

# CITY OF ALBUQUERQUE

Hydrology Section Planning Department  
David S. Campbell, Director



Timothy M. Keller, Mayor

June 7, 2019

Vince Carrica, P.E.  
Tierra West, LLC  
5571 Midway Park Place, NE  
Albuquerque, NM 87109

**RE: BEK Distribution Facility – 601 Gallatin Pl. NW  
G&D Plan and Drainage Report Engineers Stamp Date: 5/16/2019,  
Hydrology File: FJ10D002G1**

Dear Mr. Carrica,

Based on the information provided in your submittal received on May 17, 2019 the development can't be approved for Site Plan for Building Permit or Building Permit until the following comments are addressed,

1. The contours on the steep slopes along the west side indicate a 2.6:1 slope. Please either change the slope label from 3:1 to 2.6:1 or change the contours.
2. Please add a note near the west slope that states "All disturbed areas must be stabilized prior to Engineer's Certification for Certificate of Occupancy".
3. The Landscape Plan included in the Site Plan application must be corrected to match the Site Plan and G&D Plan in the west portion of the site as that will be used to identify the steep slope stabilization required in 2 above. Please include a copy of the revised landscape plan when resubmitting the G&D Plan to Hydrology.
4. Keyed note 12 on the Site Plan indicates future parking. Is that area to be paved now with this building permit? If not, then don't hatch the area not being paved on the G&D Plan for Building Permit and provide a separate Conceptual G&D Plan for Site Plan labeled NOT FOR CONSTRUCTION showing paving of future parking. Identify how the future parking will be graded now on the G&D Plan for Building Permit. Also identify how the future building pads will be graded to drain especially where future roof drains are planned to direct that drainage away from the adjacent public streets and into the ponds. The Landscape Plan should be modified to show both the interim and final stabilization in the future areas..
5. Key note 25 on the Site Plan calls for a 6" temporary header curb that is not shown on the G&D Plan. Please revise one or the other so they agree, and provide a copy of the revised Site Plan when resubmitting to hydrology. If the temporary curb is to remain please add details of the curb on the G&D Plan with spot elevation that show how the parking lot will drain thru the curb.
6. How will drainage get out of the sump in the C&G on the east side of the Staging area?

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7. Surface drainage in the future staging area and the future parking lot next to the pond appears to enter the pond in two places but only one has a rundown. Lined conveyance systems should be added to the plan to convey drainage from the paving proposed with this building permit through the future paving area and into the pond. Please revise the G&D Plan adding lined swales and typical sections through the future north parking area and into the north pond.
8. Please label the contours in the north east corner of the parking lot and verify that the spot elevations agree with the contours. If they are not 5141 and 5142 then please revise the grading to decisively contain the parking lot drainage and convey it into the north pond.
9. The contours indicate excessively steep slopes west of the staging/parking lot about 350' south of the northwest corner of the site. The contours indicate erratic slopes varying from 1% to 10% with abrupt grade changes in the northwesterly 250' of the staging/parking lot. Please revise the grading.
10. The Contours between 5140 and 5150 indicate a slope of about 2:1 on top of the sidewalk in the public right of way at the west end of Fortuna. Please revise the grading and add a typical section to the G&D Plan showing the sidewalk, ROW line and slope. If a retaining wall is added, show the footer with dimensions from the footer to the ROW line. Also show the fence on the G&D Plan and in the section with dimensions.
11. Additional right of way may be needed for the hammerhead turnaround at the west end of Fortuna Rd. Please coordinate with transportation and show the right of way dedication on the G&D plan.
12. Please add the fence to the legend. Please also identify the bold line style - line, dot, line, dot - shown in the buffer between the street and parking lot in the north east corner of the site.
13. Please show the PNM easement adjacent to and on this tract in the west corner. Either revise the plan to eliminate the grading within the easement or provide written permission from PNM for grading inside of their easement.
14. The finished contours are missing between the east side of the parking lot and the street in Gallatin Place and Los Volcanes Road. Please show proposed contours all of the way to the existing street to indicate the proposed grade of the sidewalk in the public right of way and the landscape area on the private side of the sidewalk. Also please add a few typical sections showing the existing C&G the new sidewalk, the ROW line, the fence, and the slope and/or retaining wall with dimensions both horizontal and vertical. Please include the area between the parking lot and the Right of way in the sections. The area appears to be wide enough to add retention ponds which may be required to limit the discharge to the allowable rates.
15. HGL calculations are required for the storm drain in the north east corner of the site where failure of the storm drain could result in excessive stormwater runoff to public streets. Also please add a profile and HGL calculations for the storm drain on the south and east side of the building.



# CITY OF ALBUQUERQUE

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16. Please add a statement to the first page of the G&D Plan stating: "The retention ponds and storm drains on this site are to be maintained by the owner of the property. Maintenance inspections may be conducted by the City and maintenance may be enforced by the City in accordance with the drainage easement recorded on the Plat recorded in the Bernalillo County records room Book and page. Any modification to this plan must be shown on a plan stamped by an Engineer and submitted to City Hydrology for approval prior to construction."
17. Please add a statement to the first page of the G&D Plan stating: "The Drainage Management Plan for this sight is in accordance with the 2007 Meridian Business Park II plan. The allowable discharge is 0.1 cfs/acre so the allowable discharge for this 50.35 acre site plus the 4.2 acres offsite area is 5.45 cfs. The entire site, with the exception of the landscape areas on the east side of the site, will drain into onsite retention ponds sized for the storm water runoff volume from the 100 year- 10 day storm. Each pond is equipped with an overflow spillway with the capacity to discharge the 100 year peak rate of flow going into the pond."
18. Non-erosive Emergency overflow spillways with capacity for the peak 100 year flow rate are required for each pond with a potentially erosive embankment. The north, east, and west ponds do not have embankments. However the south pond must have a non-erosive spillway. Please number the ponds on the G&D Plan and include a label on each with the peak 100 year flow rate, the 100 year 10 day volume and elevation, the spillway crest elevation, the spillway flow depth, and the dam top elevation.
19. The runoff calculations in the Drainage Report need to be modified. Land treatment B has been excessively used and should be replaced with treatment C unless the ground cover is irrigated lawns on flat slopes. The 100 year 10 day volume must be calculated for use in sizing retention ponds. The precipitation depths, runoff rates, and volumes in the draft DPM, available on the Hydrology Section web site, may be used instead of the old DPM values, and are lower than the old values. Please provide the excel file with the digital resubmittal.
20. Please revise the pond volume calculations to use the Conic approximation method (the volume of a frustum) =  $h/3 \times [b1 + b2 + \sqrt{b1 \times b2}]$  where h is the height between the two areas, and b1 and b2 are the areas of the contours. The method used in the report overestimates the volume of the ponds.
21. Please revise the Drainage Basin map to include a graphic scale, north arrow, flow arrows indicating the discharge point of each basin and roof drainage patterns. The paper copy must be scalable.

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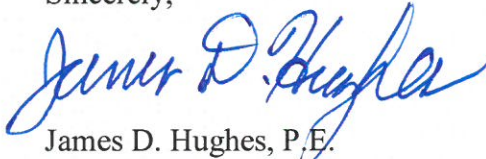
NM 87103

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22. It appears that curb opening details and design calculations may be missing. Please identify how the drainage from Basins 8 and 9 gets into Inlet # 3. Also please identify how the drainage from basin 24 gets into the south pond by including details on the G&D Plan and calculations in the report. The engineering design analysis must demonstrate that the peak 100 year flow rates are intercepted by onsite drainage structures and prevented from entering the public right of way.
23. Please show the existing meandering sidewalk and concrete driveways and HC ramps along Los Volcanes Rd clearly indicating what items are to be removed and replaced with C&G and new sidewalk and label each on the G&D Plan.
24. Please revise the grading of the south pond so a floodwall is not expected to hold back drainage.
25. Please show the existing storm drains in Los Volcanes both private and public. Show and label the private drainage easement from Coke's pond west of this site where it crosses through this site.

If you have any questions, you can contact me at 924-3686 or [jhughes@cabq.gov](mailto:jhughes@cabq.gov) .

Sincerely,



James D. Hughes, P.E.  
Principal Engineer, Planning Dept.  
Development and Review Services





# City of Albuquerque

## Office Copy

Planning Department  
Development & Building Services Division

### DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 6/2018)

Project Title: BEK Distribution Facility Building Permit #: \_\_\_\_\_ Hydrology File #: \_\_\_\_\_

DRB#: \_\_\_\_\_ EPC#: \_\_\_\_\_ Work Order#: \_\_\_\_\_

Legal Description: LT 1-A AD LOT 8-A UNSER TOWNE CROSSING

City Address: 601 GALLATIN PL NW ALBUQUERQUE NM 87121

Applicant: TIERRA WEST LLC Contact: VINCE CARRICA

Address: 5571 MIDWAY PARK PLACE NE ALBUQUERQUE NM 87109

Phone#: 505-858-3100 Fax#: 505-858-1118 E-mail: vcarrica@tierrawestllc.com

Other Contact: \_\_\_\_\_ Contact: \_\_\_\_\_

Address: \_\_\_\_\_

Phone#: \_\_\_\_\_ Fax#: \_\_\_\_\_ E-mail: \_\_\_\_\_

TYPE OF DEVELOPMENT: \_\_\_\_\_ PLAT (# of lots) \_\_\_\_\_ RESIDENCE ☒ DRB SITE \_\_\_\_\_ ADMIN SITE \_\_\_\_\_

IS THIS A RESUBMITTAL? \_\_\_\_\_ Yes ☒ No \_\_\_\_\_

DEPARTMENT \_\_\_\_\_ TRANSPORTATION ☒ HYDROLOGY/DRAINAGE

Check all that Apply:

#### TYPE OF SUBMITTAL:

\_\_\_\_ ENGINEER/ARCHITECT CERTIFICATION

\_\_\_\_ PAD CERTIFICATION

☒ CONCEPTUAL G & D PLAN

☒ GRADING PLAN

☒ DRAINAGE REPORT

\_\_\_\_ DRAINAGE MASTER PLAN

\_\_\_\_ FLOODPLAIN DEVELOPMENT PERMIT APPLIC

\_\_\_\_ ELEVATION CERTIFICATE

\_\_\_\_ CLOMR/LOMR

\_\_\_\_ TRAFFIC CIRCULATION LAYOUT (TCL)

\_\_\_\_ TRAFFIC IMPACT STUDY (TIS)

\_\_\_\_ STREET LIGHT LAYOUT

\_\_\_\_ OTHER (SPECIFY) \_\_\_\_\_

\_\_\_\_ PRE-DESIGN MEETING?

#### TYPE OF APPROVAL/ACCEPTANCE SOUGHT:

☒ BUILDING PERMIT APPROVAL

\_\_\_\_ CERTIFICATE OF OCCUPANCY

\_\_\_\_ PRELIMINARY PLAT APPROVAL

\_\_\_\_ SITE PLAN FOR SUB'D APPROVAL

☒ SITE PLAN FOR BLDG. PERMIT APPROVAL

\_\_\_\_ FINAL PLAT APPROVAL

\_\_\_\_ SIA/ RELEASE OF FINANCIAL GUARANTEE

\_\_\_\_ FOUNDATION PERMIT APPROVAL

\_\_\_\_ GRADING PERMIT APPROVAL

\_\_\_\_ SO-19 APPROVAL

\_\_\_\_ PAVING PERMIT APPROVAL

\_\_\_\_ GRADING/ PAD CERTIFICATION

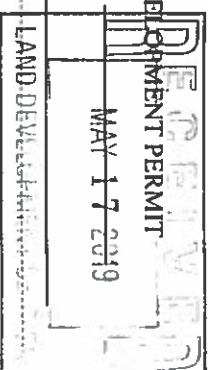
\_\_\_\_ WORK ORDER APPROVAL

\_\_\_\_ CLOMR/LOMR

\_\_\_\_ FLOODPLAIN DEVELOPMENT PERMIT

\_\_\_\_ OTHER (SPECIFY) \_\_\_\_\_

DATE SUBMITTED: 5/17/2019 By: Vince Carrica



COA STAFF \_\_\_\_\_

ELECTRONIC SUBMITTAL RECEIVED \_\_\_\_\_

FEE PAID \_\_\_\_\_

DRAINAGE REPORT

For

601 Gallatin Pl. NW  
ALBUQUERQUE, NEW MEXICO

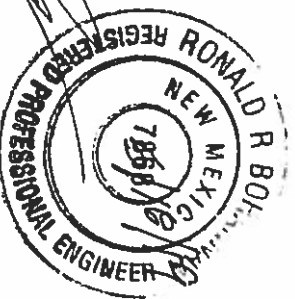
Prepared by

Tierra West, LLC  
5571 Midway Park Place NE  
Albuquerque, New Mexico 87109

Prepared for

Ben E. Keith  
Albuquerque, NM

May 10, 2019



Ronald R. Bohannon, PE #7868

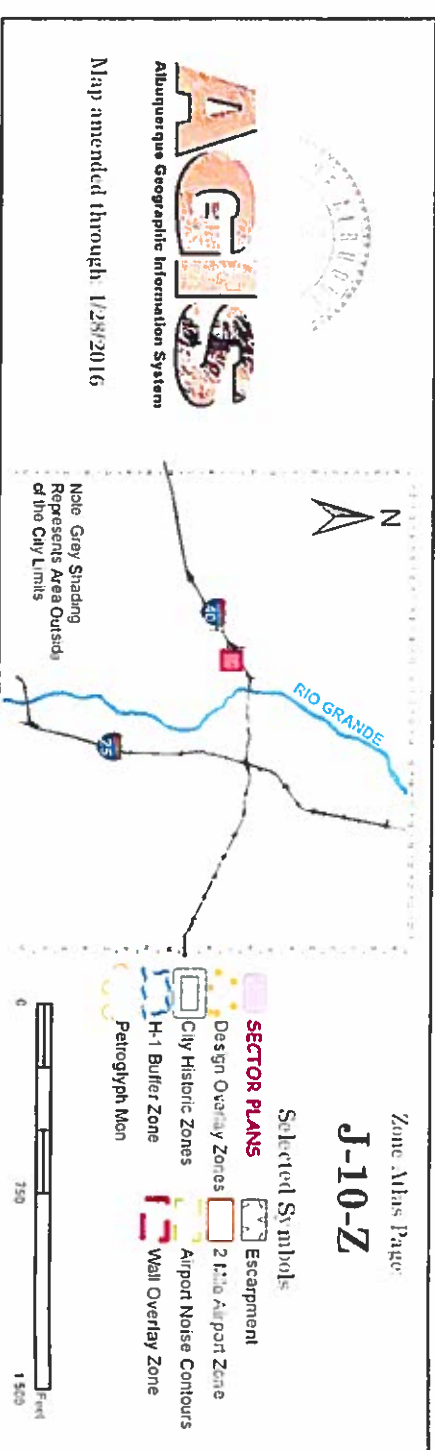


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For more current information and details visit <http://www.cabq.gov/gis>







## **LOCATION**

The proposed commercial development is located off Gallatin Place south of Interstate 40, east of Unser Blvd at the corner of Los Volcanes and Gallatin Pl in southwest Albuquerque. It is comprised of approximately 50.35 acres zoned NR-BP. This report represents a drainage management and grading plan for approval by the City of Albuquerque, for Site Plan, grading and Building Permit submittal.

## **DRAINAGE BASIN DESIGNATION**

The drainage basins for proposed conditions are as indicated on the BASIN MAP included in this report. The site is broken into 34 onsite drainage basins and one upland offsite basin to the west within the Coca Cola Lot 16 parcel.

