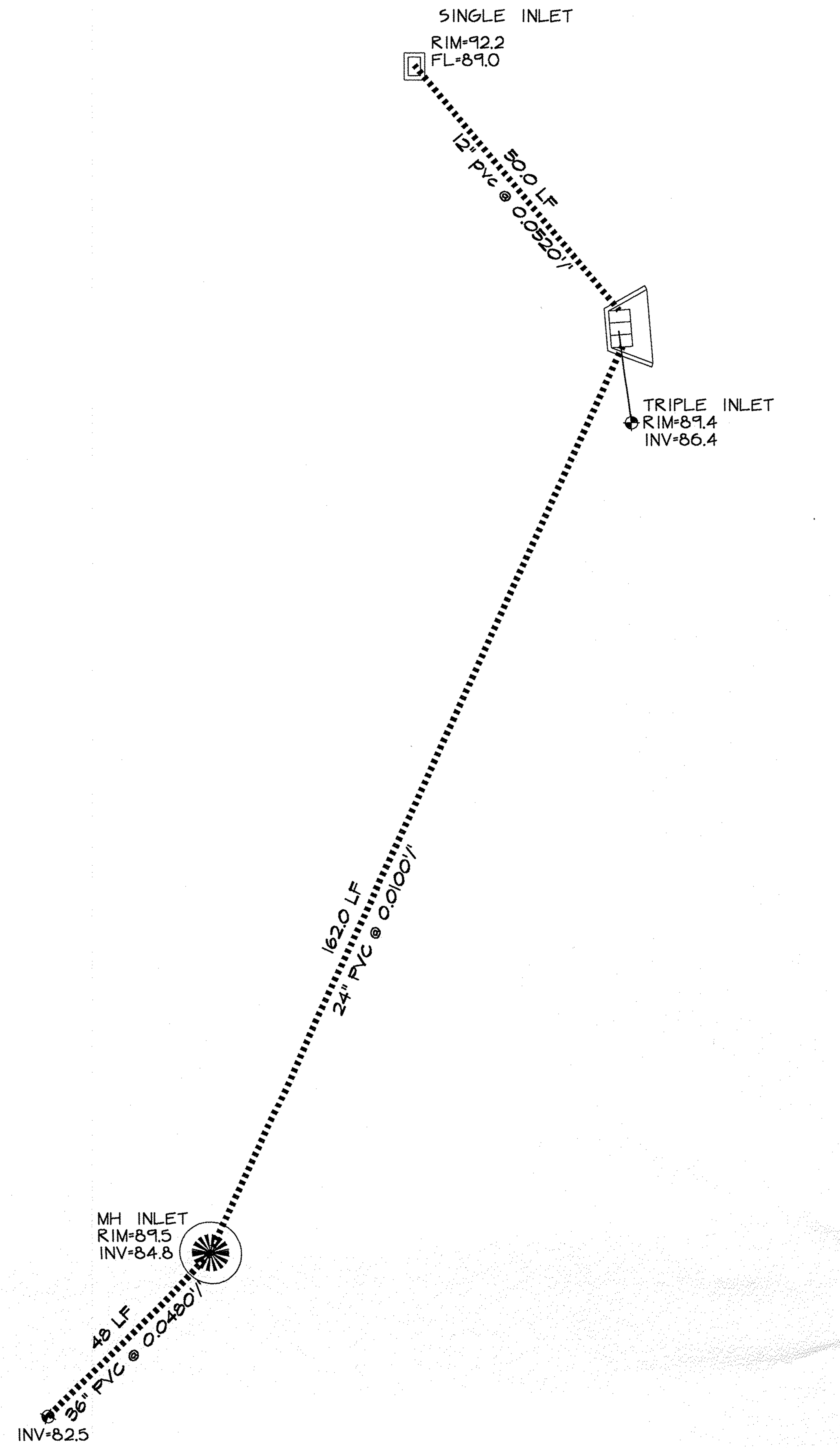
HOPE CHRISTIAN SCHOOL CAMPUS ADDITIONS

Genesis

Scale	Drawn By	Checked By	Job Number	Date
N.T.S.	BJB	CLW		MAY 2000

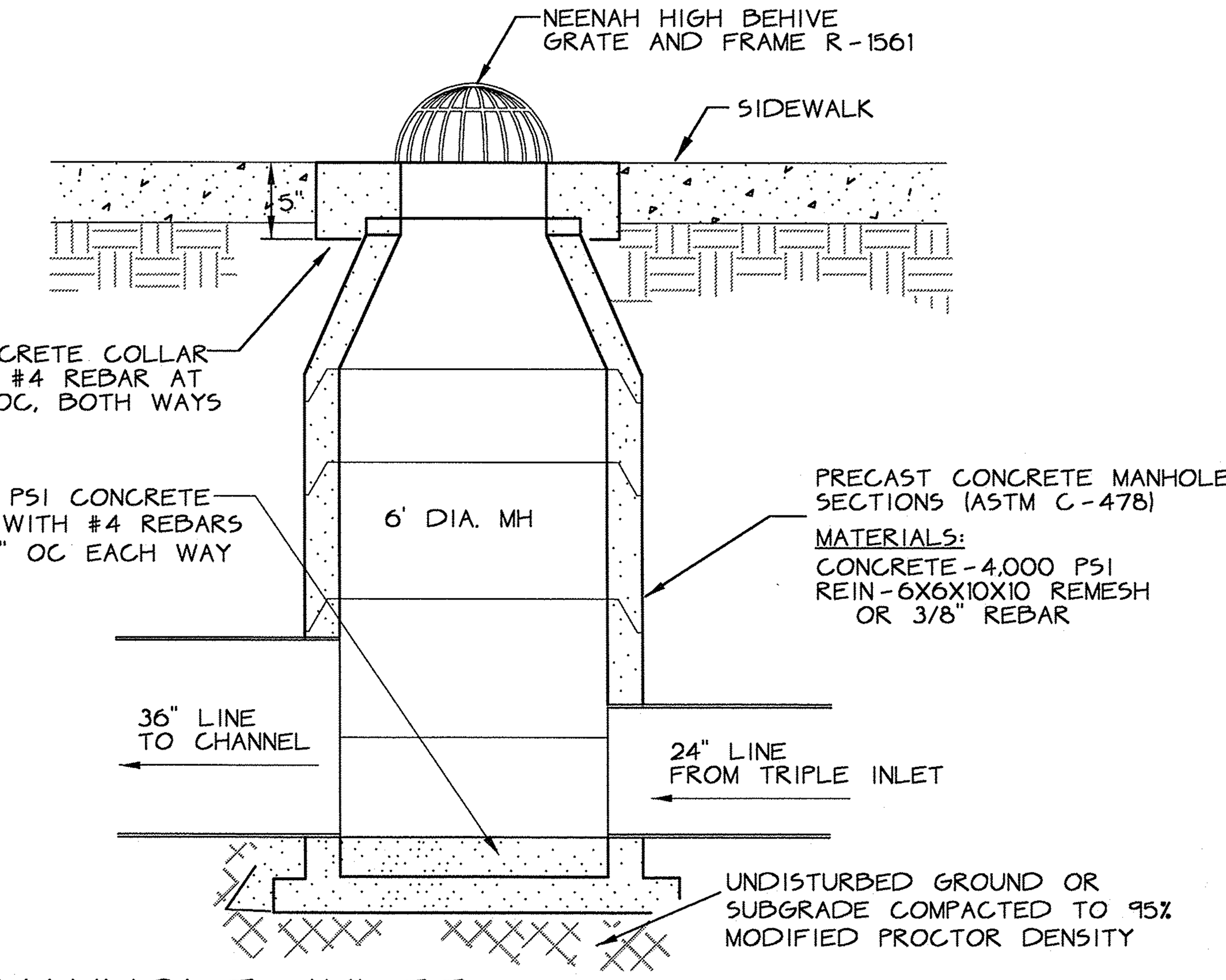
Storm Drain and Paving Details — C-3 SH. OF



