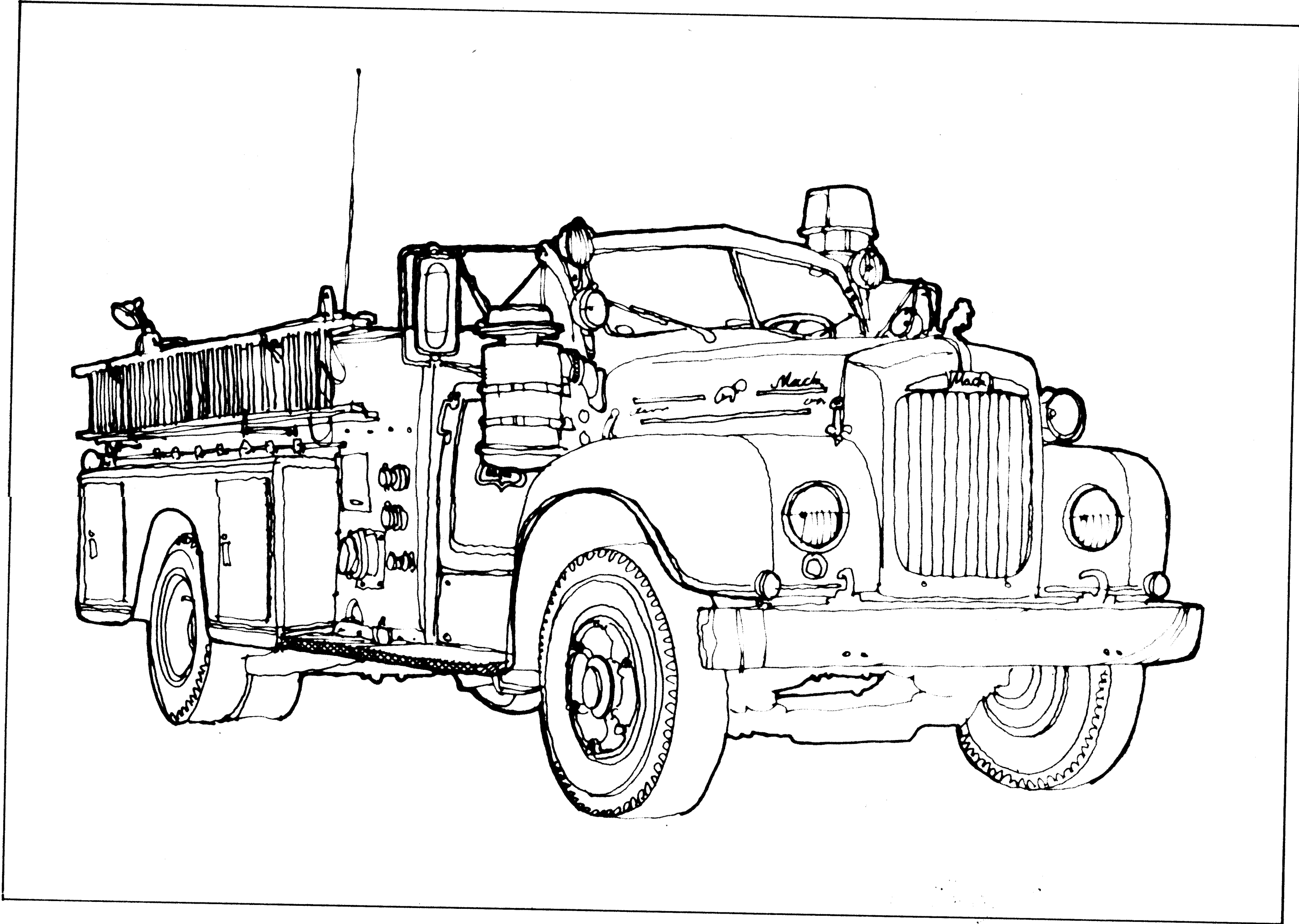




FIRE STATION NO. 18

TAYLOR RANCH

ALBUQUERQUE FIRE DEPARTMENT
GARNER/HICKS ARCHITECTS

CITY OF ALBUQUERQUE
PROJECT NO. 1649

PROJECT INFORMATION:

- PROJECT ADDRESS: 6100 TAYLOR RANCH DR. N.W., ALBUQUERQUE
- LEGAL DESCRIPTION: TR. 3-1-1-A, TAYLOR RANCH ADDITION
- PROPERTY ZONE: R-1
- ZONE ATLAS MAP: E-11-E
- OCCUPANCY GROUP: B-2: MUNICIPAL: RESIDENCE
- CONSTRUCTION TYPE: S-N
- NET FLOOR AREA (PER UBC):
 - APPARATUS ROOM: 1302 S.F.
 - PERSONNEL AREA: 1336 S.F.
 - ACCESSORY AREA: 825 S.F.
 - TOTAL: 4063 S.F.
- GROSS BLDG. AREA: 4889 G.F.
- OCCUPANT LOAD: 8 PERSONS

INDEX OF DRAWINGS:

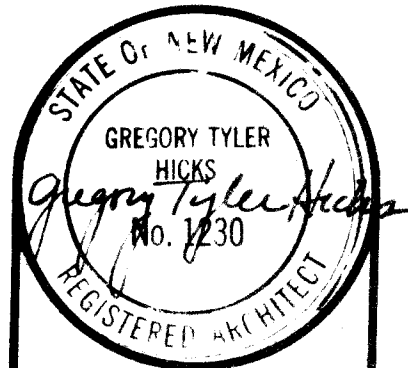
- T-1: PROJECT INFORMATION / INDEX
- B-1: GRADING / DRAINAGE / SITEWORK / VICINITY MAP
- B-2: UTILITY SITE PLAN / SITEWORK DETAILS
- B-3: LANDSCAPE & IRRIGATION WORK
- S-1: FOUNDATION PLAN
- S-2: CEILING FRAMING PLAN / STRUCTURAL NOTES
- S-3: ROOF FRAMING PLAN
- S-4: STRUCTURAL DETAILS
- A-1: ARCHITECTURAL FLOOR PLAN
- A-2: ELEVATIONS / BUILDING SECTIONS / ROOF PLAN
- A-3: BUILDING SECTION / WALL SECTIONS / DETAILS
- A-4: WALL SECTIONS / DETAILS
- A-5: WALL SECTIONS / DETAILS
- A-6: DETAILS / SCHEDULES
- M-1: PLUMBING FLOOR PLAN
- M-2: PLUMBING ROOFPLAN / DETAILS
- M-3: SOLAR HOT WATER DETAILS
- M-4: MECHANICAL FLOOR PLAN
- M-5: MECHANICAL DETAILS
- M-6: PLUMBING & MECHANICAL SCHEDULES / CALCULATIONS
- E-1: LIGHTING PLAN
- E-2: POWER & SPECIAL SYSTEMS PLAN
- E-3: ELECTRICAL SCHEDULES

26 1649 0184

APPROVAL OF AS-BUILT DRAWINGS
ASST. CITY ENGINEER FIELD
J. Williams
DATE 7/4/84

I certify that these plans are consistent with the specific development plan approved by the Environmental Planning Commission on June 16, 1983.