## **EXISTING DRAINAGE CONDITIONS**

The site is currently vacant with several earthen detention ponds constructed onsite. It drains predominantly northwest to southeast. Runoff from an upland undeveloped basin that is within the Coca Cola Lot 16 drains onto the site. This runoff is combined with the onsite runoff and routed through existing detention ponds before being released to Los Volcanes Rd, which then drains to the east per the Atrisco Business Park Master Drainage Plan for fully developed conditions, dated February of 1992.

## **FIRM MAP**

The site is not located in a flood plain as is shown on designated Flood Hazard Zone Map No. 35001C0328J dated 11/4/2016.

## **DESIGN-CRITERIA**

The drainage plan presented in this report was prepared in accordance with the City of Albuquerque Drainage Ordinances and the Development Process Manual DPM. The hydrological analysis is based on the 100-year frequency, 6-hour duration storm. The plan will also include retention of the first flush in on-site drainage ponds. See attached Weighted E Table for excess precipitation values calculated for this site.



National Flood Hazard Layer FIRMette



35°5'43.32"N



Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

- SPECIAL FLOOD HAZARD AREAS**
    - Without Base Flood Elevation (BFE)
    - With BFE or Depth
    - Regulatory Floodway
    - 0.2% Annual Chance Flood Hazard. Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile
    - Future Conditions 1% Annual Chance Flood Hazard
    - Area with Reduced Flood Risk due to Levee. See Notes.
    - Area with Flood Risk due to Levee
  - OTHER AREAS OF FLOOD HAZARD**
    - Area of Minimal Flood Hazard
    - Effective LOMRs
    - Area of Undetermined Flood Hazard
  - GENERAL STRUCTURES**
    - Channel, Culvert, or Storm Sewer
    - Levee, Dike, or Floodwall
  - OTHER FEATURES**
    - Cross Sections with 1% Annual Chance Water Surface Elevation
    - Coastal Transect
    - Base Flood Elevation Line (BFE)
    - Limit of Study
    - Jurisdiction Boundary
    - Coastal Transect Baseline
    - Profile Baseline
    - Hydrographic Feature
  - MAP PANELS**
    - Digital Data Available
    - No Digital Data Available
    - Unmapped
- The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards.

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 1/31/2019 at 6:29:47 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

#### DEVELOPED-DRAINAGE CONDITIONS

The site is proposed to be developed with a single user, Ben E. Keith food distribution facility that will be constructed in phases. No offsite flows will enter the site with the exception of the upland basin in the Coca Cola Lot 16 undeveloped portion (approximately 4.2 acres), which will continue to be routed through the subject site until it is developed in the future. Runoff from the site will be routed to four onsite drainage ponds. Discharge from the overall site will be equal to or less than the allowable 0.1 cfs per acre. The total onsite acreage is 50.35 acres. The offsite upland acreage is 4.2 acres. The allowable discharge at 0.1 cfs per acre for the total 54.55 acres is 5.45 cfs. This is in compliance with the Atrisco Business Park Master Drainage Plan for fully developed conditions dated February of 1992. The drainage ponds will retain the first flush retention volumes as required by the drainage ordinance.

Refer to enclosed Weighted E computation spreadsheet for developed runoff conditions. Storm drain capacities are listed in a table in the appendix along with ponding capacities.

#### SUMMARY

The proposed grading and drainage plan for the proposed development of the existing undeveloped property includes surface flows and an onsite storm drain to convey runoff to retention ponds. Runoff from the overall site will be equal to or less than 0.1 cfs per acre.



VOLUME CALCULATIONS

BEK  
NORTH POND

- Ab - Bottom Of The Pond Surface Area
- At - Top Of The Pond Surface Area
- D - Water Depth
- Dt - Total Pond Depth
- C - Change In Surface Area / Water Depth

Volume =  $Ab * D + 0.5 * C * D^2$

$C = (At - Ab) / Dt$

Ab = 5.511.00

B.O.P. = 5125

Ab = 21.406.00

B.O.P. = 5127

At = 59.609.00

T.O.P. = 5140

Dt = 13.00

C = 2938.69

ACTUAL ELEV.	DEPTH (FT)	VOLUME (AC-FT)	Q (CFS)
5125.00	0	0	0.000
5126.00	0	0.2177	0.000
5127.00	0	0.6179	0.000
5128.00	1.00	1.1430	0.000
5129.00	2.00	1.7357	0.000
5130.00	3.00	2.3957	0.000
5131.00	4.00	3.1233	0.000
5132.00	5.00	3.9183	0.000
5133.00	6.00	4.7807	0.000
5134.00	7.00	5.7106	0.000
5135.00	8.00	6.7080	0.000
5136.00	9.00	7.7729	0.000
5137.00	10.00	8.9052	0.000
5138.00	11.00	10.1050	0.000
5139.00	12.00	11.3722	0.000
5140.00	13.00	12.7069	0.000

Orifice Equation  
 $Q = CA \text{ SQR}(2gh)$

C = 0.6

Diameter (in) 0

Area (ft^2) = 0

g = 32.2

H (Ft) = Depth of water above center of orifice

VOLUME CALCULATIONS

BEK

SOUTH POND

- Ab - Bottom Of The Pond Surface Area
- A1 - Top Of The Pond Surface Area
- D - Water Depth
- D1 - Total Pond Depth
- C - Change In Surface Area / Water Depth

Volume =  $Ab * D + 0.5 * C * D^2$

$C = (A1 - Ab) / D1$

$Ab = 14,771.00$  B.O.P. = 5120

$A1 = 39,220.00$  T.O.P. = 5130

$D1 = 10.00$

$C = 2444.90$

B Elev. = 5,120.00

ACTUAL ELEV.	DEPTH (FT)	VOLUME (AC-FT)	Q (CFS)
5120.00	0	0	0.000
5121.00	1.00	0.3672	0.000
5122.00	2.00	0.7904	0.000
5123.00	3.00	1.2699	0.000
5124.00	4.00	1.8054	0.000
5125.00	5.00	2.3971	0.000
5126.00	6.00	3.0449	0.000
5127.00	7.00	3.7488	0.000
5128.00	8.00	4.5088	0.000
5129.00	9.00	5.3250	0.000
5130.00	10.00	6.1973	0.000

Orifice Equation

$Q = CA \text{ Sqrt}(2gh)$

$C = 0.6$

Diameter (in) = 0

Area (ft^2) = 0

$g = 32.2$

H (ft) = Depth of water above center of orifice

Q (CFS) = Flow

VOLUME CALCULATIONS

BEK

WEST POND

Ab - Bottom Of The Pond Surface Area  
At - Top Of The Pond Surface Area  
D - Water Depth  
Dt - Total Pond Depth  
C - Change In Surface Area / Water Depth

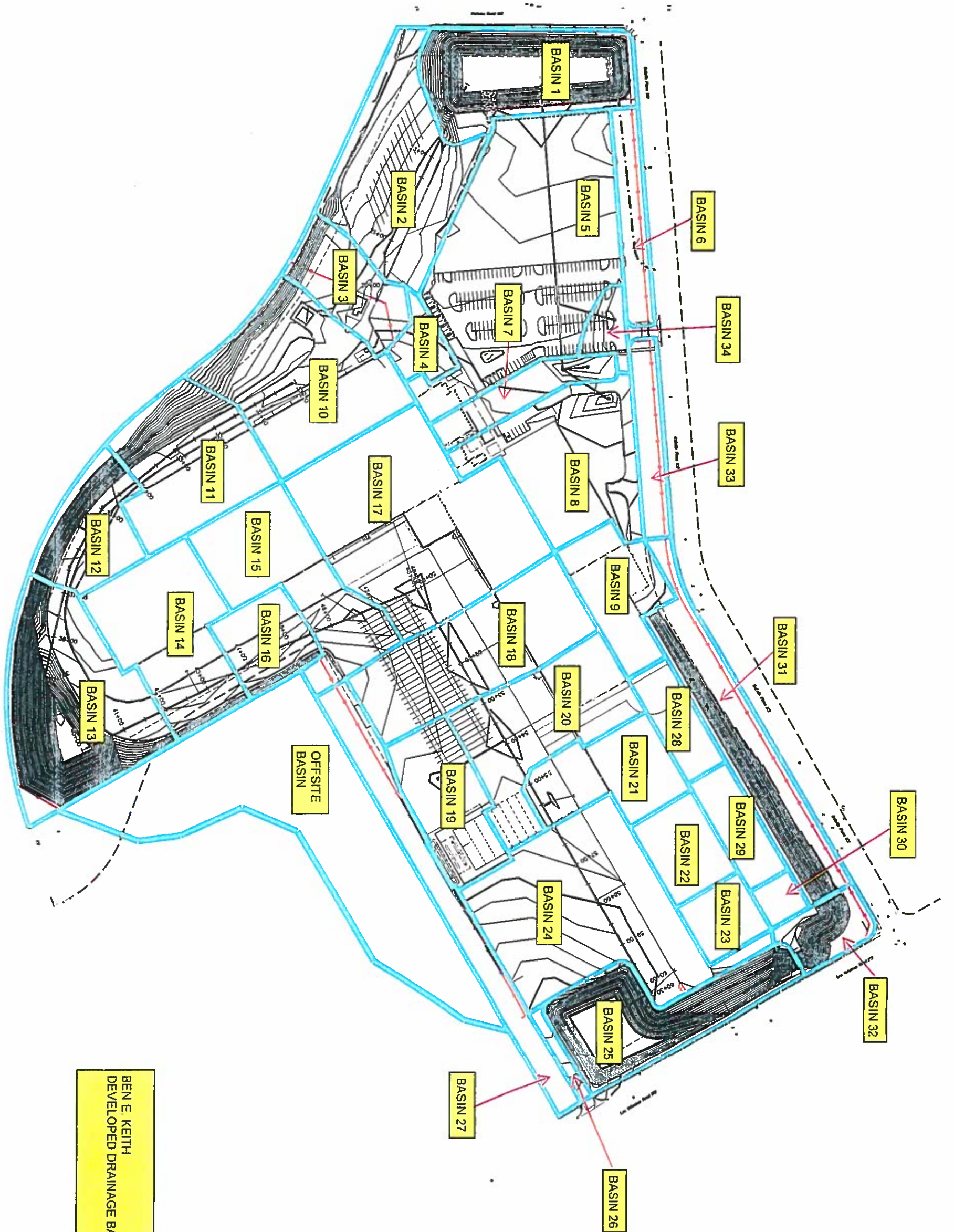
Volume =  $Ab * D + 0.5 * C * D^2$   
C =  $(At - Ab) / Dt$   
Ab = 3,401.00 B.O.P. = 5126  
At = 21,542.00 T.O.P. = 5139  
Dt = 13.00  
C = 1395.46  
B Elev. = 5,126.00

ACTUAL ELEV.	DEPTH (Ft)	VOLUME (AC-Ft)	Q (CFS)
5126.00	0	0	0.000
5127.00	1.00	0.0941	0.000
5128.00	2.00	0.2202	0.000
5129.00	3.00	0.3784	0.000
5130.00	4.00	0.5686	0.000
5131.00	5.00	0.7908	0.000
5132.00	6.00	1.0451	0.000
5133.00	7.00	1.3314	0.000
5134.00	8.00	1.6497	0.000
5135.00	9.00	2.0001	0.000
5136.00	10.00	2.3825	0.000
5137.00	11.00	2.7970	0.000
5138.00	12.00	3.2435	0.000
5139.00	13.00	3.7220	0.000

Orifice Equation  
 $Q = CA \text{ SQRT}(2gH)$

C = 0.6  
Diameter (in) = 0  
Area (ft^2) = 0  
g = 32.2  
H (Ft) = Depth of water above center of orifice  
Q (CFS) = Flow