G STORM DRAIN PLAN

-SEE DRAINAGE/GRADING PLAN FOR LEGEND
-DISTANCES ARE CENTER TO CENTER

N.T.S.



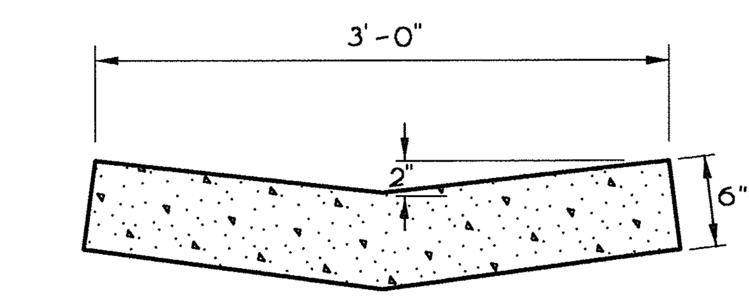
GENERAL NOTES

1. USE STANDARD CAST IRON FRAME AND COVER (TOTAL WEIGHT = 325 LBS±5%) WITH "STORM SEWER" CAST ON COVER. FRAME SHALL HAVE TAB TO PREVENT LATERAL MOVEMENT.
2. CONCRETE PIPE SUPPORTS SHALL EXTEND OUTSIDE OF MANHOLE OF FIRST JOINT AS SHOWN AND SHALL CRADLE PIPE TO SPRING LINE.
3. INVERT ELEVATIONS AND DROP OF INVERT THROUGH MANHOLE SHALL BE ACCORDING TO PLANS.

A MANHOLE INLET

N.T.S.

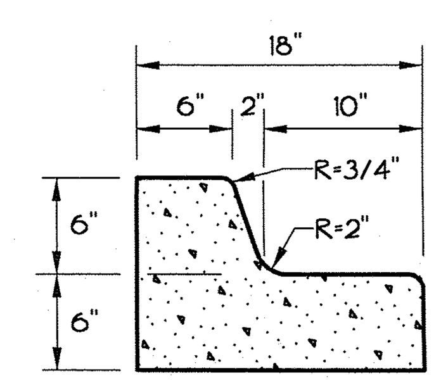
SAWCUT EXISTING ASPHALT AS REQUIRED TO INSTALL PROPOSED VALLEY GUTTER / INLET AT ELEVATIONS SHOWN AND TRANSITION EXISTING ASPHALT PAVEMENT FOR SMOOTH RIDING TRANSITION.



PROVIDE CONTRACTION JOINTS @ 10' O.C.

B VALLEY GUTTER

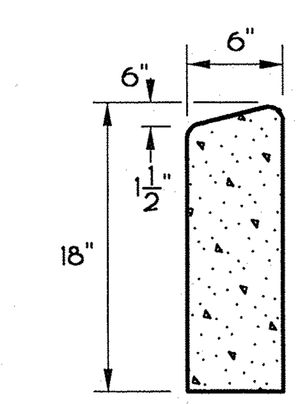
N.T.S.



PROVIDE CONTRACTION JOINTS @ 10' O.C.

C CURB AND GUTTER

N.T.S.



PROVIDE CONTRACTION JOINTS @ 10' O.C.

D HEADER CURB

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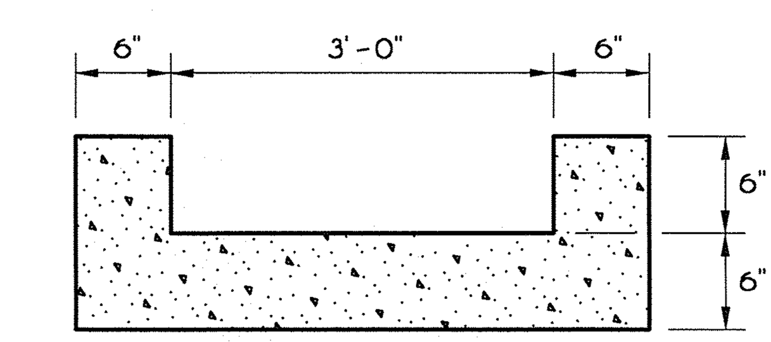

PROVIDE CONTRACTION JOINTS @ 10' O.C.