City Planning _____ Date _____
Traffic Engineering _____ Date _____
City Engineer/MAFCA _____ Date _____
Water Resources _____ Date _____
Parks & Recreation _____



GARNER/HICKS ARCHITECTS
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112 Second St. S.W.
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(505) 243-7492

CITY OF ALBUQUERQUE
FIRE STATION NO. 18

T-1

1649

DRAINAGE PLAN

The following items concerning the Taylor Ranch Fire Station No. 18, Drainage Plan are contained hereon:

1. Vicinity Map
2. Grading Plan
3. Calculations

The proposed improvements, as shown by the Vicinity Map, are located on the east side of Taylor Ranch Drive, N.W. just north of Montano Road, N.W. The site is more particularly described as Taylor Ranch Tract S-1-A. At present, the site is undeveloped.

Research has revealed that the site does not lie within a designated Flood Hazard Zone. Downstream flooding conditions, however, exist. Because of this, the runoff generated by the developed portions of the site will be routed through positive discharge ponds and discharged onto Taylor Ranch Drive. At this point, Taylor Ranch Drive drains to the south.

The Grading Plan shows: 1) existing and proposed grades indicated by spot elevations and contours at 1'-0" intervals, 2) continuity between existing and proposed elevations, and 3) the limit and character of the proposed improvements. As shown by this plan, the proposed improvements include the construction of a fire station, along with paving and landscaping. At present, runoff flows from north to south to a depressed area which lies on the south end of the site. Once this depression fills with water, runoff flows to the east. The runoff generated within Basin 3 will continue to follow this trend. The runoff generated by Basins 1 and 2 however, will be routed through positive discharge ponds and will ultimately drain onto Taylor Ranch Drive. Taylor Ranch Drive drains to the south as mentioned above.

The Calculations which appear below analyze both the existing and developed conditions for the 100-year, 6-hour rainfall event. The Rational Method has been used for this analysis in accordance with the City of Albuquerque Development Process Manual, Volume II. The evaluation of pond release rates is based upon the Orifice Equation.

Calculations

Ground Cover Information

1. From SCS Bernalillo County Soil Survey, Plate 20:
NWA Madurez Wink-Association
Hydrologic Soil Group B

2. Existing Condition

$$\begin{aligned} A_{\text{total}} &= 1 \text{ Ac} \pm \\ A_{\text{imp}} &= 0 \\ \% \text{ impervious} &= 0\% \\ C &= 0.34 \text{ (DPM Plate 22.2C-1)} \end{aligned}$$

3. Developed Condition

- a. Basin 1
 $A = 7230 \text{ sf} = 0.17 \text{ Ac} \pm$
 $A_{\text{imp}} = 3530 \text{ sf}$
 $\% \text{ impervious} = 49\%$
 $C = 0.57 \text{ (DPM Plate 22.2 C-1)}$
- b. Basin 2
 $A = 20,680 \text{ sf} = 0.47 \text{ Ac} \pm$
 $A_{\text{imp}} = 12,320 \text{ sf}$
 $\% \text{ impervious} = 60\%$
 $C = 0.63 \text{ (DPM Plate 22.2 C-1)}$
- c. Basin 3
 $A = 15,680 \text{ sf} = 0.36 \text{ Ac} \pm$
 $A_{\text{imp}} = 0$
 $\% \text{ impervious} = 0\%$
 $C = 0.34 \text{ (DPM Plate 22.2 C-1)}$

Rational Method

1. Discharge: $Q = CIA$
where C varies
 $i = P_0(6.84)T^{-0.51} = 4.65 \text{ in/hr}$
 $P_0 = 2.2 \text{ in (DPM Plate 22.2D-1)}$
 $T_0 = 10 \text{ min (minimum)}$
 $A = \text{area, Ac}$
2. Volume: $V = CP_0A(1/12)$
where C varies
 $P_0 = 2.2 \text{ in (DPM Plate 22.2D-1)}$
 $A = \text{area, sf}$

Hydrology

1. Existing Condition

$$\begin{aligned} Q_{100} &= 0.34(4.65)(1) = 1.6 \text{ cfs (to east)} \\ V_{100} &= 0.34(2.2/12)(43,560) = 2715 \text{ cf} \end{aligned}$$