BEN E. KEITH  
DEVELOPED DRAINAGE BASINS



BEK Ultimate Buildout  
Weighted E Method

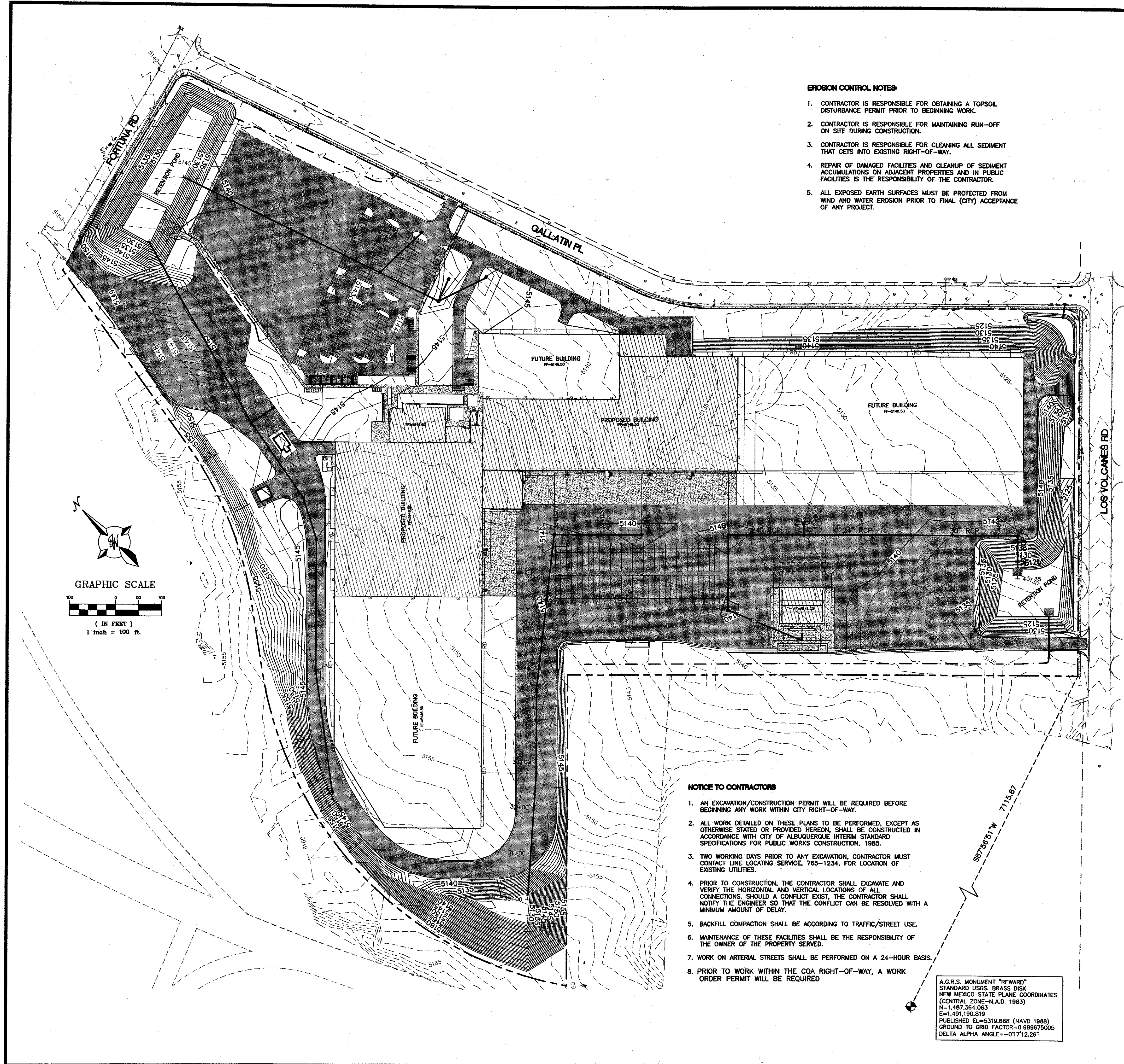
Zone #1  
Developed Basins

Basin	Area (sf)	Area (acres)	Area (sq miles)	Treatment A		Treatment B		Treatment C		Treatment D		100-Year			10-Year			2-Year		
				%	(acres)	%	(acres)	%	(acres)	%	(acres)	Weighted E (ac-ft)	Volume (ac-ft)	Flow cfs	Weighted E (ac-ft)	Volume (ac-ft)	Flow cfs	Weighted E (ac-ft)	Volume (ac-ft)	Flow cfs
1	88,955	2.042	0.00319	0%	0	100%	2.042	0%	0	0%	0.000	0.670	0.114	4.15	0.220	0.037	1.55	0.010	0.002	0.06
2	104,765	2.405	0.00376	0%	0	35%	0.842	0%	0	65%	1.563	1.515	0.304	8.54	0.883	0.177	5.16	0.472	0.094	2.67
3	41,508	0.953	0.00149	0%	0	60%	0.572	0%	0	40%	0.381	1.190	0.094	2.83	0.628	0.050	1.54	0.294	0.023	0.66
4	15,458	0.355	0.00055	0%	0	100%	0.355	0%	0	0%	0.000	0.670	0.020	0.72	0.220	0.007	0.27	0.010	0.000	0.01
5	195,280	4.483	0.00700	0%	0	10%	0.448	0%	0	90%	4.035	1.840	0.687	18.54	1.138	0.425	12.00	0.649	0.242	6.83
6	28,217	0.648	0.00101	0%	0	100%	0.648	0%	0	0%	0.000	0.670	0.036	1.31	0.220	0.012	0.49	0.010	0.001	0.02
7	29,072	0.667	0.00104	0%	0	80%	0.534	0%	0	20%	0.133	0.930	0.052	1.67	0.424	0.024	0.79	0.152	0.008	0.24
8	92,495	2.123	0.00332	0%	0	40%	0.849	0%	0	60%	1.274	1.450	0.257	7.29	0.832	0.147	4.33	0.436	0.077	2.18
9	46,069	1.058	0.00165	0%	0	0%	0.000	0%	0	100%	1.058	1.970	0.174	4.62	1.240	0.109	3.06	0.720	0.063	1.79
10	108,502	2.491	0.00389	0%	0	42%	1.046	0%	0	58%	1.445	1.424	0.296	8.44	0.812	0.168	4.97	0.422	0.088	2.47
11	82,142	1.886	0.00295	0%	0	36%	0.679	0%	0	64%	1.207	1.502	0.236	6.65	0.873	0.137	4.00	0.464	0.073	2.06
12	46,504	1.068	0.00167	0%	0	29%	0.310	0%	0	71%	0.758	1.593	0.142	3.94	0.944	0.084	2.43	0.514	0.046	1.29
13	118,308	2.716	0.00424	0%	0	73%	1.983	0%	0	27%	0.733	1.021	0.231	7.23	0.495	0.112	3.63	0.202	0.046	1.30
14	85,002	1.951	0.00305	0%	0	5%	0.098	0%	0	95%	1.854	1.905	0.310	8.30	1.189	0.193	5.43	0.685	0.111	3.14
15	82,626	1.897	0.00296	0%	0	5%	0.095	0%	0	95%	1.802	1.905	0.301	8.07	1.169	0.188	5.28	0.685	0.108	3.05
16	34,431	0.790	0.00124	0%	0	7%	0.055	0%	0	93%	0.735	1.879	0.124	3.32	1.169	0.077	2.17	0.670	0.044	1.24
17	163,508	3.754	0.00587	0%	0	0%	0.000	0%	0	100%	3.754	1.970	0.616	16.40	1.240	0.388	10.85	0.720	0.225	6.34
18	97,763	2.244	0.00351	0%	0	0%	0.000	0%	0	100%	2.244	1.970	0.368	9.81	1.240	0.232	6.49	0.720	0.135	3.79
19	53,031	1.217	0.00190	0%	0	0%	0.000	0%	0	100%	1.217	1.970	0.200	5.32	1.240	0.126	3.52	0.720	0.073	2.06
20	85,009	1.952	0.00305	0%	0	0%	0.000	0%	0	100%	1.952	1.970	0.320	8.53	1.240	0.202	5.64	0.720	0.117	3.30
21	50,827	1.167	0.00182	0%	0	0%	0.000	0%	0	100%	1.167	1.970	0.192	5.10	1.240	0.121	3.37	0.720	0.070	1.97
22	31,395	0.721	0.00113	0%	0	0%	0.000	0%	0	100%	0.721	1.970	0.118	3.15	1.240	0.074	2.08	0.720	0.043	1.22
23	22,198	0.510	0.00080	0%	0	0%	0.000	0%	0	100%	0.510	1.970	0.084	2.23	1.240	0.053	1.47	0.720	0.031	0.86
24	147,654	3.390	0.00530	0%	0	0%	0.000	0%	0	100%	3.390	1.970	0.556	14.81	1.240	0.350	9.80	0.720	0.203	5.73
25	77,984	1.790	0.00280	0%	0	100%	1.790	0%	0	0%	0.000	0.670	0.100	3.63	0.220	0.033	1.36	0.010	0.001	0.05
26	6,339	0.146	0.00023	0%	0	0%	0.000	0%	0	100%	0.146	1.970	0.024	0.64	1.240	0.015	0.42	0.720	0.009	0.25
27	62,581	1.437	0.00224	0%	0	100%	1.437	0%	0	0%	0.000	0.670	0.080	2.92	0.220	0.026	1.09	0.010	0.001	0.04
28	24,636	0.566	0.00088	0%	0	0%	0.000	0%	0	100%	0.566	1.970	0.093	2.47	1.240	0.058	1.63	0.720	0.034	0.96
29	25,739	0.591	0.00092	0%	0	0%	0.000	0%	0	100%	0.591	1.970	0.097	2.58	1.240	0.061	1.71	0.720	0.035	1.00
30	90,025	2.067	0.00323	0%	0	0%	0.000	0%	0	100%	2.067	1.970	0.339	9.03	1.240	0.214	5.97	0.720	0.124	3.49
31	81,636	1.874	0.00293	0%	0	100%	1.874	0%	0	0%	0.000	0.670	0.105	3.80	0.220	0.034	1.42	0.010	0.002	0.06
32	23,372	0.537	0.00084	0%	0	88%	0.472	0%	0	12%	0.064	0.826	0.037	1.24	0.342	0.015	0.54	0.095	0.004	0.12
33	25,847	0.593	0.00093	0%	0	100%	0.593	0%	0	0%	0.000	0.670	0.033	1.20	0.220	0.011	0.45	0.010	0.000	0.02
34	12,809	0.294	0.00046	0%	0	0%	0.000	0%	0	100%	0.294	1.970	0.048	1.29	1.240	0.030	0.85	0.720	0.018	0.50
Total	2,281,687	52.380	0.06029				2.574				4.983		6.788	189.774		3.991	115.762		2.153	60.765
OFFSITE	182,772	4.196	0.00656	100%	4.195868	0%	0.000	0%	0	0%	0.000	0.440	0.154	5.41	0.080	0.028	1.01	0.000	0.000	0.00

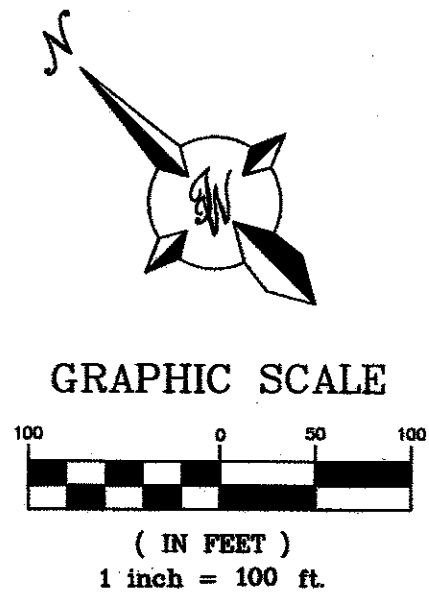
REQUIRED VOLUME	MAX FLOW		PROVIDED VOLUME
2.423	68.670	NORTH POND	12.707
0.211	7.564	DIRECT DISCHARGE WEST POND	--
1.950	53.132	SOUTH POND	3.722
2.357	60.409	EAST POND	6.197
0.105	3.804		0.110







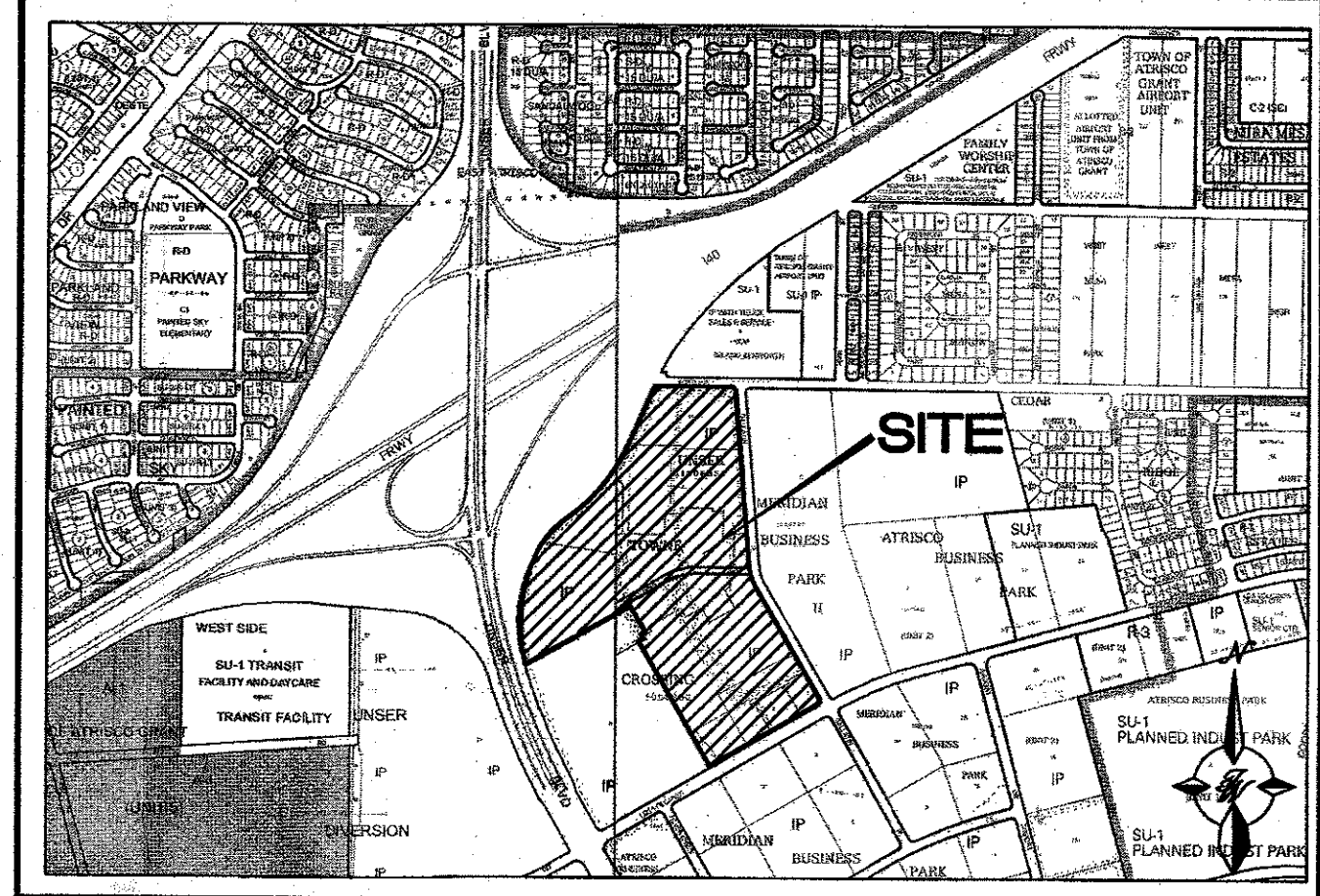
- EROSION CONTROL NOTES:**
1. CONTRACTOR IS RESPONSIBLE FOR OBTAINING A TOPSOIL DISTURBANCE PERMIT PRIOR TO BEGINNING WORK.
  2. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING RUN-OFF ON SITE DURING CONSTRUCTION.
  3. CONTRACTOR IS RESPONSIBLE FOR CLEANING ALL SEDIMENT THAT GETS INTO EXISTING RIGHT-OF-WAY.
  4. REPAIR OF DAMAGED FACILITIES AND CLEANUP OF SEDIMENT ACCUMULATIONS ON ADJACENT PROPERTIES AND IN PUBLIC FACILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR.
  5. ALL EXPOSED EARTH SURFACES MUST BE PROTECTED FROM WIND AND WATER EROSION PRIOR TO FINAL (CITY) ACCEPTANCE OF ANY PROJECT.



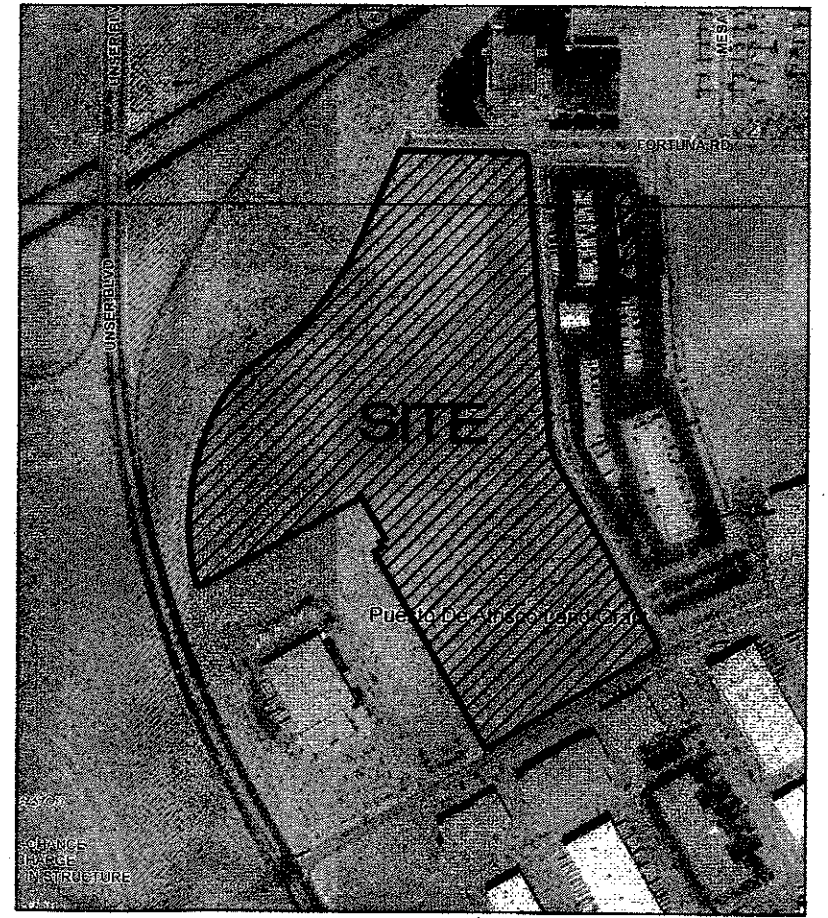
**NOTICE TO CONTRACTORS**

1. AN EXCAVATION/CONSTRUCTION PERMIT WILL BE REQUIRED BEFORE BEGINNING ANY WORK WITHIN CITY RIGHT-OF-WAY.
2. ALL WORK DETAILED ON THESE PLANS TO BE PERFORMED, EXCEPT AS OTHERWISE STATED OR PROVIDED HEREON, SHALL BE CONSTRUCTED IN ACCORDANCE WITH CITY OF ALBUQUERQUE INTERIM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 1985.
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 CONNECTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY.
5. BACKFILL COMPACTION SHALL BE ACCORDING TO TRAFFIC/STREET USE.
6. MAINTENANCE OF THESE FACILITIES SHALL BE THE RESPONSIBILITY OF THE OWNER OF THE PROPERTY SERVED.
7. WORK ON ARTERIAL STREETS SHALL BE PERFORMED ON A 24-HOUR BASIS.
8. PRIOR TO WORK WITHIN THE COA RIGHT-OF-WAY, A WORK ORDER PERMIT WILL BE REQUIRED.