E 'U' SHAPED CHANNEL

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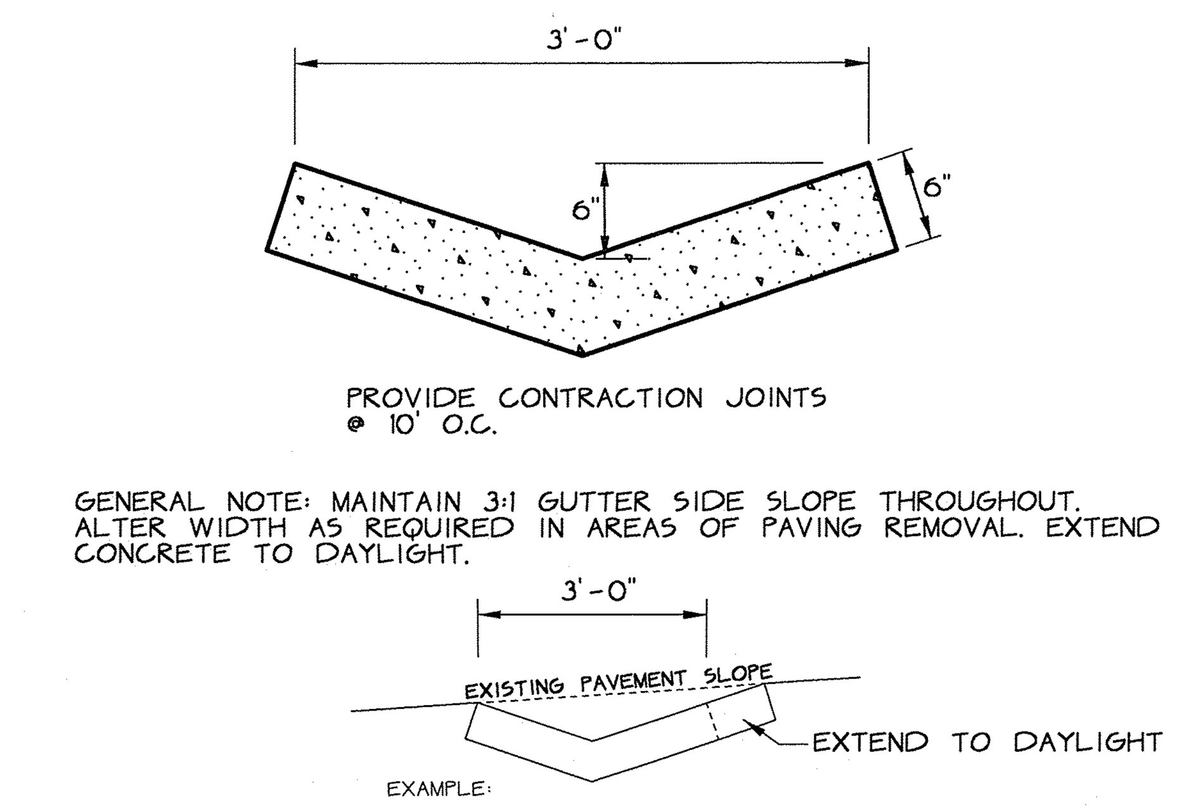

F 'V' GUTTER

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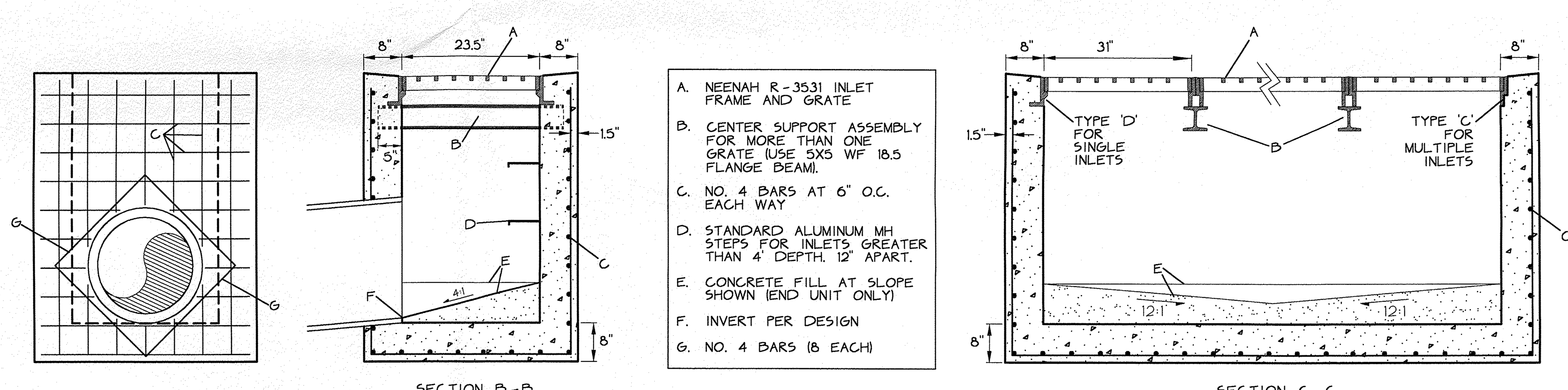