2. Developed Condition

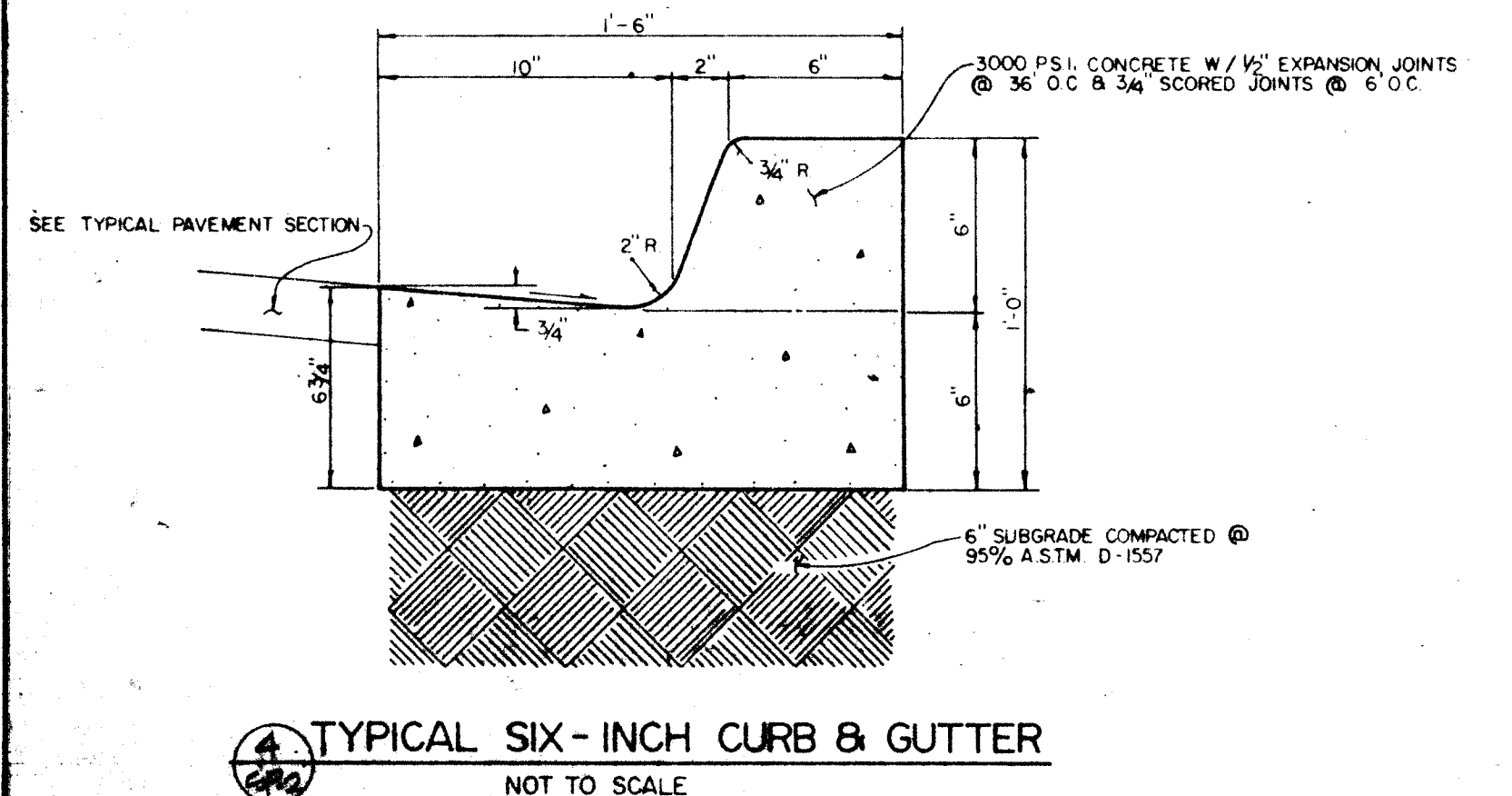
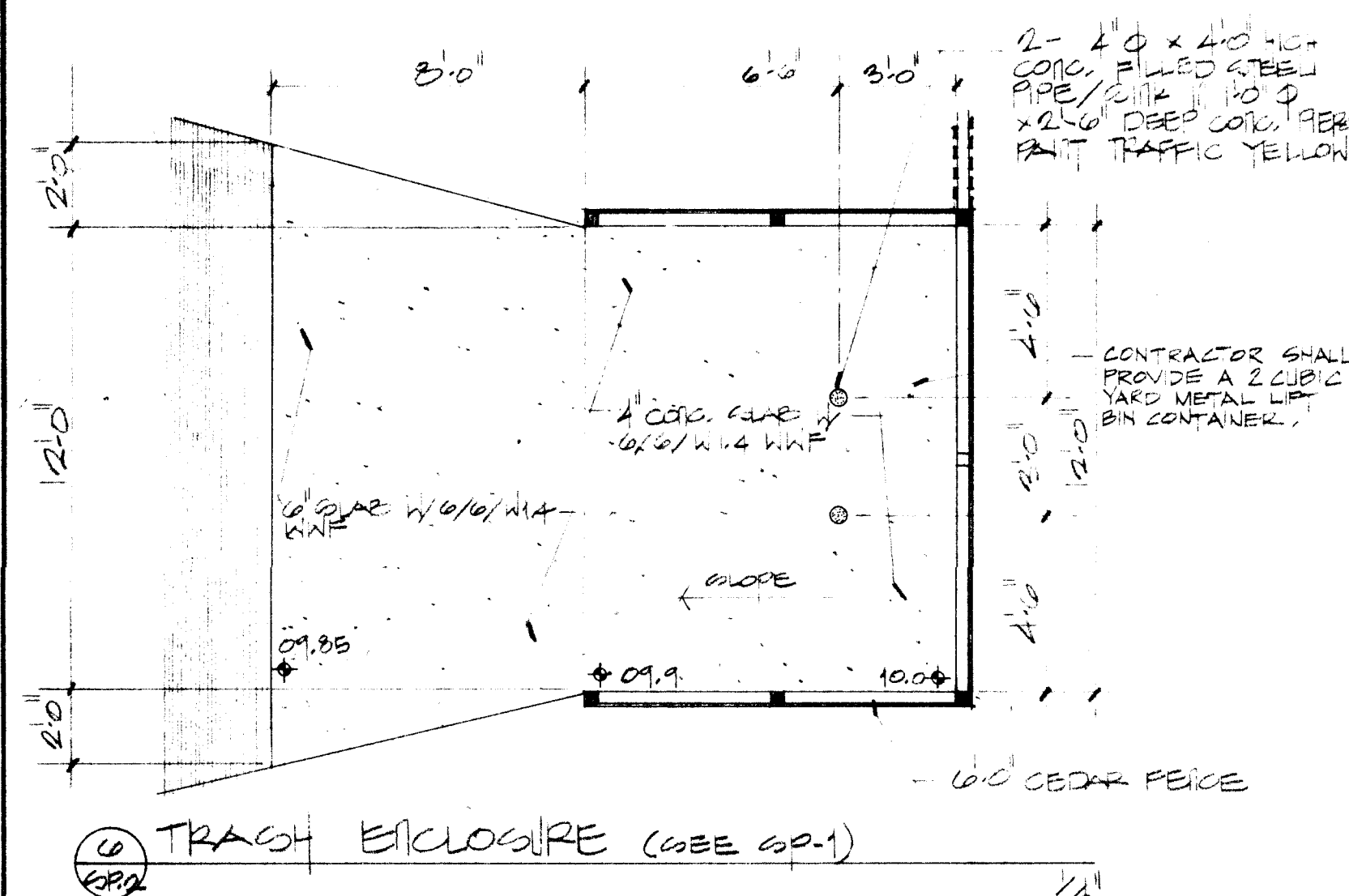
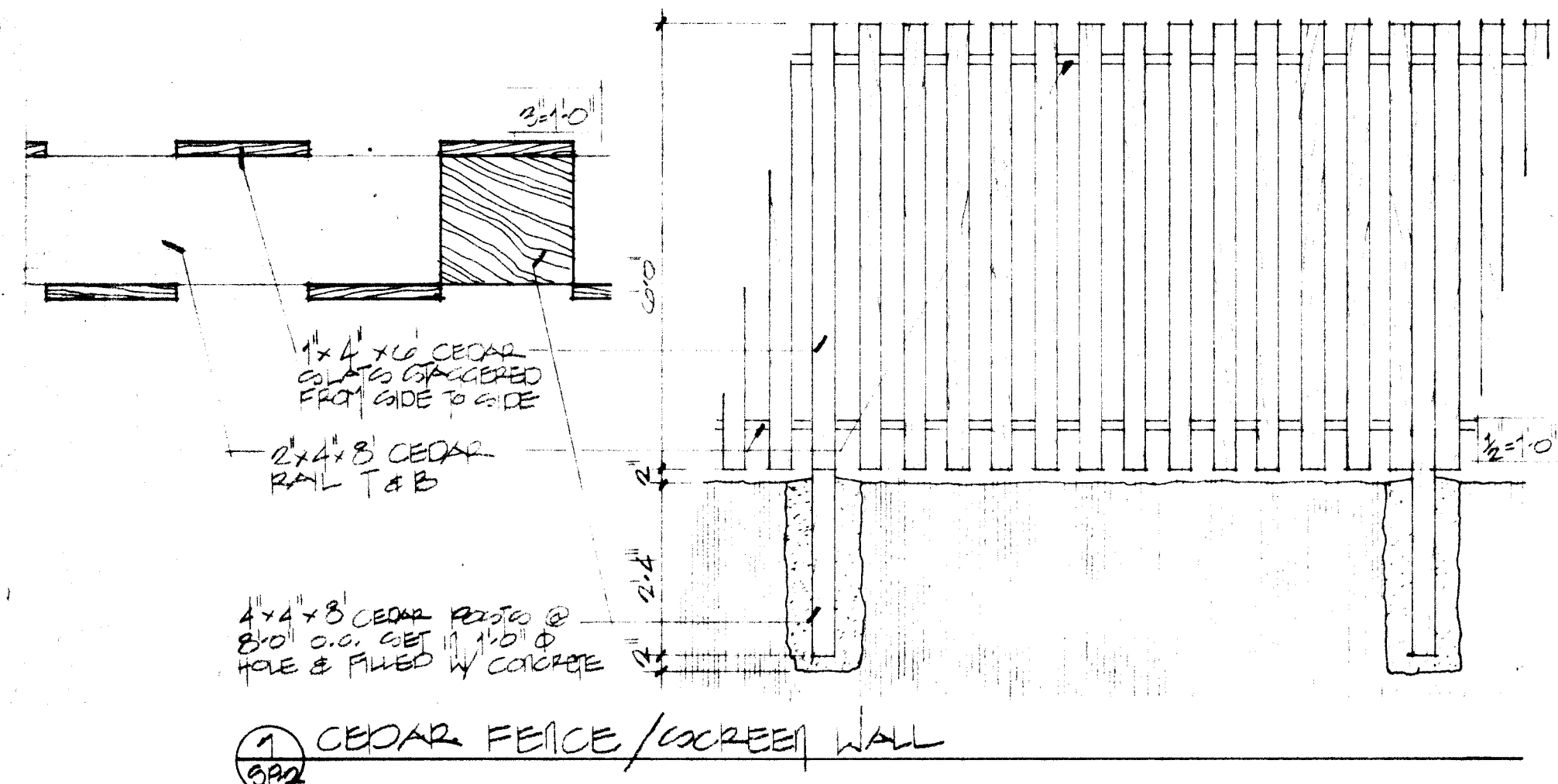
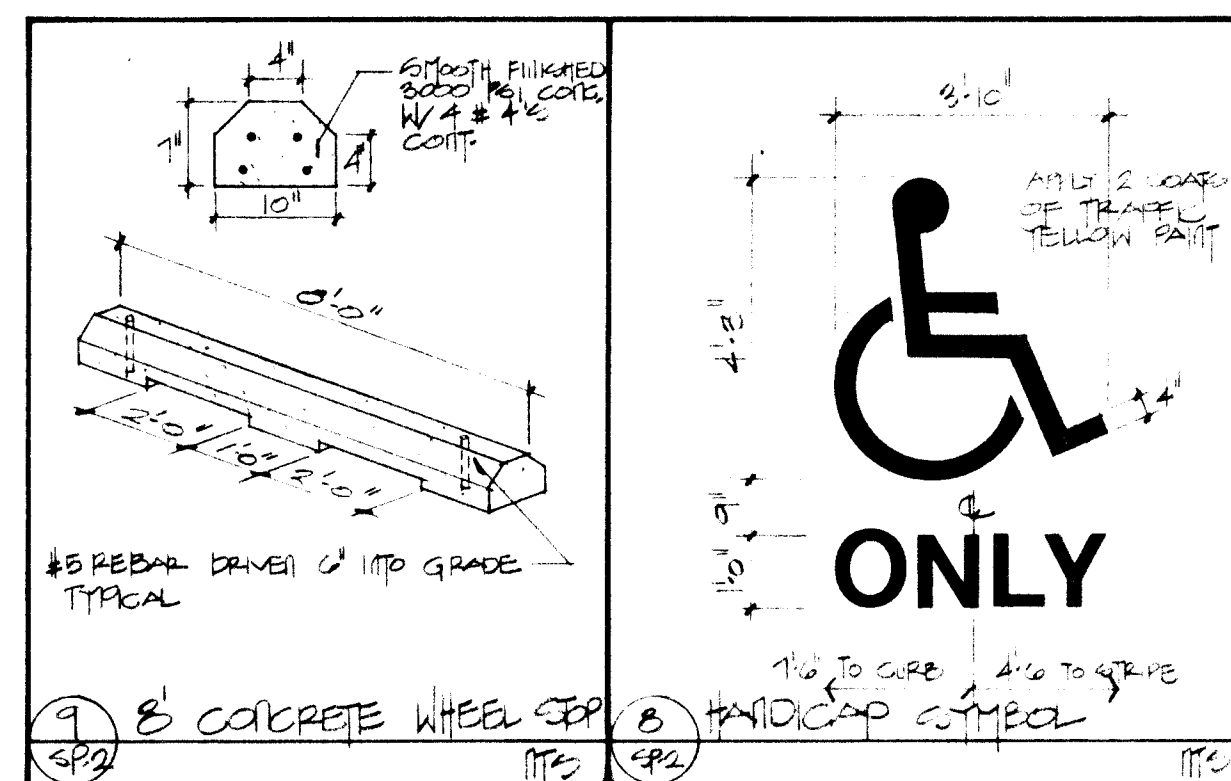
- a. Basin 1
 $Q_{100} = 0.57(4.65)(0.17) = 0.45 \text{ cfs (to street)}$
 $V_{100} = 0.57(2.2/12)(7230) = 756 \text{ cf}$
 $V_{\text{pond}} = 538 \text{ cf}$
 $V_{\text{pond}} = 1/2(A_{9.1} + A_{9.25})(9.25 - 9.1) + 1/2(A_{9.25} + A_{9.72})(9.72 - 9.25)$
 $= 1/2(0+600)(0.15) + 1/2(600+1500)(0.47)$
 $Q_{\text{release}} = C\sqrt{2gh}A = 0.8\sqrt{2(32.2)(0.45)}(0.0873)$
 $= 0.38 \text{ cfs } Q_{100} \text{ + pond volume ok}$
- b. Basin 2
 $Q_{100} = 0.63(4.65)(0.47) = 1.4 \text{ cfs (to street)}$
 $V_{100} = 0.63(2.2/12)(20,680) = 2389 \text{ cf}$
 $V_{\text{pond}} = 1211 \text{ cf} > V_{\text{required}}$
 $V_{\text{pond}} = 1/2(A_{8.3} + A_{8.5})(8.5 - 8.3) + 1/2(A_{8.5} + A_9)(9 - 8.5)$
 $+ 1/2(A_9 + A_{9.1})(9.1 - 9)$
 $= 1/2(0+940)(0.2) + 1/2(940+2440)(0.5)$
 $+ 1/2(2440+3000)(0.1)$
 $Q_{\text{release}} = 0.8\sqrt{2(32.2)(0.45)}(0.0873)$
 $= 0.44 \text{ cfs}$