A.G.R.S. MONUMENT "REWARD"  
STANDARD U.S.G.S. BRASS DISK  
NEW MEXICO STATE PLANE COORDINATES  
(CENTRAL ZONE-N.A.D. 1983)  
N=1,487,364.063  
E=1,491,190.819  
PUBLISHED EL=5319.688 (NAVD 1988)  
GROUND TO GRID FACTOR=0.999675005  
DELTA ALPHA ANGLE=-017°12.26'



VICINITY MAP J-28-Z-J-30-Z



FLOOD MAP 35001C0326J, 35001C0328J

**LEGEND**

- CURB & GUTTER
- BOUNDARY LINE
- EASEMENT
- CENTERLINE
- RIGHT-OF-WAY
- BUILDING
- SIDEWALK
- RETAINING WALL
- CONTOUR MAJOR
- CONTOUR MINOR
- SPOT ELEVATION (FLOWLINE)
- FLOW ARROW
- EXISTING CURB & GUTTER
- EXISTING BOUNDARY LINE
- EXISTING CONTOUR MAJOR
- EXISTING CONTOUR MINOR
- ASPHALT PAVING
- PROPOSED BUILDING

**CAUTION:**

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ENGINEER'S SEAL

RONALD R. BOHANNAN  
P.E. #7868

NEW DISTRIBUTION CENTER  
BEN E KEITH  
601 GALLATIN PL NW  
ALBUQUERQUE, NM 87121

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- △
- △
- △
- △

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Sheet Title

OVERALL  
GRADING PLAN

Sheet No.

C201

CIVIL

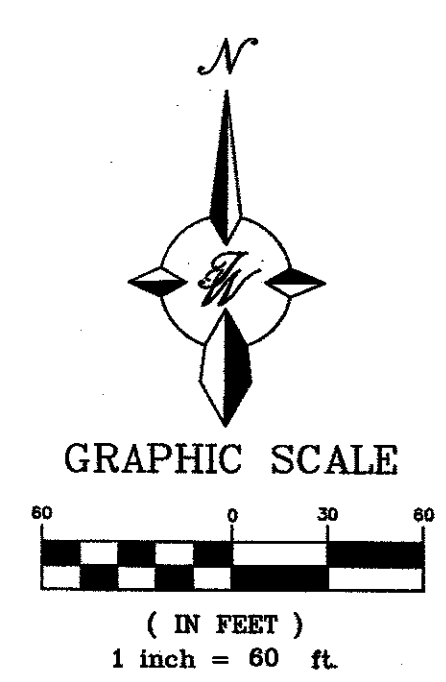


**LEGEND**

	CURB & GUTTER
	BOUNDARY LINE
	EASEMENT
	CENTERLINE
	RIGHT-OF-WAY
	BUILDING
	SIDEWALK
	RETAINING WALL
	CONTOUR MAJOR
	CONTOUR MINOR
	SPOT ELEVATION (FLOWLINE)
	FLOW ARROW
	EXISTING CURB & GUTTER
	EXISTING BOUNDARY LINE
	EXISTING CONTOUR MAJOR
	EXISTING CONTOUR MINOR
	ASPHALT PAVING
	PROPOSED BUILDING
	ROOF DRAIN

**STRUCTURE TABLE**

STRUCTURE	SIZE/TYPE	RIM	INVERT
MH 1	6' DIA	5143.33	5131.73
MH 2	6' DIA	5142.00	5133.17
MH 3	6' DIA	5144.30	5129.77
MH 4	6' DIA	5142.69	5131.67
INLET 1	TYPE D	5142.00	5131.73
INLET 2	TYPE D	5142.00	5138.00
INLET 3	TYPE D	5142.00	5133.85
INLET 4	TYPE DOUBLE D	5142.80	5137.00
INLET 5	TYPE DOUBLE D	5142.10	5132.57
INLET 6	TYPE D	5142.10	5135.37
INLET 7	TYPE D	5142.00	5138.00



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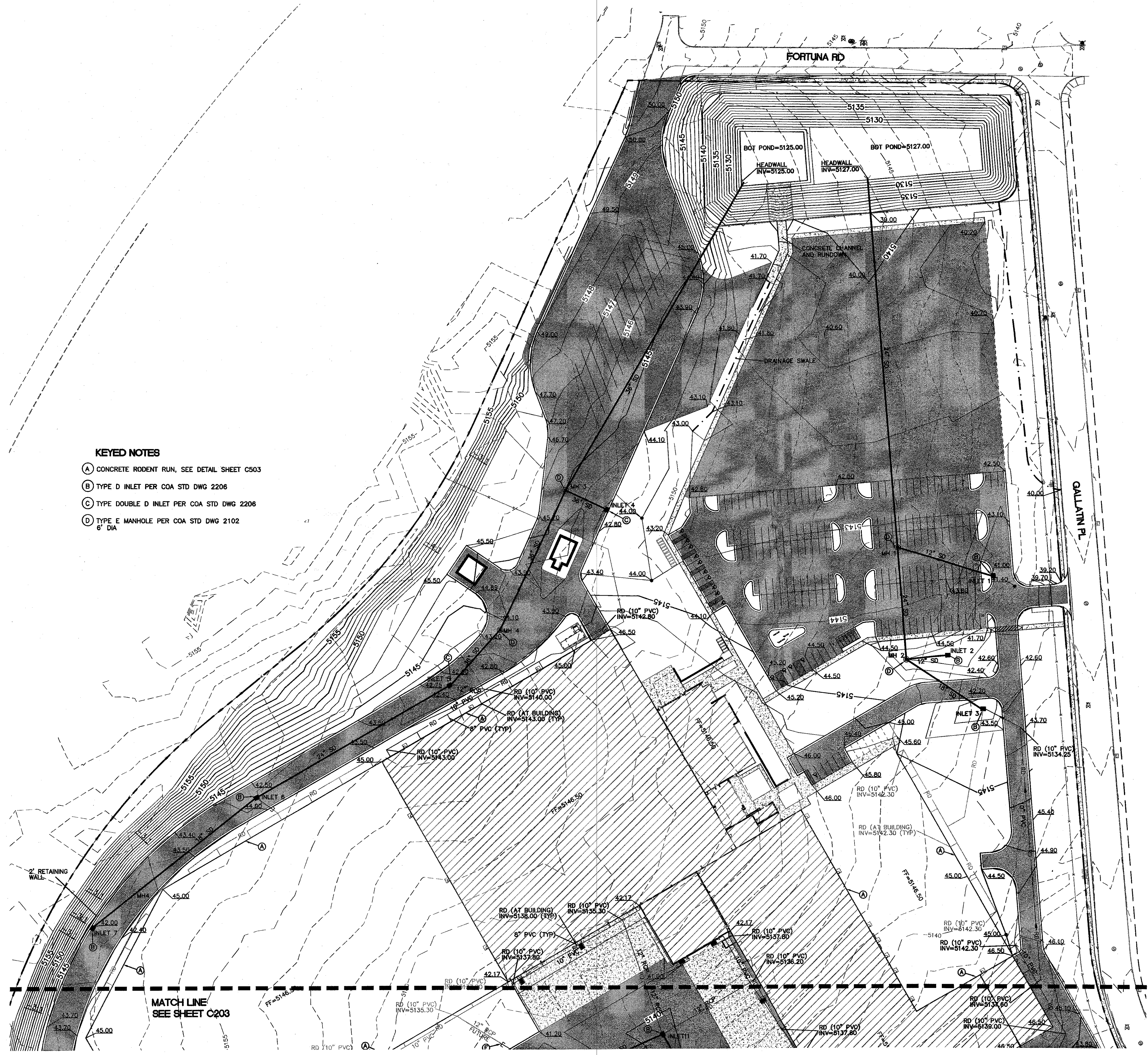
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ENGINEER'S  
SEAL  
  
RONALD R. BOHANNAN  
P.E. #7868

**KEYED NOTES**

- (A) CONCRETE RODENT RUN, SEE DETAIL SHEET C503
- (B) TYPE D INLET PER COA STD DWG 2206
- (C) TYPE DOUBLE D INLET PER COA STD DWG 2206
- (D) TYPE E MANHOLE PER COA STD DWG 2102 6' DIA

MATCH LINE  
SEE SHEET C203





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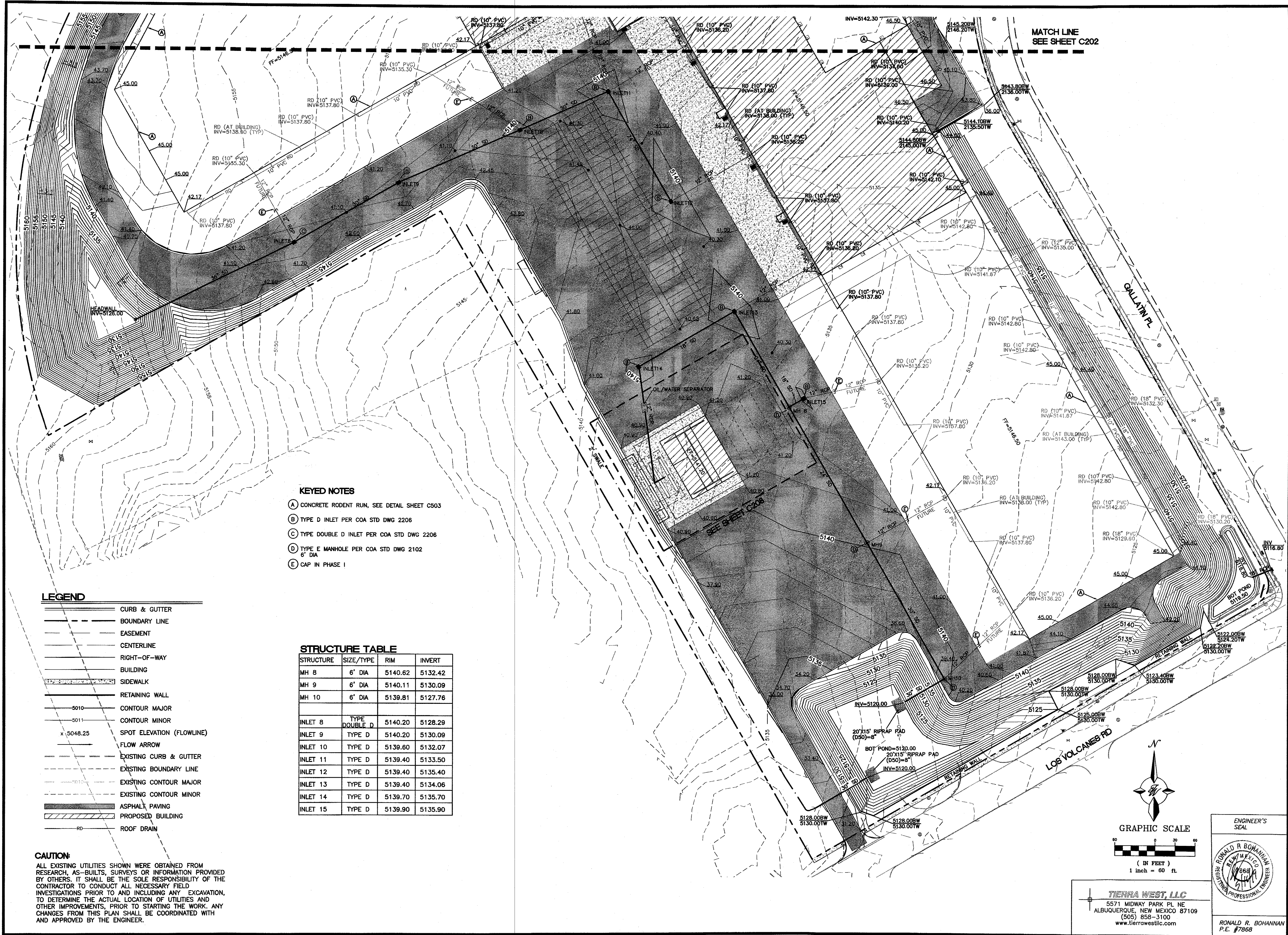
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GRADING AND  
DRAINAGE PLAN

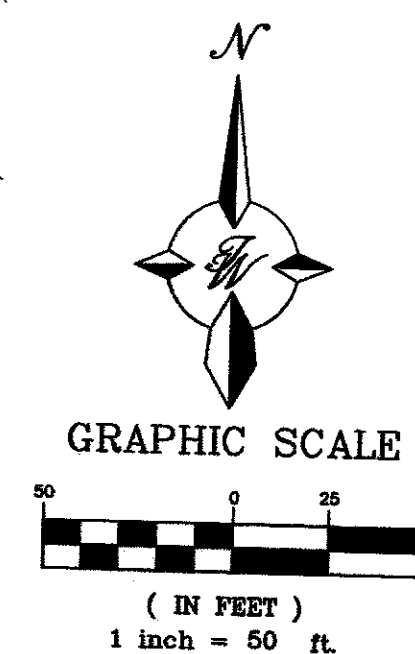
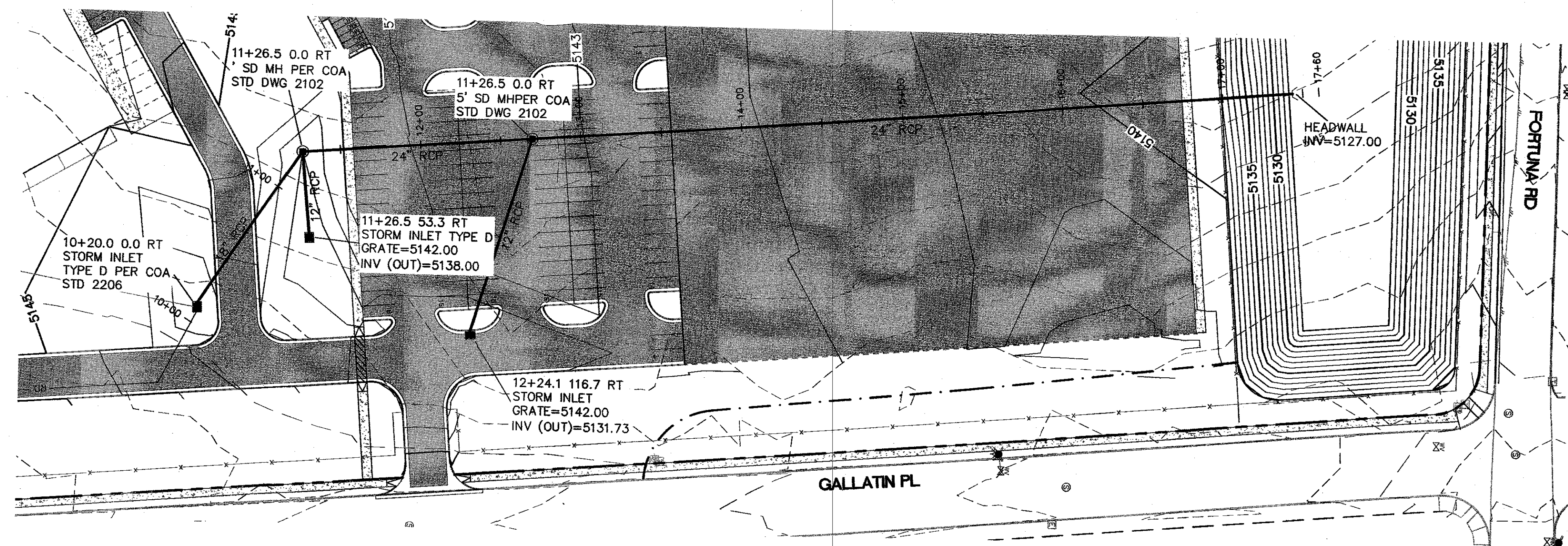
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C203