H STORM SEWER INLET CONSTRUCTION - STRUCTURAL INFORMATION

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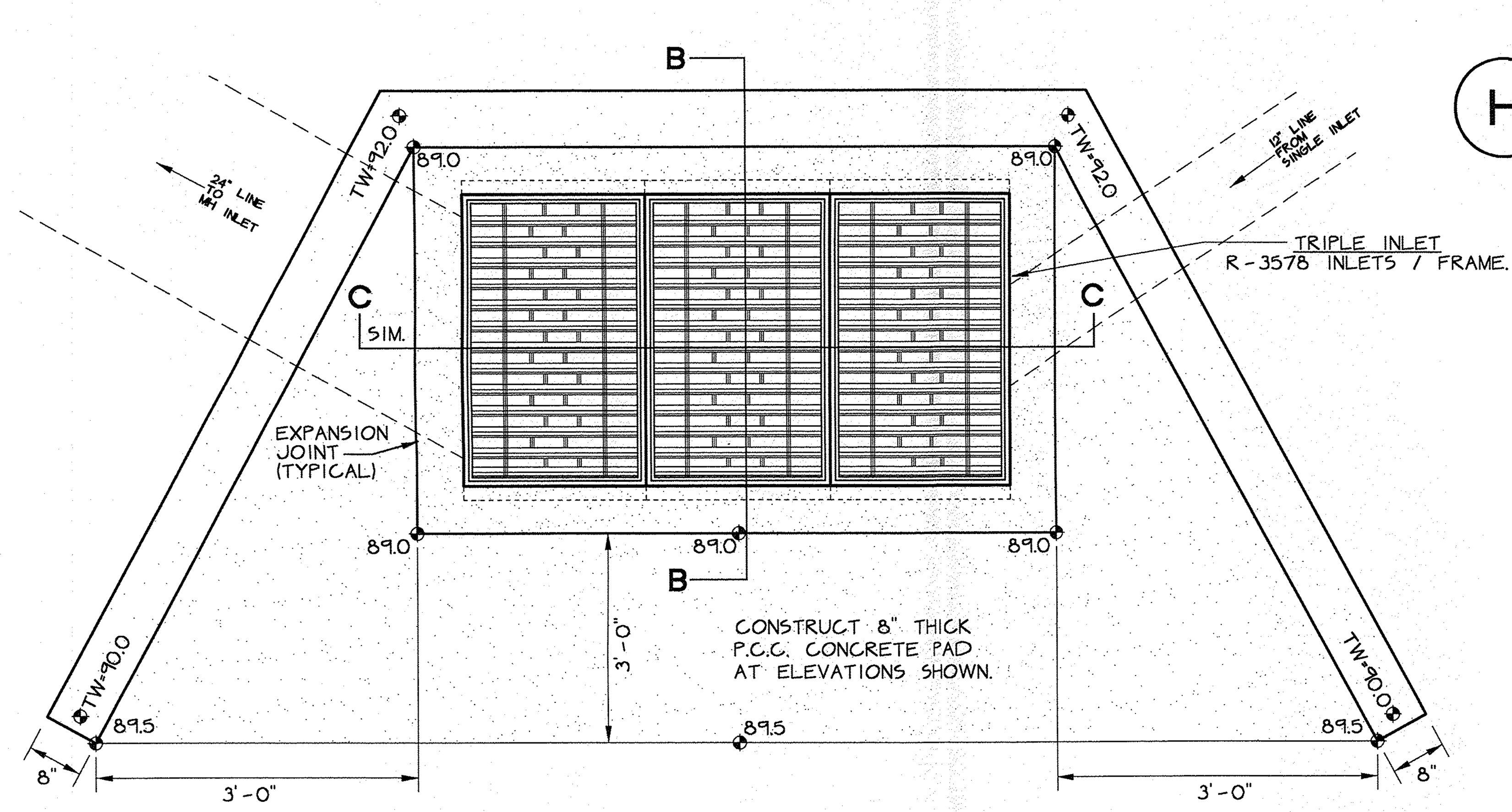

J TRIPLE INLET PLAN

SEE DETAIL THIS SHEET FOR STRUCTURAL INFORMATION

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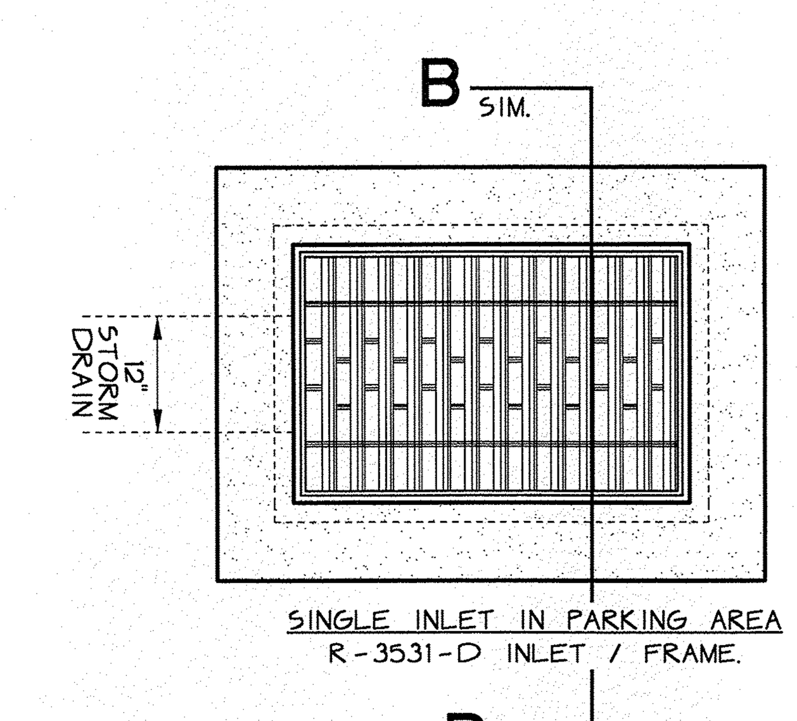
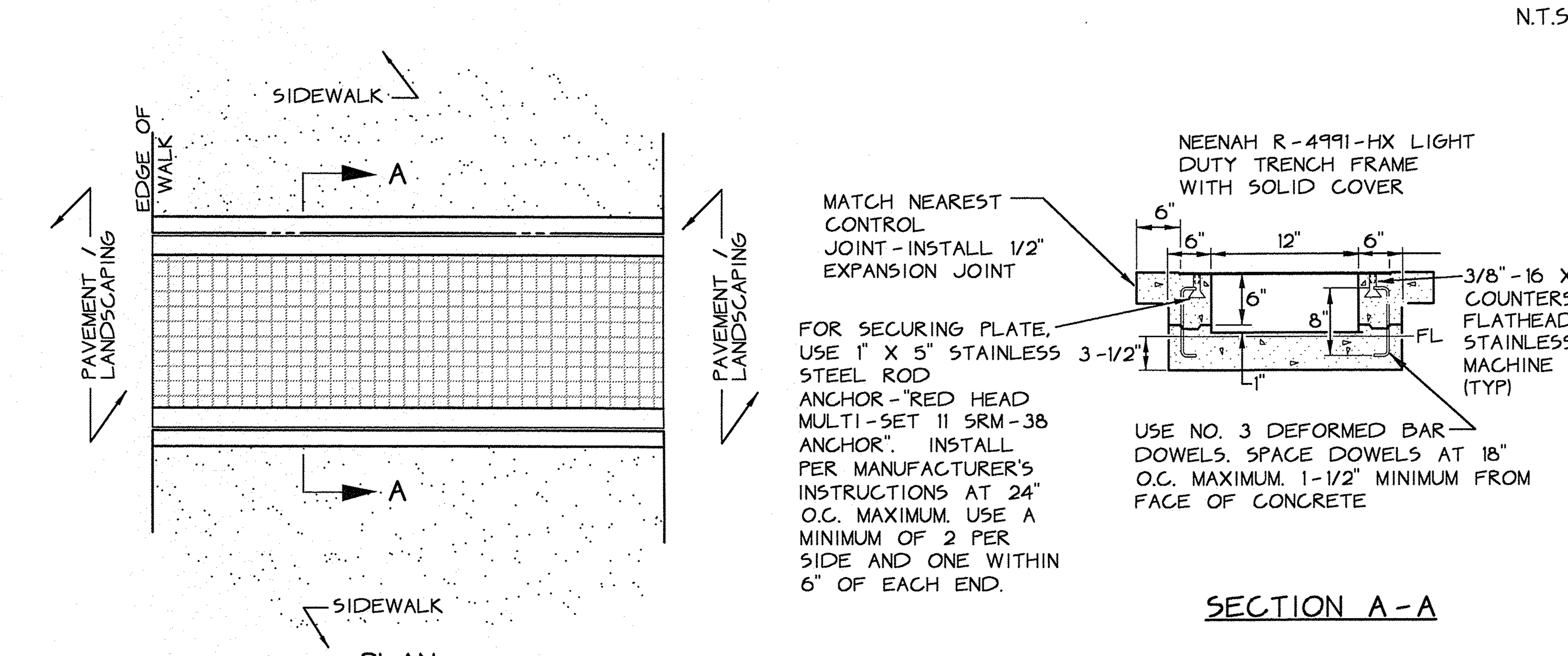