By hydrograph analysis, $V_{\text{required}} = 1181 \text{ cf}$

- c. Basin 3
 $Q_{100} = 0.34(4.65)(0.36) = 0.6 \text{ cfs (to east)}$
 $V_{100} = 0.34(2.2/12)(15,680) = 977 \text{ cf}$
This area not intended for development.
No ponding proposed.

3. Comparison

- a. Discharge to east
 $Q_{100} = 1.6 - 0.6 = 1 \text{ cfs decrease}$
 $\Delta V_{100} = 2715 - 977 = 1738 \text{ cf decrease}$
- b. Discharge to Taylor Ranch Drive
 $Q_{100} = 0 - (0.38 + 0.44) = (0.8) \text{ cfs increase}$
 $\Delta V_{$



GENERAL NOTE:

- Contractor to verify exact size, location and depth of all exist'g utilities.

KEYED NOTES:

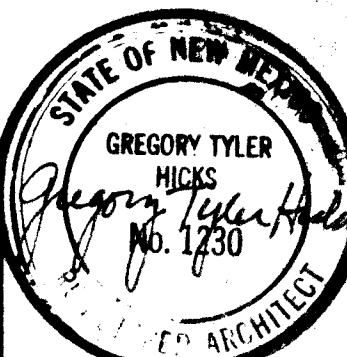
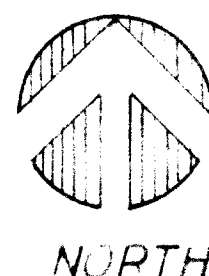
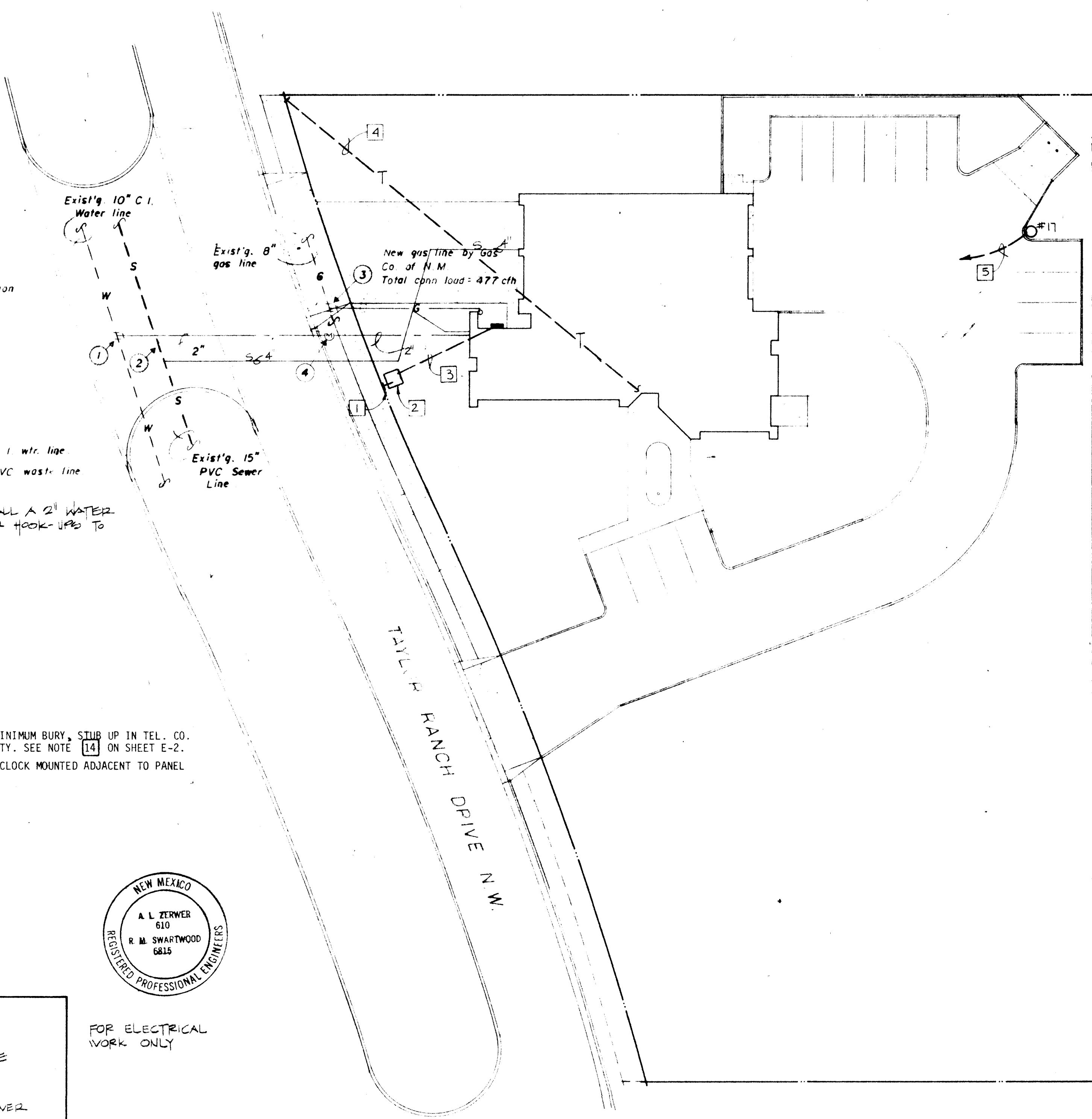
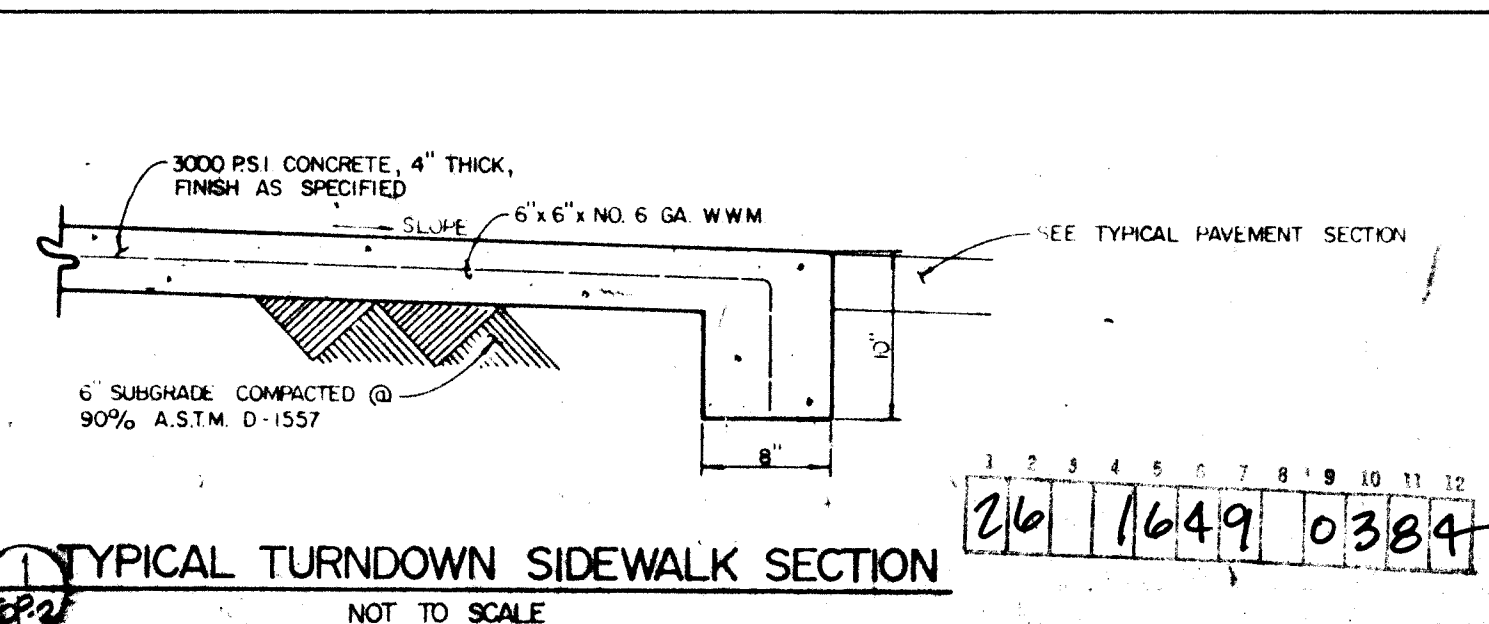