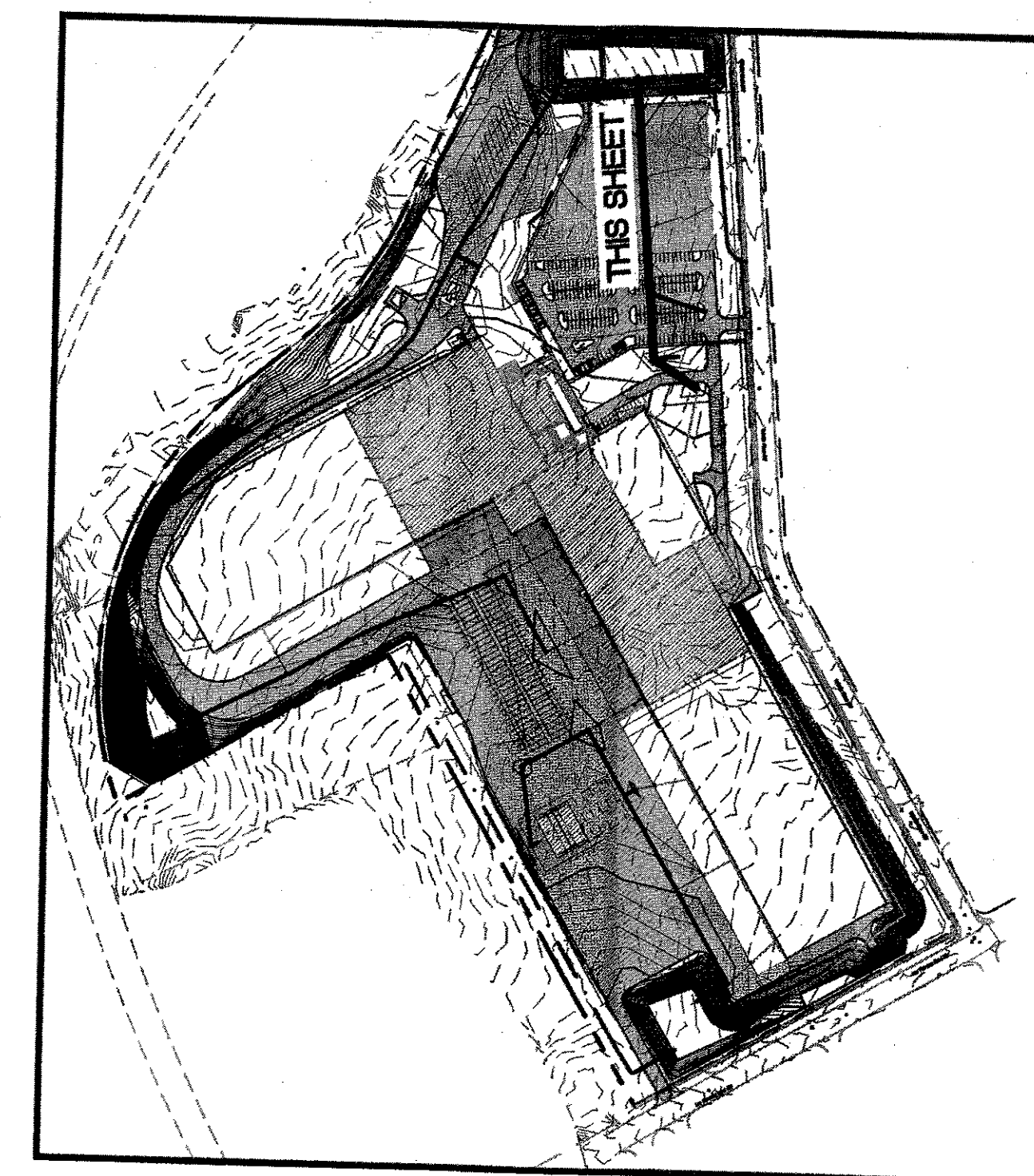
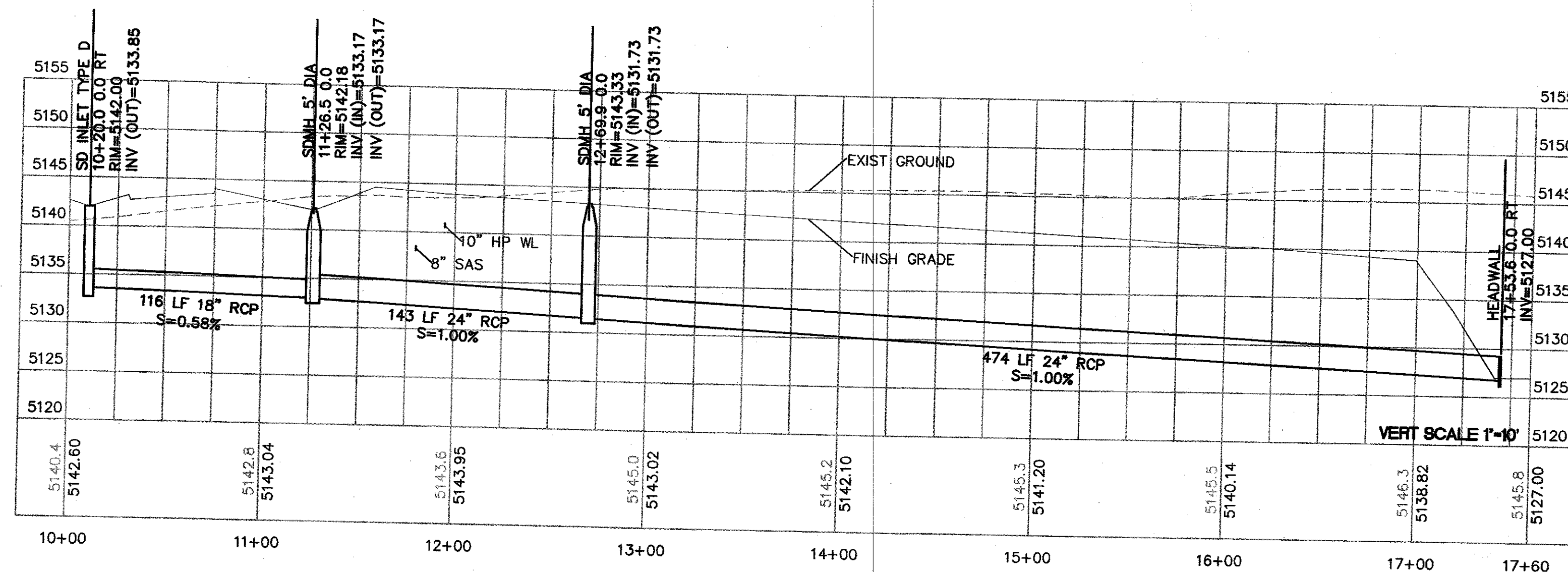
CIVIL







- LEGEND**
- CURB & GUTTER
  - BOUNDARY LINE
  - - - EASEMENT
  - CENTERLINE
  - RIGHT-OF-WAY
  - BUILDING
  - SIDEWALK
  - RETAINING WALL
  - 5010 CONTOUR MAJOR
  - 5011 CONTOUR MINOR
  - x 5048.25 SPOT ELEVATION (FLOWLINE)
  - FLOW ARROW
  - EXISTING CURB & GUTTER
  - EXISTING BOUNDARY LINE
  - 5010 EXISTING CONTOUR MAJOR
  - 5011 EXISTING CONTOUR MINOR
  - ASPHALT PAVING
  - PROPOSED BUILDING
  - RD ROOF DRAIN



KEY MAP

**CAUTION:**

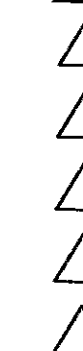
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BEN E KEITH  
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Revision No.



Job No.

2018014

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Date

4-28-19

Sheet Title

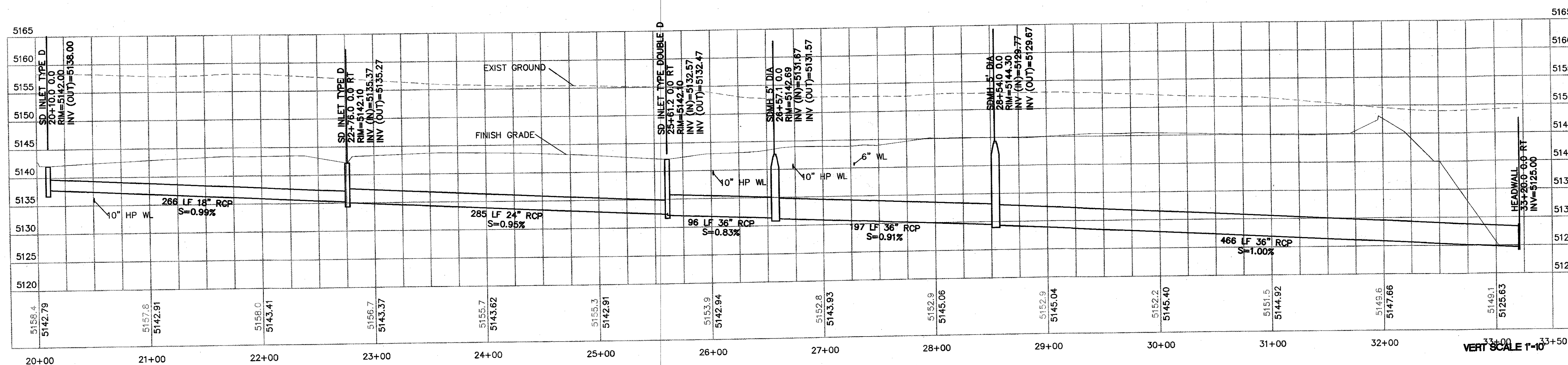
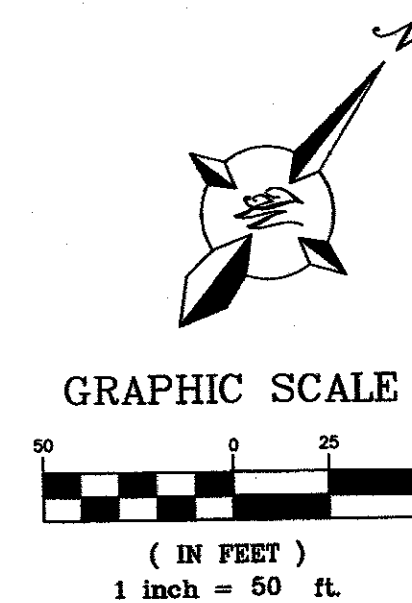
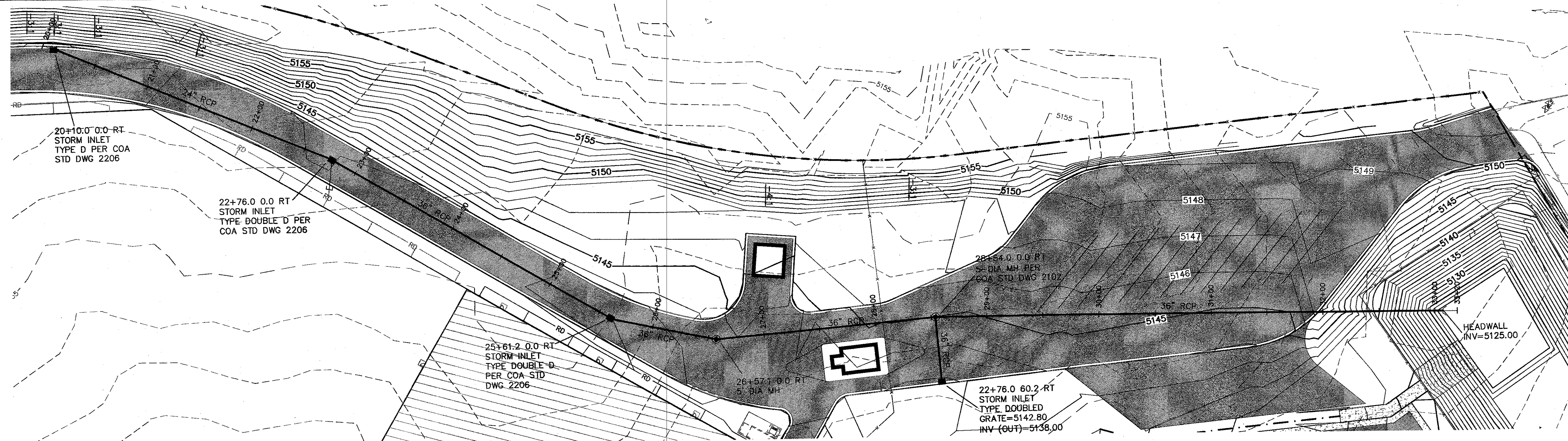
STORM SEWER  
PLAN AND PROFILE

Sheet No.