K SINGLE INLET PLAN

SEE DETAIL THIS SHEET FOR STRUCTURAL INFO.



L SIDEWALK CULVERT

NTS

KEYNOTES

CHRISTOPHER L. WEISS
NEW MEXICO
8653
5-3-00
REGISTERED PROFESSIONAL ENGINEER

C.L. WEISS ENGINEERING, INC.

SANDIA PARK OFFICE
POST OFFICE BOX 97
SANDIA PARK, NM 87047
(505) 281-1800

ALVARADO OFFICE
1100 ALVARADO DR. NE
ALBUQUERQUE, NM 87110
(505) 266-3444

Revisions

HOPE CHRISTIAN SCHOOL
CAMPUS ADDITIONS

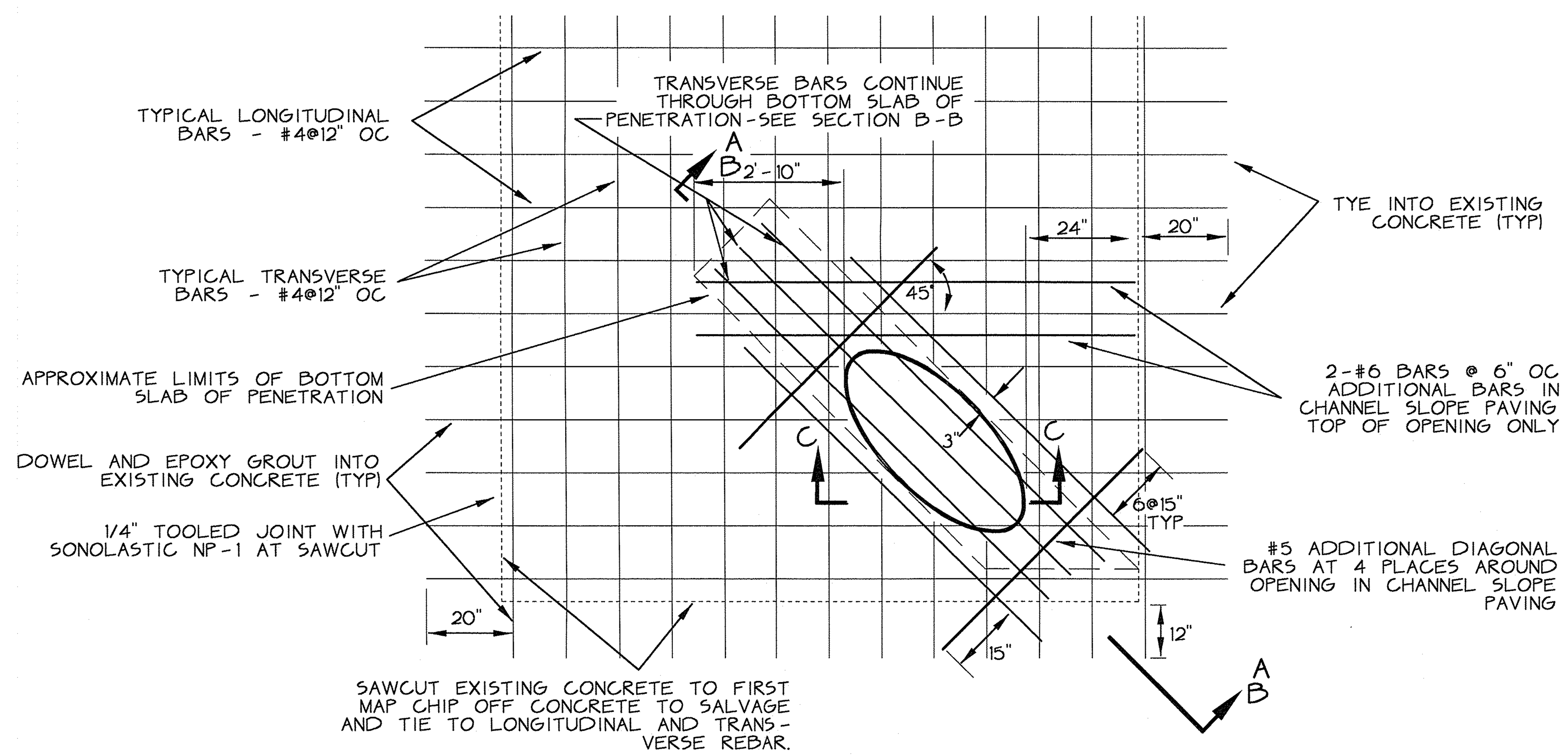
Genesis

Scale	Drawn By	Checked By	Job Number	Date
N.T.S.	BJB	CLW		MAY 2000

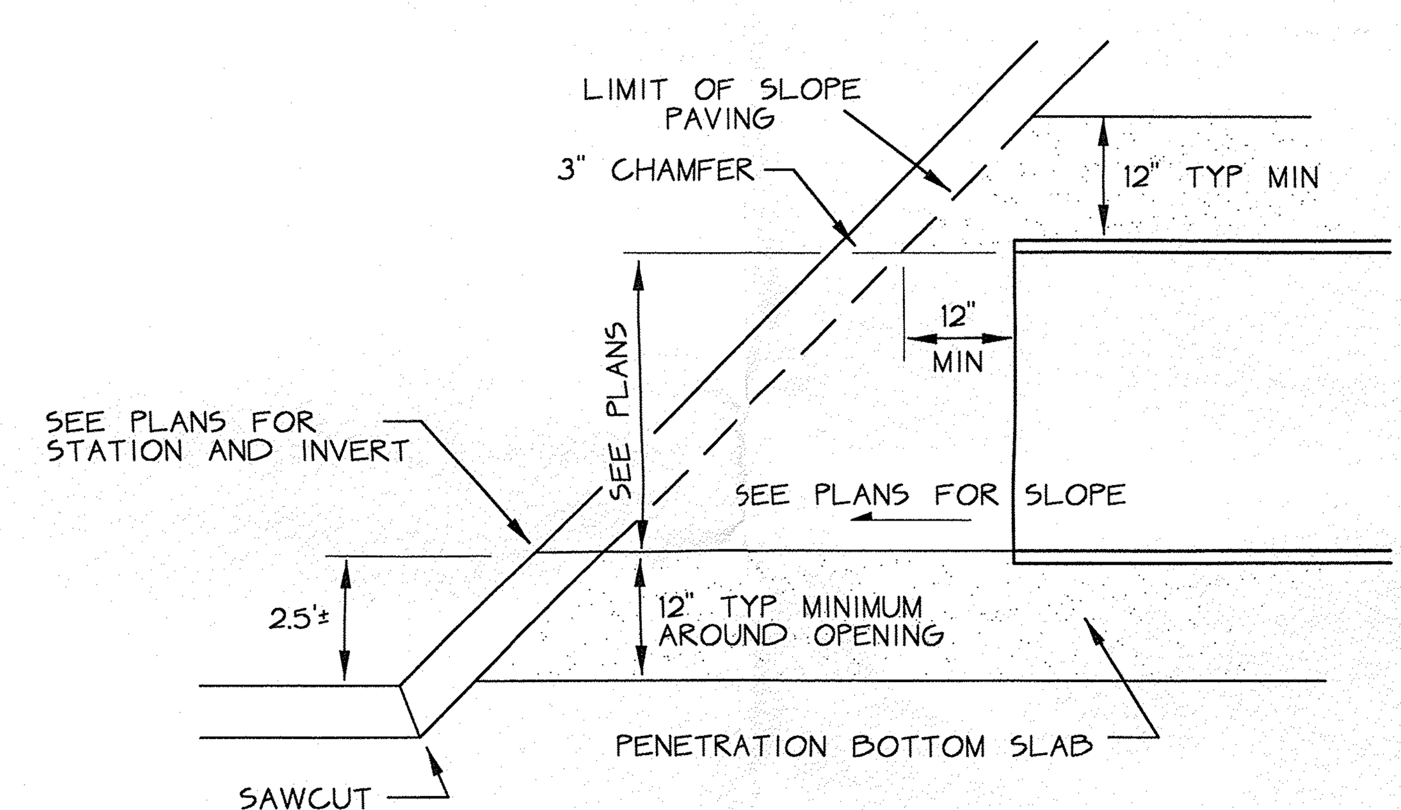
Storm Drain and Paving Details

C-3
SH. OF

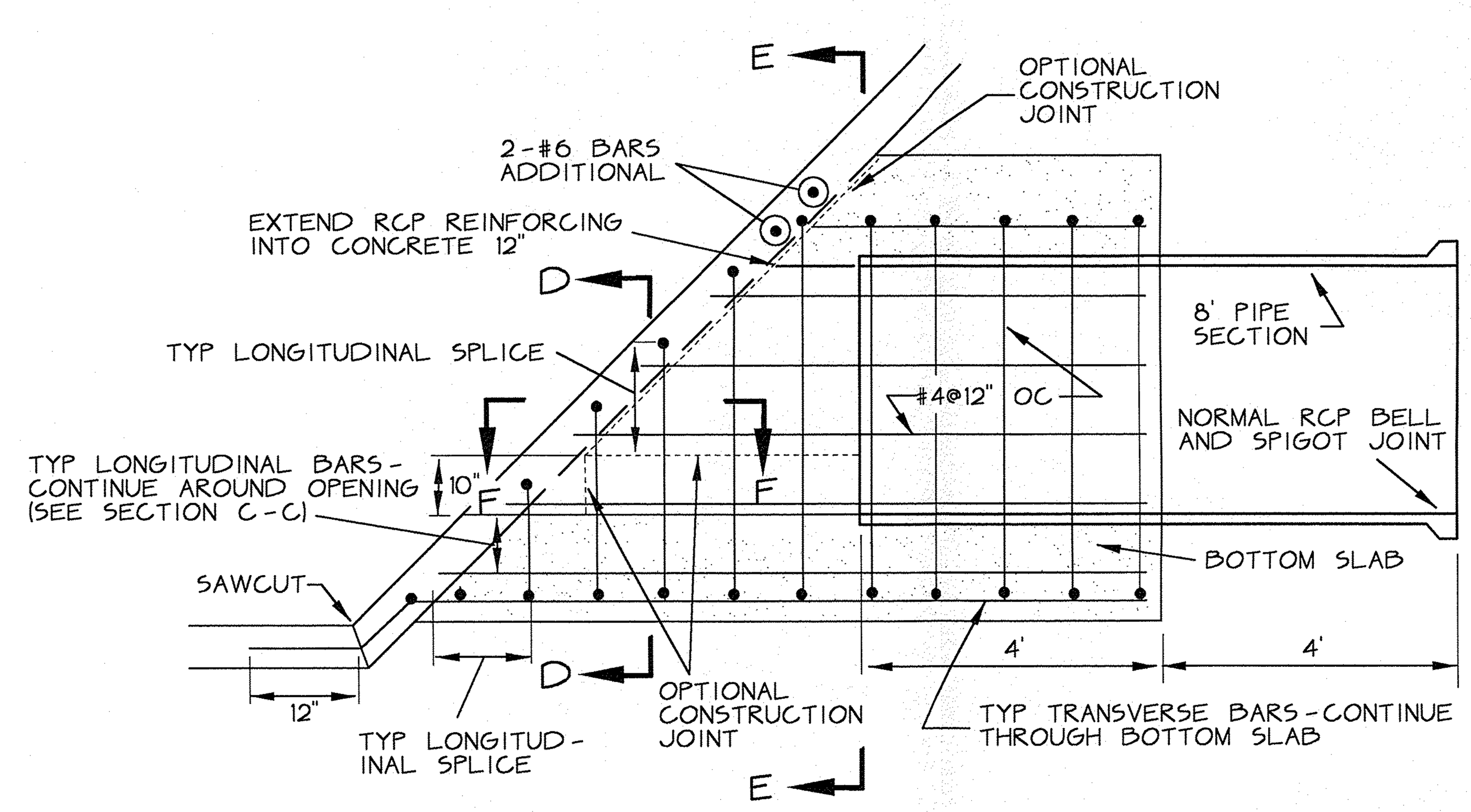
Storm Sewer and Details.dwg 04/12/00 13:37:5