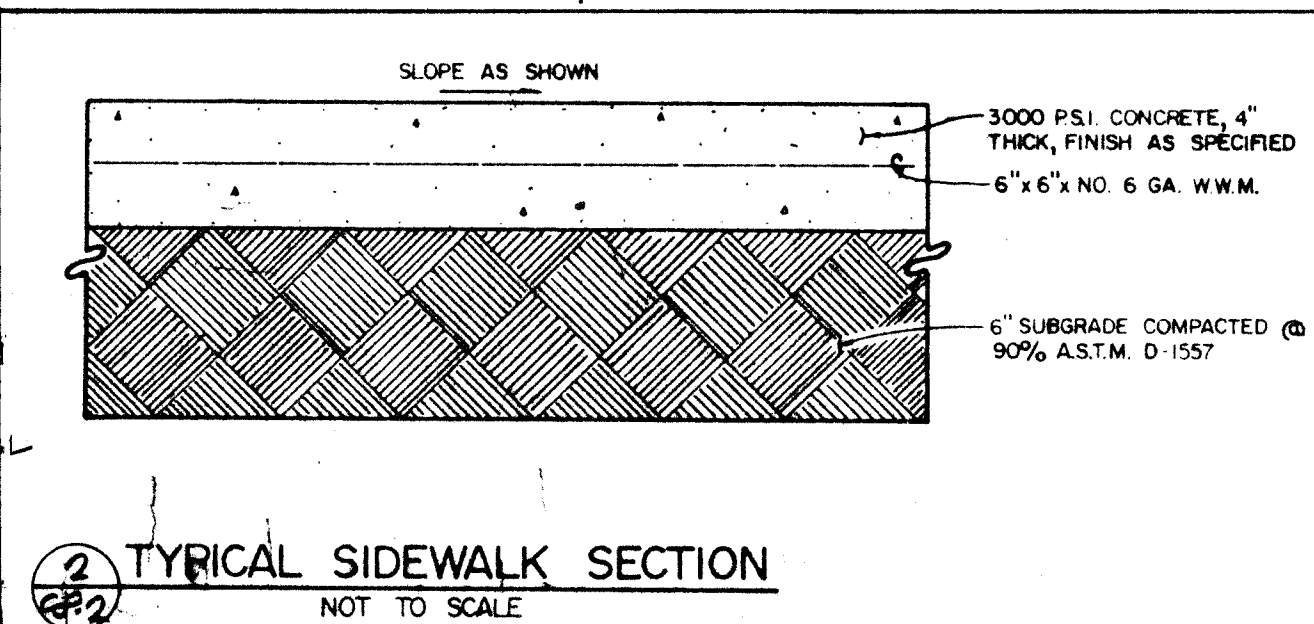
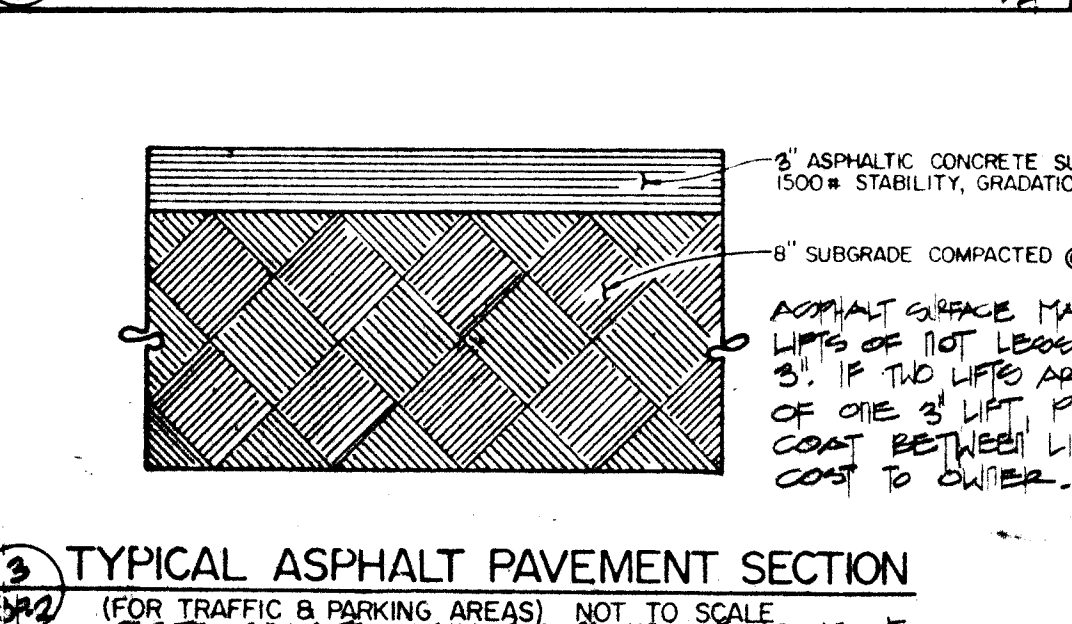
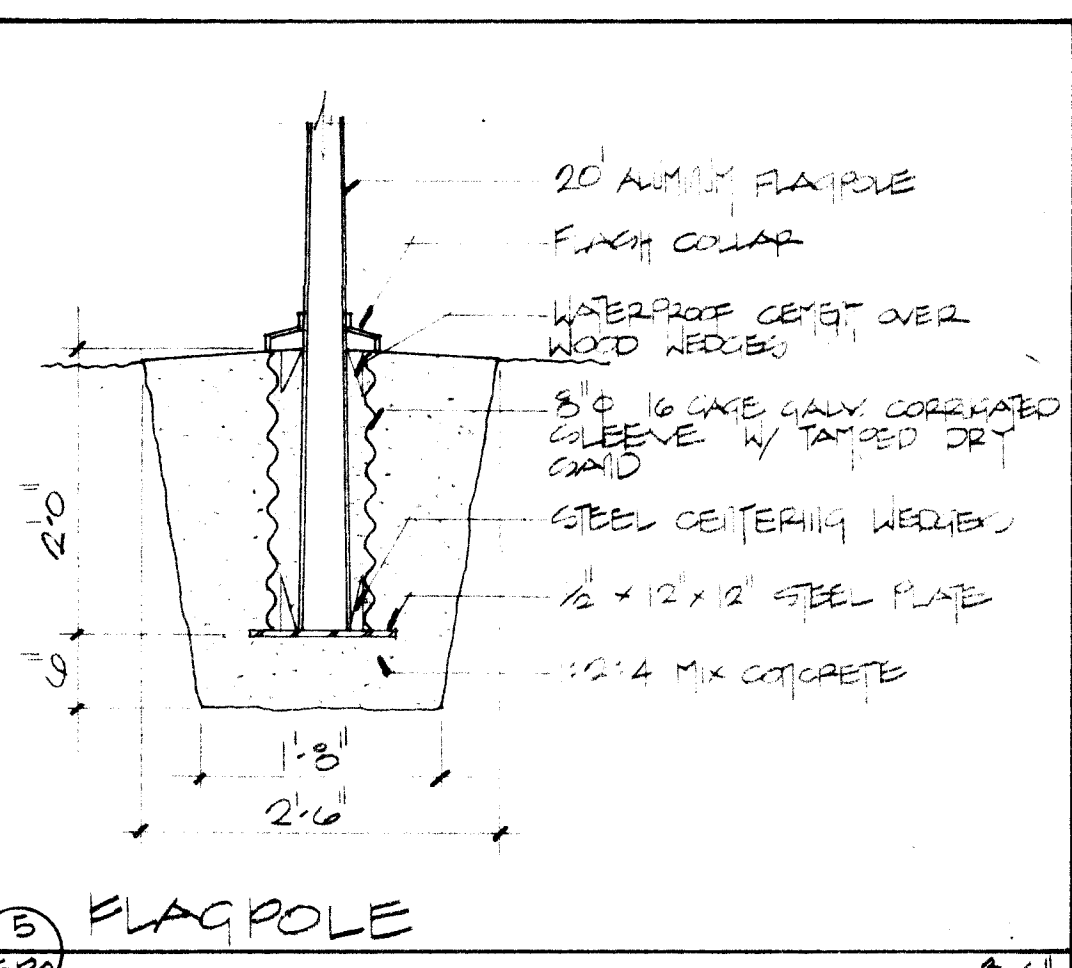
- Conn. 2\" water line to exist'g 10\" C.I. wtr. line
- Conn. 4\" waste line to exist'g 15\" PVC waste line
- Gas conn. by Gas Co. of N.M.
- CONTRACTOR WILL FURNISH & INSTALL A 2\" WATER & WILL PAY ALL CHARGES FOR TAP-UPS TO WATER SYSTEM.