C204

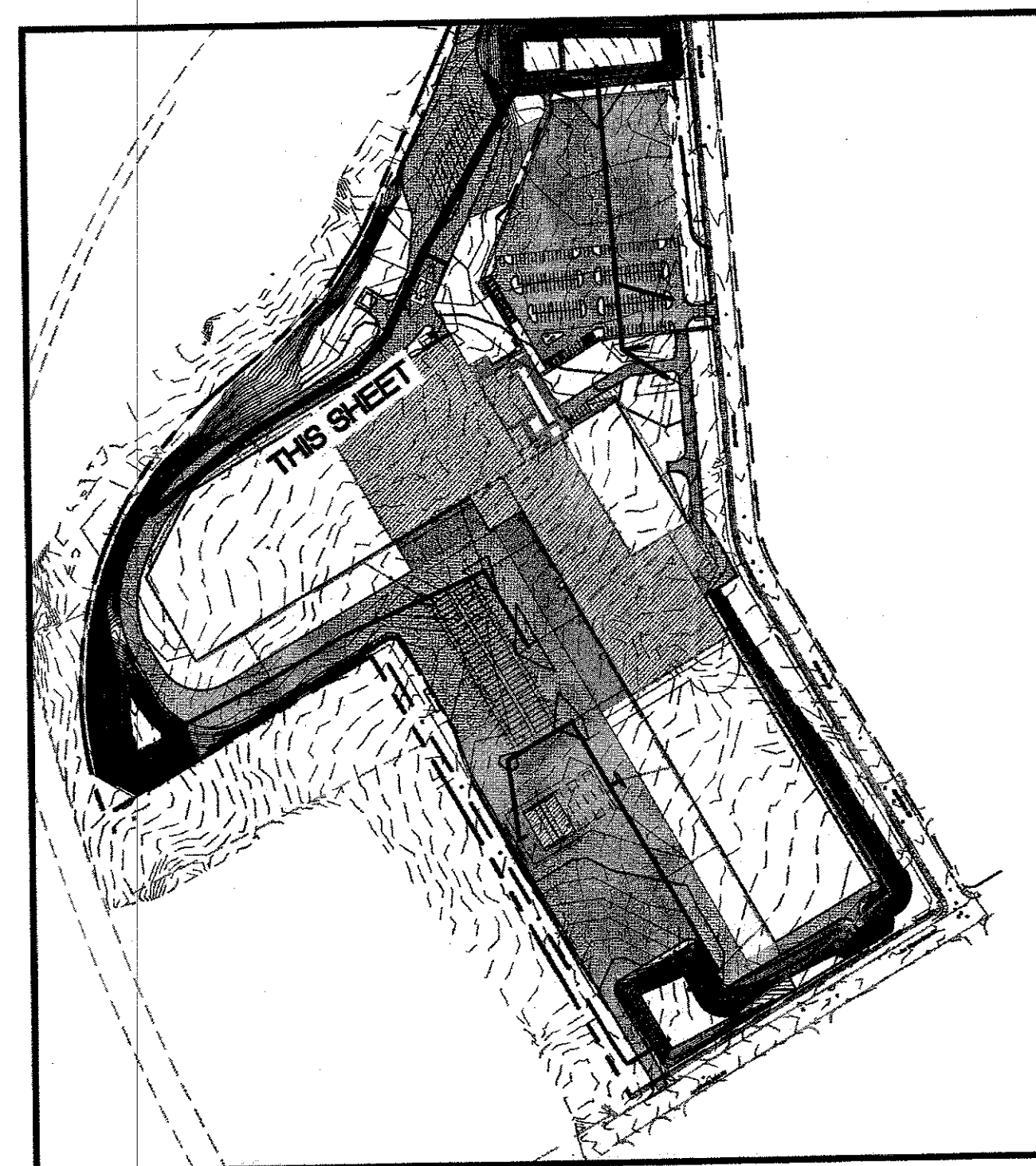
CIVIL





# LEGEND

- CURB & GUTTER
- BOUNDARY LINE
- EASEMENT
- CENTERLINE
- RIGHT-OF-WAY
- BUILDING
- SIDEWALK
- RETAINING WALL
- CONTOUR MAJOR
- CONTOUR MINOR
- SPOT ELEVATION (FLOWLINE)
- FLOW ARROW
- EXISTING CURB & GUTTER
- EXISTING BOUNDARY LINE
- EXISTING CONTOUR MAJOR
- EXISTING CONTOUR MINOR
- ASPHALT PAVING
- PROPOSED BUILDING
- RD
- ROOF DRAIN



KEY MAP

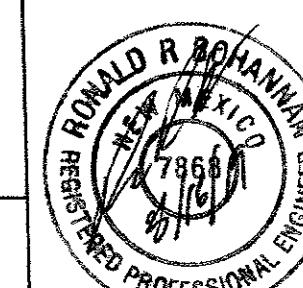
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Sheet Title

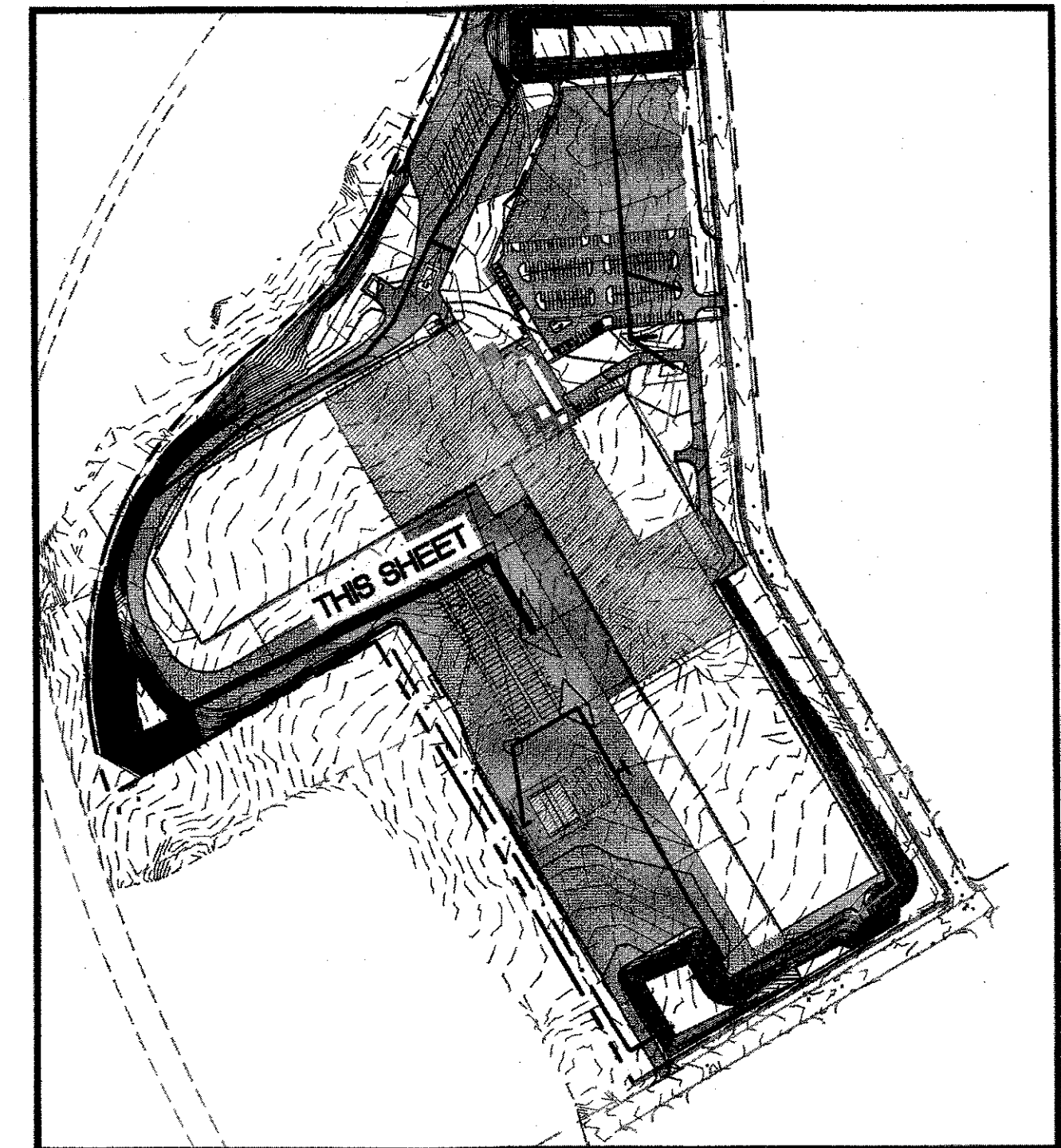
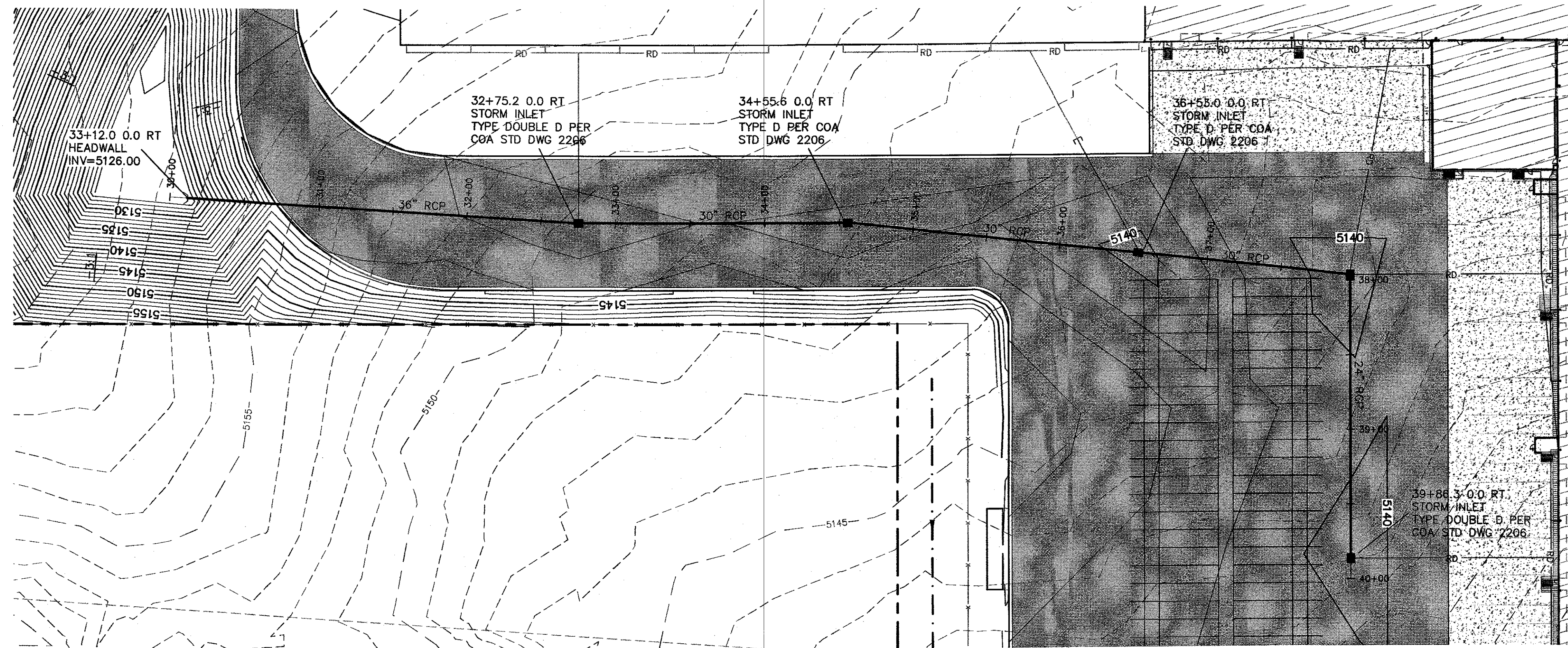
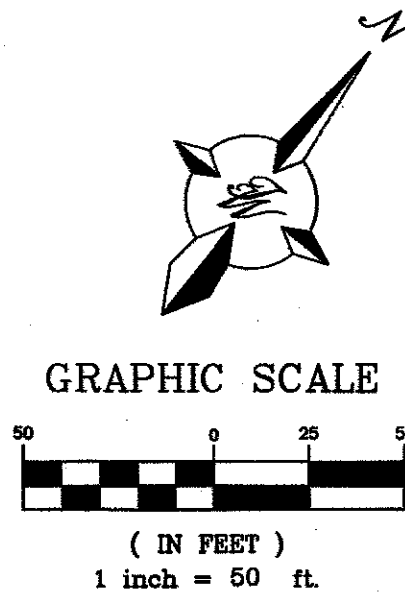
STORM SEWER  
PLAN AND PROFILE

Sheet No.

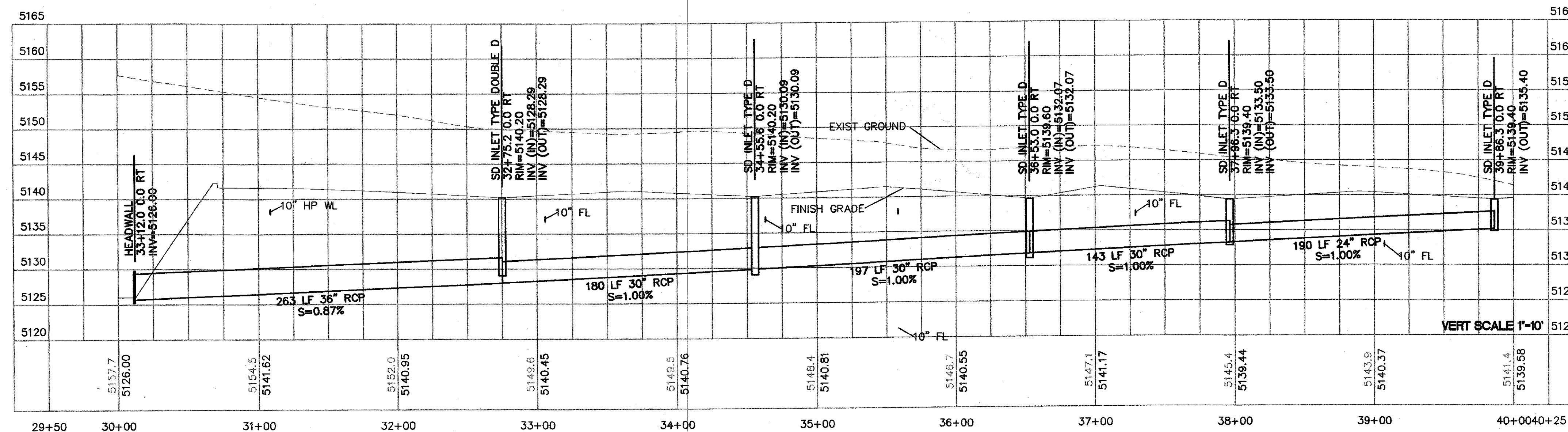
C205

CIVIL





KEY MAP

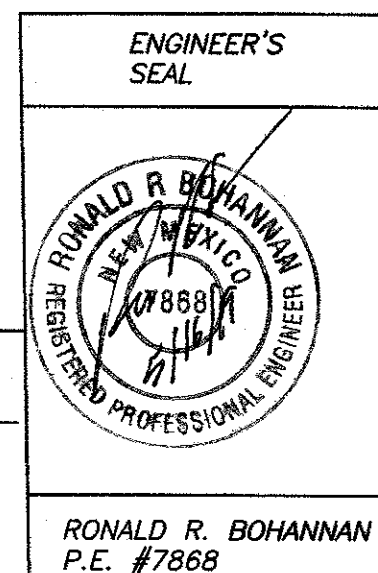


- LEGEND**
- CURB & GUTTER
  - BOUNDARY LINE
  - EASEMENT
  - CENTERLINE
  - RIGHT-OF-WAY
  - BUILDING
  - SIDEWALK
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  - SPOT ELEVATION (FLOWLINE)
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  - EXISTING CURB & GUTTER
  - EXISTING BOUNDARY LINE
  - EXISTING CONTOUR MAJOR
  - EXISTING CONTOUR MINOR
  - ASPHALT PAVING
  - PROPOSED BUILDING
  - RD
  - ROOF DRAIN