PLAN VIEW
NTS



SECTION A-A
NTS



SECTION B-B
NTS

CHANNEL CONNECTION DETAILS - 45° PENETRATION

CHANNEL CONNECTION DETAILS PROVIDED BY CITY
OF ALBUQUERQUE AND SHOWN FOR INFORMATION ONLY

NOTICE TO CONTRACTOR

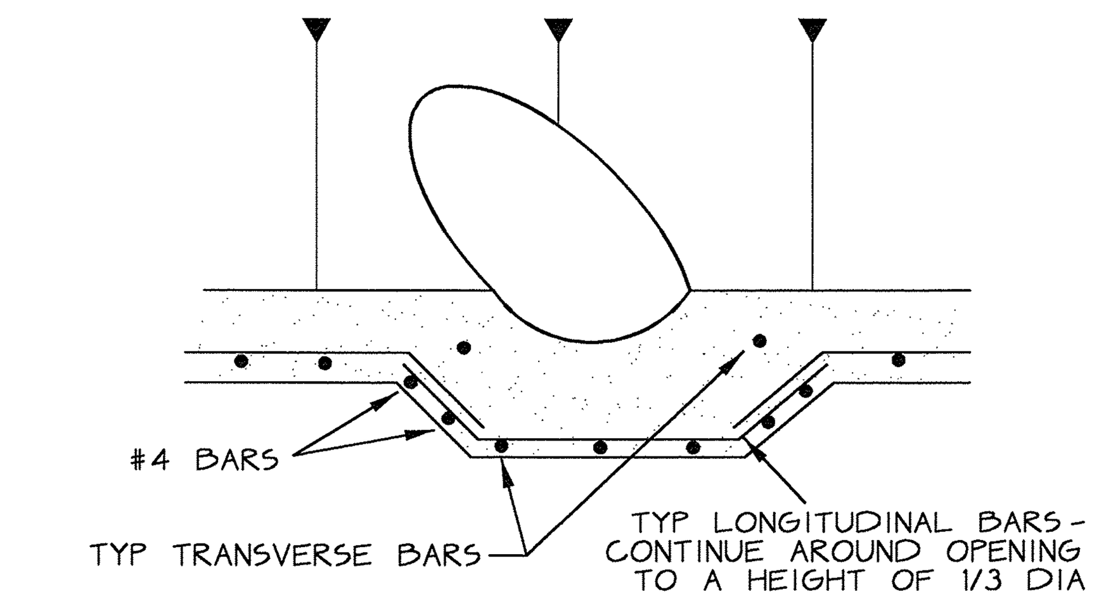
1. AN EXCAVATION/CONSTRUCTION PERMIT WILL BE REQUIRED BEFORE BEGINNING ANY WORK WITHIN CITY RIGHT-OF-WAY. AN APPROVED COPY OF THESE PLANS MUST BE SUBMITTED AT THE TIME OF APPLICATION FOR THIS PERMIT.
2. ALL WORK DETAILED ON THESE PLANS TO BE PERFORMED, EXCEPT AS OTHERWISE STATED OR PROVIDED HEREON, SHALL BE CONSTRUCTED IN ACCORDANCE WITH ALBUQUERQUE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.
3. TWO WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT LINE LOCATING SERVICE, 765-1234, FOR LOCATION OF EXISTING UTILITIES.
4. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL OBSTRUCTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE CONFLICT CAN BE RESOLVED WITHIN A MINIMUM AMOUNT OF DELAY.
5. BACKFILL COMPACTION SHALL BE ACCORDING TO COLLECTOR STREET USE.
6. MAINTENANCE OF THESE FACILITIES SHALL BE THE RESPONSIBILITY OF THE OWNER OF THE PROPERTY SERVED.
7. CONTRACTOR IS RESPONSIBLE FOR OBTAINING EXCAVATION PERMIT FOR SIDEWALK CULVERT/DRAIN.
8. PROOF OF ACCEPTANCE WILL BE REQUIRED PRIOR TO SIGN OFF FOR CERTIFICATE OF OCCUPANCY (C.O.).

DRAINAGE FACILITIES WITHIN CITY RIGHT-OF-WAY

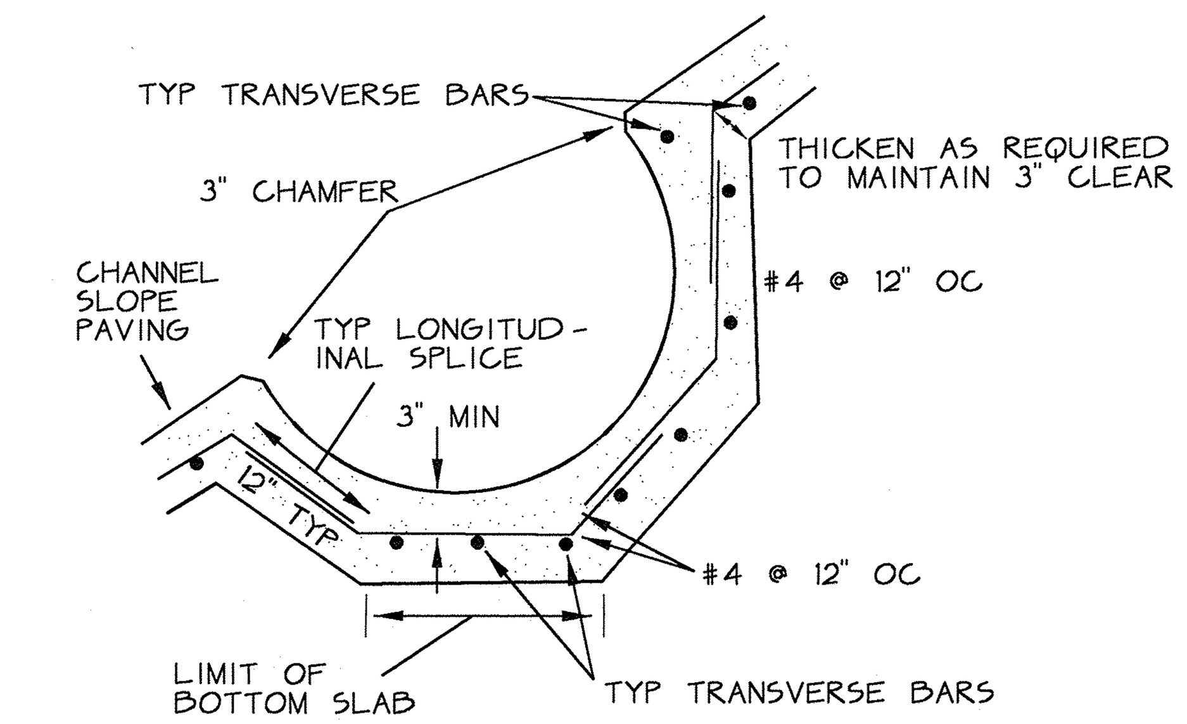
DESIGN APPROVAL: ______________________ DATE
HYDROLOGY SECTION