ELECTRICAL CONSTRUCTION NOTES

- SEE NOTE 1 ON SHEET E-3.
- SEE NOTES 2 AND 3 ON SHEET E-3.
- SEE NOTE 4 ON SHEET E-3.
- 2 - 2\" C. (PVC) FOR TEL. CO. USE, 18\" MINIMUM BURY, SLIP UP IN TEL. CO. PEDESTAL AT NORTH WEST CORNER OF PROPERTY. SEE NOTE 14 ON SHEET E-2.
- 2 - #10 THW-1/2\" C. TO ASTRO DIAL TIME CLOCK MOUNTED ADJACENT TO PANEL "A", ON CIRCUIT A-9.



FOR ELECTRICAL WORK ONLY



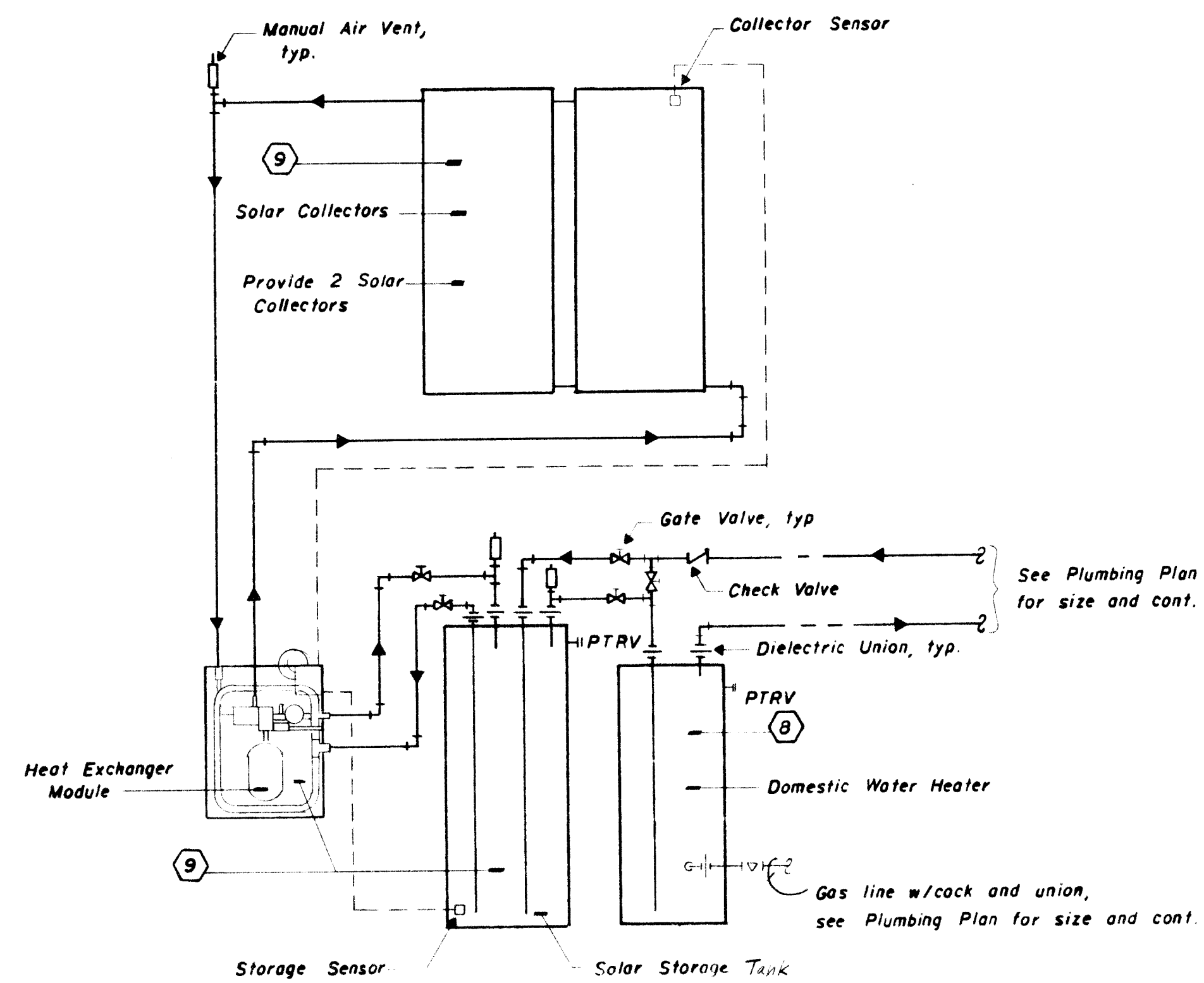
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CITY OF ALBUQUERQUE
FIRE STATION NO. 18

UTILITY SITE PLAN
SITEWORK DETAILS

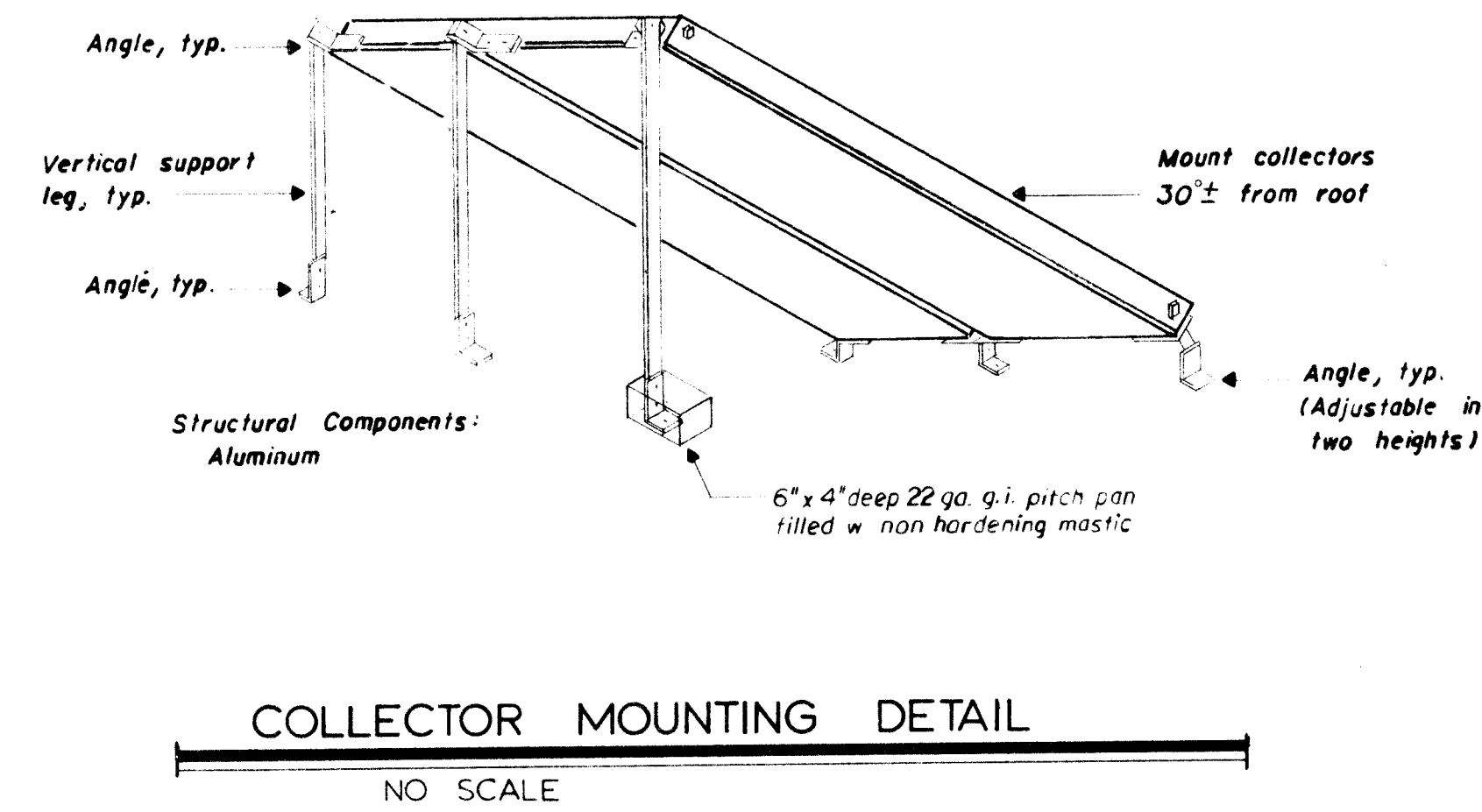
SP.2

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WATER HEATER and SOLAR STORAGE TANK DETAIL

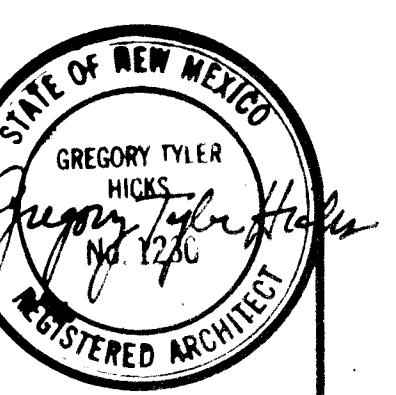
NO SCALE



CITY OF ALBUQUERQUE
FIRE STATION NO. 18

GOAL TO
WATER
DETAILS

M-3



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