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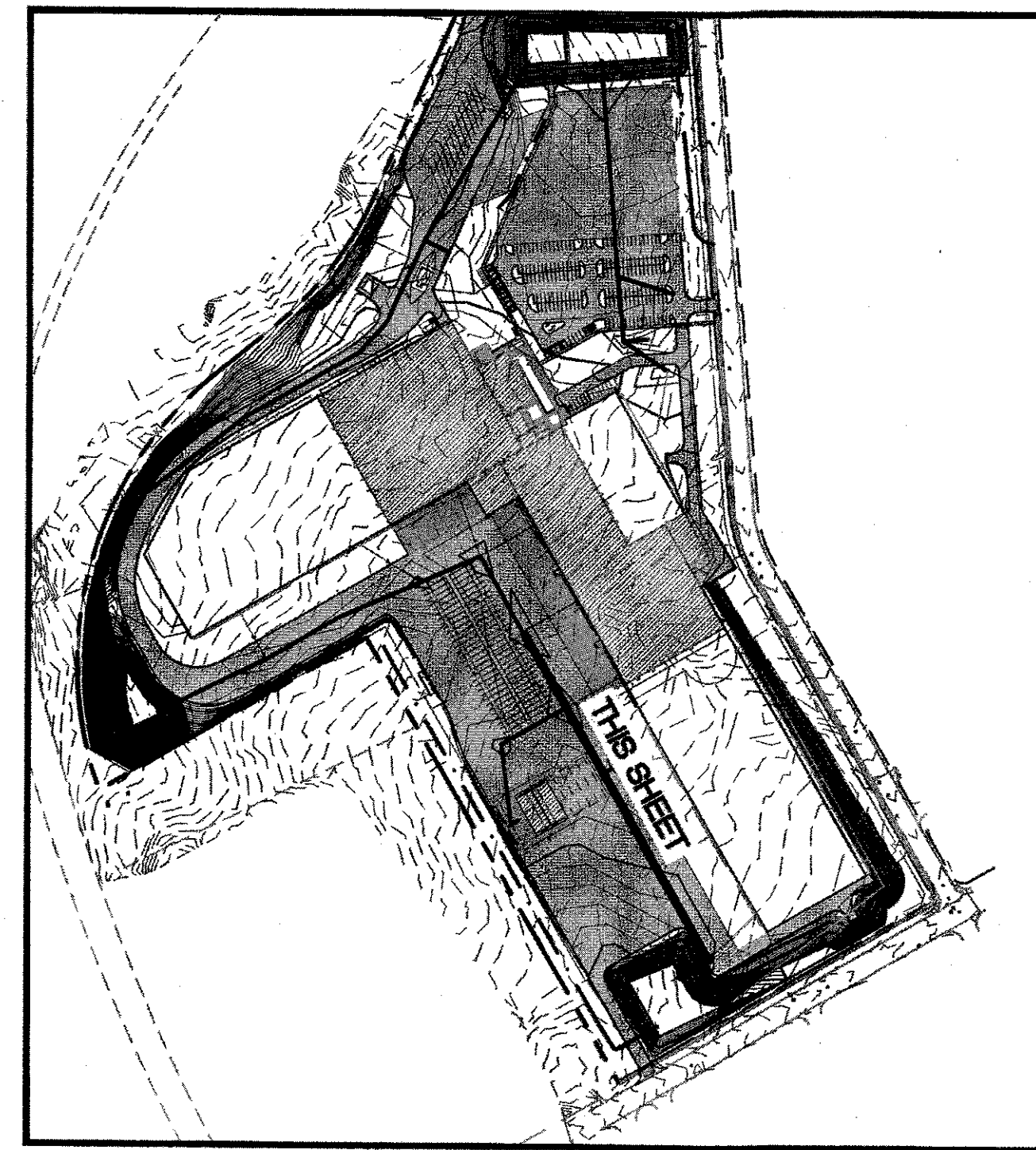
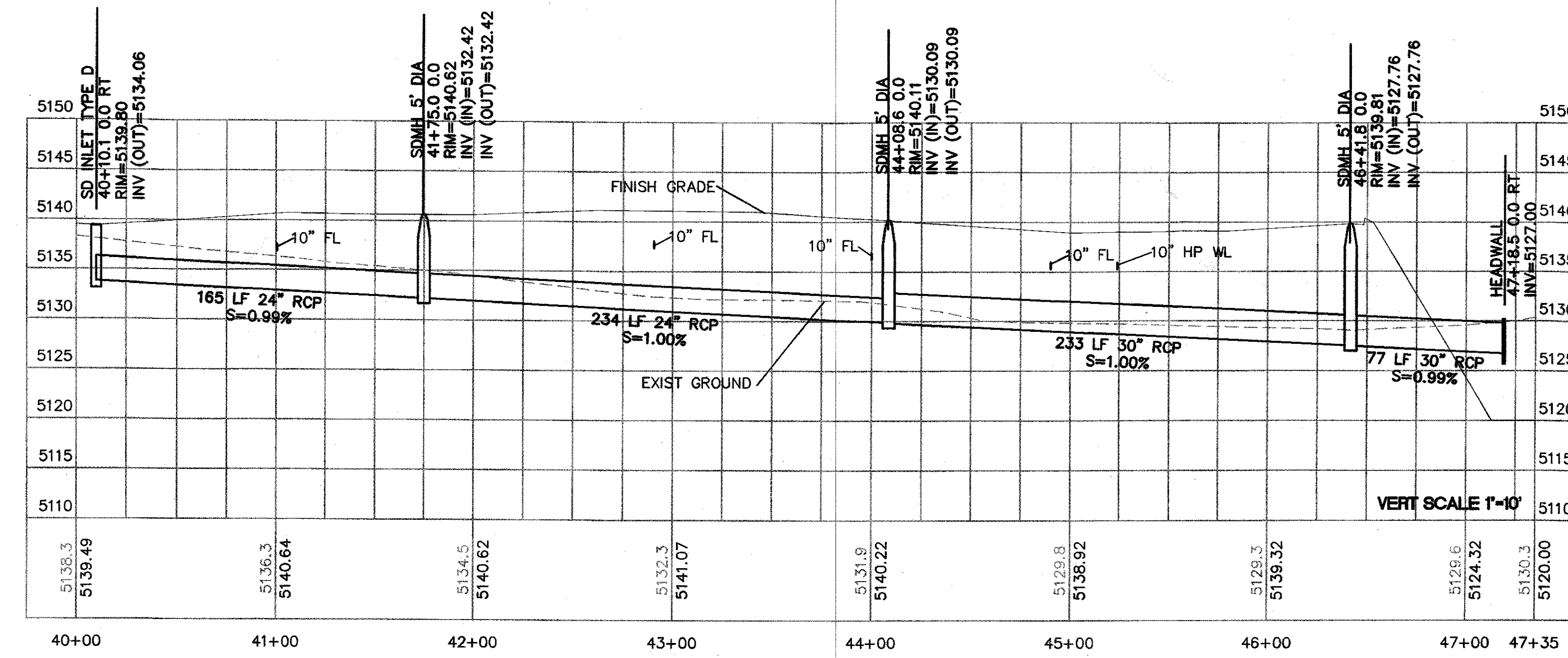
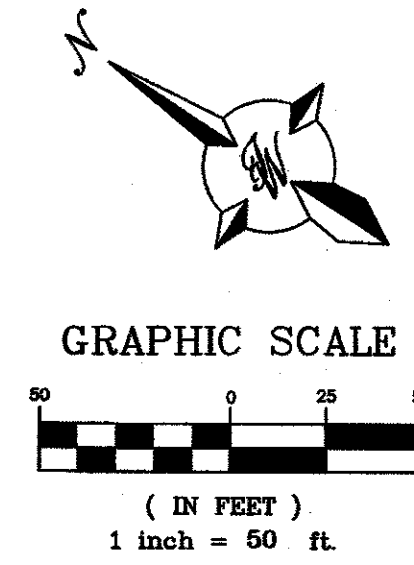
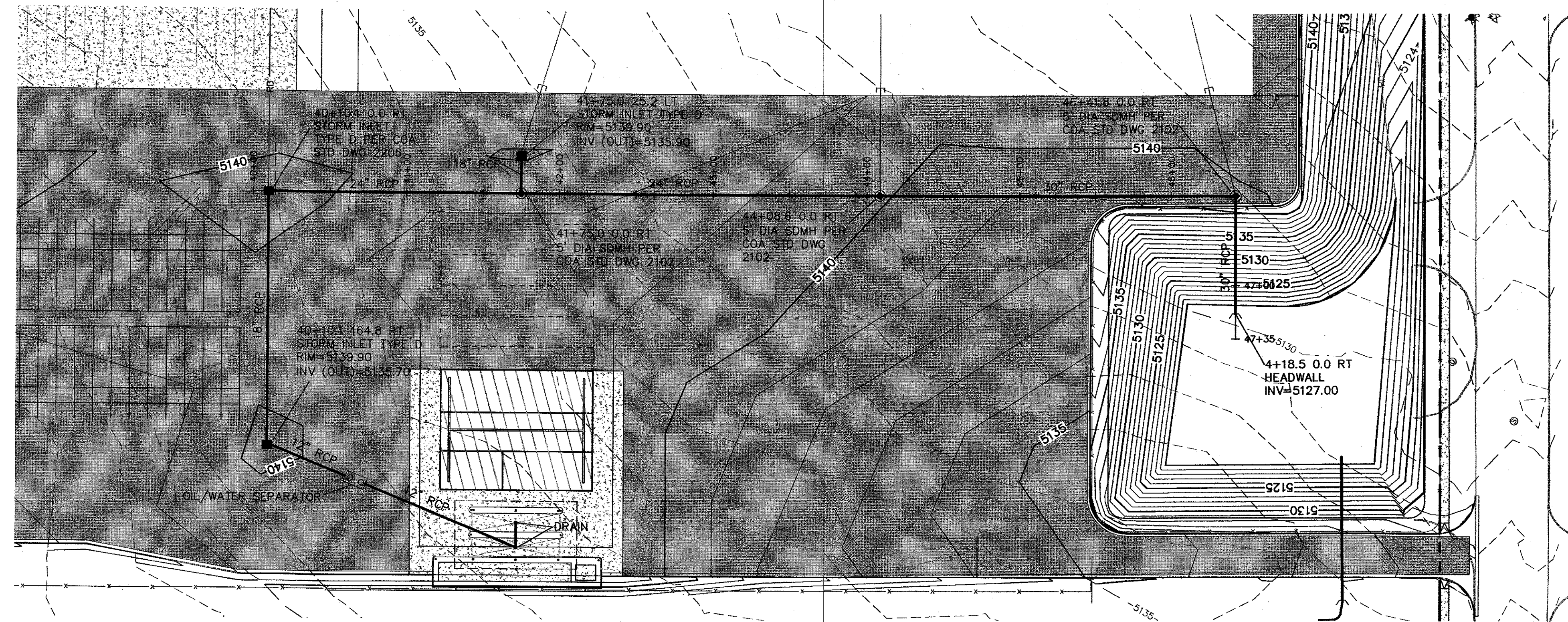
STORM SEWER  
PLAN AND PROFILE

Sheet No.

C206

CIVIL





- LEGEND**
- CURB & GUTTER
  - BOUNDARY LINE
  - EASEMENT
  - CENTERLINE
  - RIGHT-OF-WAY
  - BUILDING
  - SIDEWALK
  - RETAINING WALL
  - 5010 — CONTOUR MAJOR
  - 5011 — CONTOUR MINOR
  - x 5048.25 SPOT ELEVATION (FLOWLINE)
  - FLOW ARROW
  - EXISTING CURB & GUTTER
  - EXISTING BOUNDARY LINE
  - 5010 — EXISTING CONTOUR MAJOR
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  - ASPHALT PAVING
  - PROPOSED BUILDING
  - RO — ROOF DRAIN

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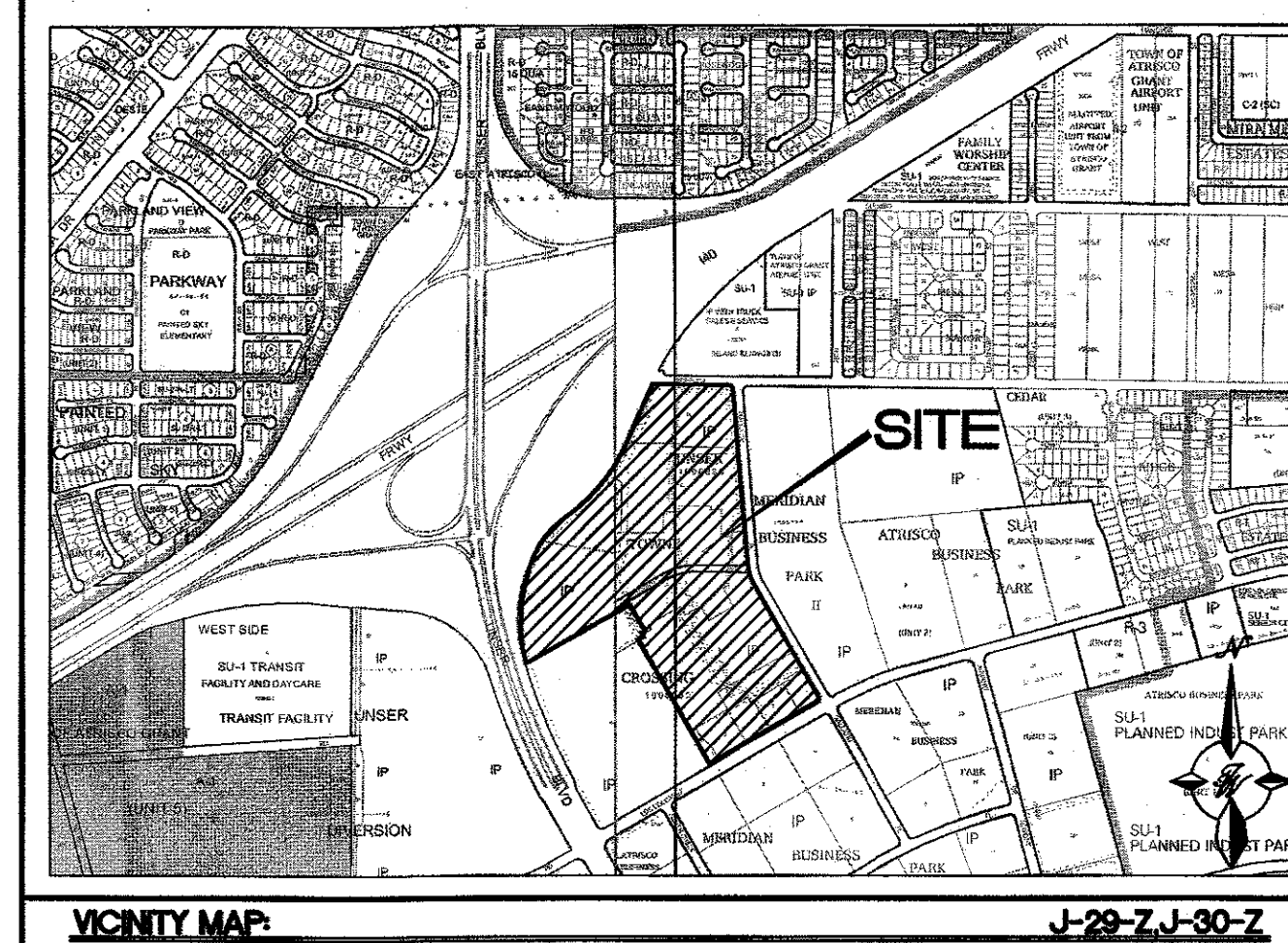
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STORM SEWER  
PLAN AND PROFILE  
Sheet No.