INSPECTION APPROVAL: ______________________ DATE
CONSTRUCTION SECTION

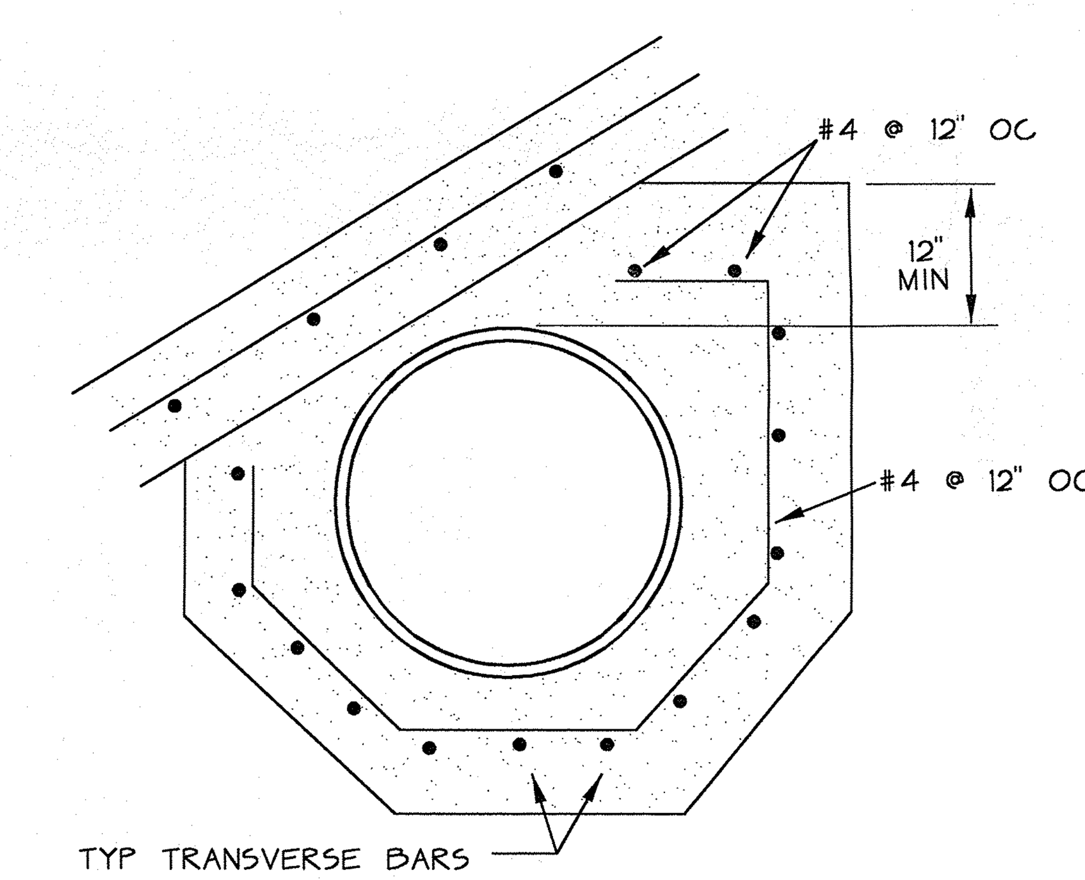
ACCEPTANCE: ______________________ DATE
CONSTRUCTION SECTION/PERMITS



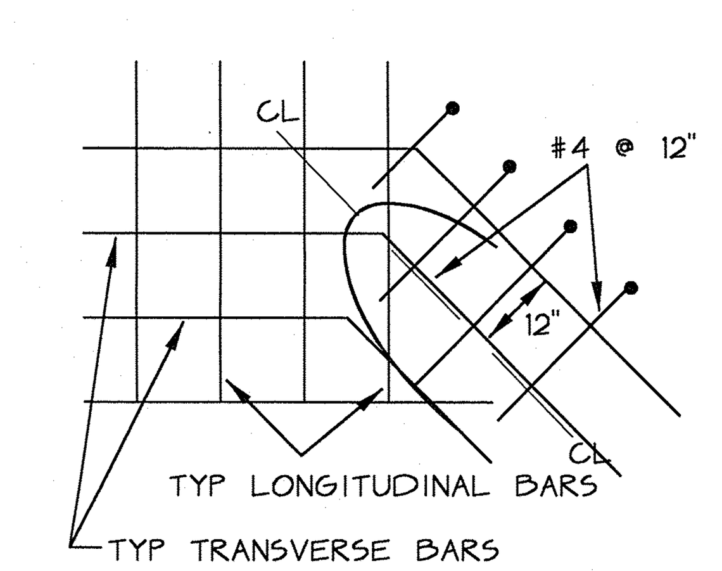
SECTION C-C
NTS



SECTION E-E
NTS



SECTION E-E
NTS



SECTION F-F
NTS

KEYNOTES

CHRISTOPHER L. WEISS NEW MEXICO 8653 REGISTERED PROFESSIONAL ENGINEER 5-3-00

C.L. WEISS ENGINEERING, INC.
SANDIA PARK OFFICE
POST OFFICE BOX 97
SANDIA PARK, NM 87047
(505) 281-1800
ALVARADO OFFICE
1100 ALVARADO DR. NE
ALBUQUERQUE, NM 87110
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Revisions

HOPE CHRISTIAN SCHOOL
CAMPUS ADDITIONS

Genesis

Scale:	Drawn By:	Checked By:	Job Number:	Date:
N.T.S.	BJB	CLW		MAY 2000

Channel Connection Details

C-4
SH. OF

Storm Sewer and Details.dwg 04/12/00 13:37:5