C207  
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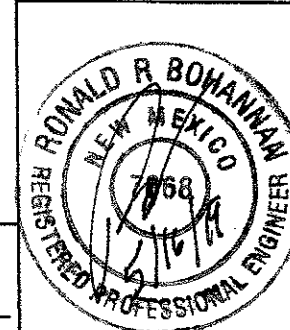




# GENERAL EROSION NOTES

- THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) IS COMPRISED OF THE SWPPP BOOK, THE 2017 GENERAL CONSTRUCTION PERMIT, THIS DRAWING ("TEMPORARY EROSION CONTROL AND SEDIMENTATION PLAN"), STANDARD DETAILS ("TEMPORARY EROSION CONTROL AND SEDIMENTATION DETAILS"), EPA NOTICE OF INTENT PERMIT AND ALL SUBSEQUENT REPORTS, CORRECTIVE ACTIONS AND EROSION CONTROL RELATED DOCUMENTS.
- ALL OPERATORS AS DESIGNATED, CONTRACTORS AND SUBCONTRACTORS INVOLVED WITH SITE ACTIVITIES RELATED TO STORM WATER POLLUTION PREVENTION SHALL REVIEW A COPY OF THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP), THE 2017 CONSTRUCTION GENERAL PERMIT, THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES), THE CLEAN WATER ACT OF 1972 AND BECOME FAMILIAR WITH THEIR CONTENTS.
- THE OPERATOR IN CONTROL OF DAILY SITE ACTIVITIES SHALL IMPLEMENT BEST MANAGEMENT PRACTICES AS REQUIRED BY THE SWPPP. ADDITIONAL BEST MANAGEMENT PRACTICES SHALL BE IMPLEMENTED AS DICTATED BY CONDITIONS THAT MAY OCCUR AT NO ADDITIONAL COST TO PROJECT OWNER THROUGHOUT ALL PHASES OF CONSTRUCTION.
- BEST MANAGEMENT PRACTICES (BMP'S) AND CONTROLS SHALL CONFORM TO ALL FEDERAL, STATE, OR LOCAL REQUIREMENTS OR MANUAL OF PRACTICE, AS APPLICABLE. OPERATOR WITH CONTROL OF DAILY SITE ACTIVITIES SHALL IMPLEMENT ADDITIONAL CONTROLS AS DIRECTED BY PERMITTING AGENCY, LOCAL JURISDICTIONAL AUTHORITY OR SWPPP COMPLIANCE INSPECTOR.
- THE TEMPORARY EROSION CONTROL AND SEDIMENTATION PLAN IS A WORKING DOCUMENT AND IS REQUIRED TO BE UPDATED WITHIN 24 HOURS OF ANY CHANGES WHEN BMP'S ARE REPAIRED, RELOCATED OR REMOVED BY NOTING ON THE PLAN THE AREAS AND DATES OF THE REPAIRS, RELOCATIONS OR REMOVALS. AN ACTIVE COPY OF THE PLAN SHALL BE POSTED IN THE JOB SITE TRAILER ON-SITE AND MUST BE MAINTAINED CURRENT AT ALL TIMES.
- CONTRACTOR SHALL MINIMIZE CLEARING AND EARTH DISTURBANCE TO THE MAXIMUM ACREAGE AS REQUIRED BY THE EPA CONSTRUCTION GENERAL PERMIT.
- CONTRACTOR SHALL DENOTE ON THIS PLAN, THE LOCATION OF TEMPORARY PARKING, STORAGE, PORTABLE SANITARY FACILITIES, OFFICE TRAILERS, AND ALL SUPPORT AREAS. RELOCATIONS OF EACH SHALL ALSO BE DOCUMENTED AS THEY OCCUR.
- ALL WASH OUT WATER USED FOR CONCRETE, MASONRY, PAINT AND OTHER MATERIALS SHALL HAVE ADEQUATE SIGNAGE WITH PROPER CONTAINMENT AND DISPOSED OF PROPERLY WHEN CAPACITY REACHES 50% OR PER VENDOR RECOMMENDATIONS. VENDORS AND TRADESMEN SHALL BE INFORMED OF THE REQUIREMENTS TO USE THE WASH OUT.
- A SPILL KIT SHALL BE READILY AVAILABLE TO CONTAIN AND CLEAN-UP FUEL OR CHEMICAL SPILLS AND LEAKS. A DISCHARGE OF ANY MATERIAL IN A QUANTITY THAT MAY WITHIN REASONABLE PROBABILITY CAUSE INJURY OR BE DETRIMENTAL TO HUMAN HEALTH, ANIMAL OR PLANT LIFE, OR PROPERTY; OR INTERFERE WITH THE PUBLIC WELFARE MUST BE REPORTED TO THE NEW MEXICO ENVIRONMENTAL DEPARTMENT HOTLINE AT (505) 827-9329 FOR EMERGENCIES OR FOR NON EMERGENCIES AT (866)-428-6535.
- IF UNSURE IF THE SPILL IS OF A SIGNIFICANT QUANTITY, THE SPILL SHOULD BE REPORTED TO THE HOTLINE AND INFORMATION PROVIDED WITH DETAILS OF THE SPILL FOR FURTHER ACTIONS.
- DUST DURING CONSTRUCTION OPERATIONS SHALL BE FREQUENTLY CONTROLLED BY WATER SUPPRESSION METHODS ONLY. DUST SUPPRESSION OPERATIONS SHALL CEASE IF HIGH WINDS ABOVE 35 MPH ARE PRESENT. THE USE OF MOTOR OILS AND OTHER PETROLEUM BASED OR TOXIC LIQUIDS IS STRICTLY PROHIBITED. OTHER CHEMICALS USED FOR DUST SUPPRESSION MUST BE APPROVED BY THE EPA PRIOR TO THEIR USE.
- RUBBISH, TRASH, GARBAGE, LITTER, OR OTHER SUCH MATERIALS SHALL BE DEPOSITED INTO SEALED, COVERED, LEAK PROOF CONTAINERS. CONTAINERS SHALL BE DISPOSED OF PROPERLY WHEN CAPACITY IS REACHED. MATERIALS SHALL BE PREVENTED FROM LEAVING THE PREMISES THROUGH THE ACTION OF WIND OR STORMWATER.
- ALL STORM WATER POLLUTION PREVENTION MEASURES AND CONTROLS PRESENTED ON THIS PLAN, AND IN THE STORM WATER POLLUTION PREVENTION PLAN, SHALL BE INITIATED PER THE SEQUENCE OF CONSTRUCTION AS NOTED.
- DISTURBED PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITY HAS BEEN TEMPORARILY SUSPENDED FOR 14 DAYS, SHALL HAVE TEMPORARY STABILIZATION IN PLACE NO LATER THAN 14 DAYS FROM THE LAST DATE OF CONSTRUCTION ACTIVITY OCCURRING IN THESE AREAS.
- DISTURBED PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITY HAS PERMANENTLY STOPPED SHALL HAVE PERMANENT CONTROLS IN PLACE NO LATER THAN 14 DAYS AFTER THE LAST CONSTRUCTION ACTIVITY OCCURRING IN THESE AREAS.
- IF THE ACTION OF VEHICLES OR EQUIPMENTS TRAVELING OVER THE CONSTRUCTION ENTRANCES IS NOT SUFFICIENT TO REMOVE THE MAJORITY OF DIRT OR MUD FROM LEAVING THE SITE, THEN THE LENGTH OF THE EXIT SHOULD BE EXTENDED TO PROVIDE ADDITIONAL TIRE ROTATIONS, LARGER ROCK MAY BE USED TO CREATE A SUFFICIENT JARRING MOTION OR INSTALL A TIRE WASH OFF WITH A SEDIMENT TRAP BEFORE LEAVING THE SITE.
- ALL MATERIALS SPILLED, DROPPED, WASHED, OR TRACKED FROM VEHICLES ONTO ROADWAYS OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY.
- THE OPERATOR IN CHARGE OF THE DAILY SITES ACTIVITIES WILL BE RESPONSIBLE FOR REMOVING SEDIMENT OR SOILS ACCUMULATING MORE THAN 50% OF THE DESIGN CAPACITY IN DETENTION PONDS, SILT FENCING OR OTHER SIMILAR EROSION CONTROLS.
- ON-SITE & OFF-SITE SOIL STOCKPILE AND BORROW AREAS SHALL BE PROTECTED FROM EROSION AND SEDIMENTATION THROUGH IMPLEMENTATION OF BEST MANAGEMENT PRACTICES, AS REQUIRED PER THE CONSTRUCTION GENERAL PERMIT. STOCKPILE AND BORROW AREA LOCATIONS SHALL BE NOTED ON THE ESC PLAN AND PERMITTED IN ACCORDANCE WITH LOCAL AUTHORITIES HAVING JURISDICTIONAL CONTROL.
- SLOPES SHALL BE LEFT WITH CROSS SLOPE GRADING PATTERN AND IN A ROUGHENED CONDITION DURING THE GRADING PHASE TO REDUCE RUNOFF VELOCITIES AND EROSION RISKS. EXCESSIVE SLOPES MAY REQUIRE ADDITIONAL INDUSTRY STANDARD CONTROLS TO PREVENT EROSION.
- DUE TO THE GRADE CHANGES DURING THE DEVELOPMENT OF THE PROJECT, THE OPERATOR IN CONTROL OF THE SITE'S DAILY ACTIVITIES SHALL BE RESPONSIBLE FOR ADJUSTING AND MAINTAINING ALL EROSION CONTROL TO PREVENT EROSION.
- ALL DISTURBED AREAS SHALL BE SUPPRESSED BY WATER AND ALL CONTROLS LEFT IN GOOD WORKING CONDITION AT THE END OF EACH WORKING DAY. THIS INCLUDES REPLACEMENT OF SILT FENCING AND/OR OTHER SURFACE CONTROLS, TRACK OUT SWEEP CLEAN, BACKFILL OF OPEN TRENCHES AND ANY OTHER EROSION CONTROLS.

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## SEQUENCE OF CONSTRUCTION

1. INSTALL STABILIZED CONSTRUCTION ENTRANCES.
2. POST PUBLIC NOTICE PER DETAIL.
3. INSTALL DOWN GRADIENT PERIMETER CONTROLS.
4. INSTALL SEDIMENT CONTROLS AT INLETS AND DRAINAGE STRUCTURES.
5. INSTALL SEDIMENT TRAP BASINS INCLUDING EMERGENCY OVERFLOW.
6. NOTIFY SWPPP COMPLIANCE INSPECTOR OF COMPLETION OF THE ABOVE.
7. BEGIN GRUBBING AND SOIL DISTURBING ACTIVITIES.
8. PROVIDE POSITIVE GRADES TOWARDS SEDIMENT PONDS DURING SITE GRADING.
9. INSTALL INTERMEDIATE CONTROLS OF STEEP SLOPES.
10. PROVIDE TEMPORARY STABILIZATION OF DISTURBED AREAS OR STOCKPILES.
11. START CONSTRUCTION OF BUILDING PAD AND STRUCTURES.
12. FINISH GRADING THE SITE.
13. COMPLETE SITE FINAL STABILIZATION

LIMITS OF DISTURBANCE  
50.35 AC

(001) DISCHARGE OVERFLOW TO  
RIO GRANDE VIA MS-4  
(2 MILES)

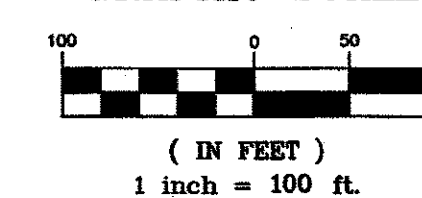
## BMP MAINTENANCE

- ALL MEASURES STATED IN THIS EROSION AND SEDIMENT CONTROL PLAN, AND IN THE STORM WATER POLLUTION PREVENTION PLAN, SHALL BE MAINTAINED IN FULLY FUNCTIONAL CONDITION UNTIL NO LONGER REQUIRED FOR A COMPLETED PHASE OF WORK OR UNTIL FINAL STABILIZATION OF THE SITE IS ACHIEVED. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE INSPECTED AT THE END OF THE WORKDAY BY A QUALIFIED MEMBER OF THE SWPPP COMPLIANCE TEAM. THE OPERATOR WITH CONTROL OF THE SITES DAILY ACTIVITIES IS RESPONSIBLE TO MAINTAIN, CLEAN AND REPAIR EROSION CONTROLS IN ACCORDANCE WITH THE FOLLOWING:
1. INLET PROTECTION DEVICES AND BARRIERS SHALL BE REPAIRED OR REPLACED, IF THEY SHOW SIGNS OF UNDERMINING OR DETERIORATION. SEDIMENT SHALL BE REMOVED TO INSURE PROPER FLOWS. INLET PROTECTION TYPES MAY NEED TO BE MODIFIED DURING THE CONSTRUCTION PROGRESS.
  2. ALL SEEDED AREAS SHALL BE CHECKED REGULARLY TO SEE THAT A GOOD STAND OF VEGETATION IS MAINTAINED. AREAS SHOULD BE FERTILIZED, WATERED, AND RE-SEEDDED AS NEEDED.
  3. SILT FENCES, WADDLES OR OTHER CONTROLS SHALL BE REPLACED OR REPAIRED TO PROPER FUNCTIONING CONDITION, IF DAMAGED. SEDIMENT AND SOIL SHALL BE REMOVED WHEN REACHES ONE-HALF THE HEIGHT OF THE CONTROL.
  4. THE CONSTRUCTION EXITS SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OF SEDIMENT ONTO PUBLIC OR PRIVATE ROADWAYS. THIS MAY REQUIRE PERIODIC TOP DRESSING, EXTENDING OR OTHER MODIFICATIONS TO THE CONSTRUCTION EXITS AS CONDITIONS DEMAND. SITE TRAFFIC SHOULD BE LIMITED TO THE CONTROLLED EXITS ONLY.
  5. SEDIMENTATION BASINS SHALL BE MAINTAINED IN OPERATIONAL CONDITIONS AT ALL TIMES. SEDIMENT SHALL BE REMOVED FROM SEDIMENT BASINS OR TRAPS WHEN THE DESIGN CAPACITY HAS BEEN REDUCED BY 50%.
  6. REFERENCE THE SWPPP BOOK FOR ALL EROSION CONTROL MAINTENANCE PROCEDURES AND FREQUENCIES. CONSULT THE SWPPP PREPARER WITH ANY QUESTIONS REGARDING THIS SWPPP AND ITS REQUIREMENTS.

## EROSION CONTROL NOTES

1. CONTRACTOR IS RESPONSIBLE FOR OBTAINING A TOPSOIL DISTURBANCE PERMIT FROM THE LOCAL JURISDICTIONAL AUTHORITY PRIOR TO BEGINNING WORK.
2. THE OPERATOR WITH CONTROL OF THE DAILY SITES ACTIVITIES IS RESPONSIBLE FOR MAINTAINING RUN-OFF AND RUN ON OF SITE DURING CONSTRUCTION.
3. THE OPERATOR WITH CONTROL OF THE DAILY SITES ACTIVITIES IS RESPONSIBLE FOR CLEANING ALL SEDIMENT THAT GETS INTO EXISTING RIGHT-OF-WAY. REPAIR OF DAMAGED FACILITIES AND CLEANUP OF SEDIMENT ACCUMULATIONS ON ADJACENT PROPERTIES AND IN PUBLIC FACILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR.
4. ALL EXPOSED EARTH SURFACES MUST HAVE APPROPRIATE CONTROLS TO PROTECT FROM WIND AND WATER EROSION DURING ALL PHASES OF THE PROJECT.
5. STOCKPILES INACTIVE FOR 14 DAYS ARE REQUIRED TO HAVE TEMPORARY STABILIZATION OR APPROPRIATE COVER TO CONTROL WIND AND WATER EROSION.
6. THE OPERATOR WITH CONTROL OF THE DAILY SITES ACTIVITIES IS REQUIRED TO MAINTAIN ALL SITE BMP'S IN GOOD CONDITION FOR THE DURATION OF THE PROJECT UNTIL A NOTICE OF TERMINATION IS ACCEPTED BY THE EPA.
7. IF SITE EARTH DISTURBANCES EXCEED 5 ACRES AT ANY ONE TIME, TEMPORARY AND/OR PERMANENT STABILIZATION MUST BE COMPLETED WITHIN 7 DAYS WHEN AREA BECOMES INACTIVE OR EARTH DISTURBING ACTIVITIES ARE COMPLETE. SITE EARTH DISTURBANCES OF LESS THAN 5 ACRES, HAVE 14 DAYS TO PROVIDE TEMPORARY OR PERMANENT STABILIZATION WHEN AREA BECOMES INACTIVE OR EARTH DISTURBING ACTIVITIES ARE COMPLETE.

## GRAPHIC SCALE



LIMITS OF DISTURBANCE  
50.35 AC

## PROPOSED

- BOUNDARY LINE
- LIMITS OF DISTURBANCE
- CONTOUR ELEVATIONS

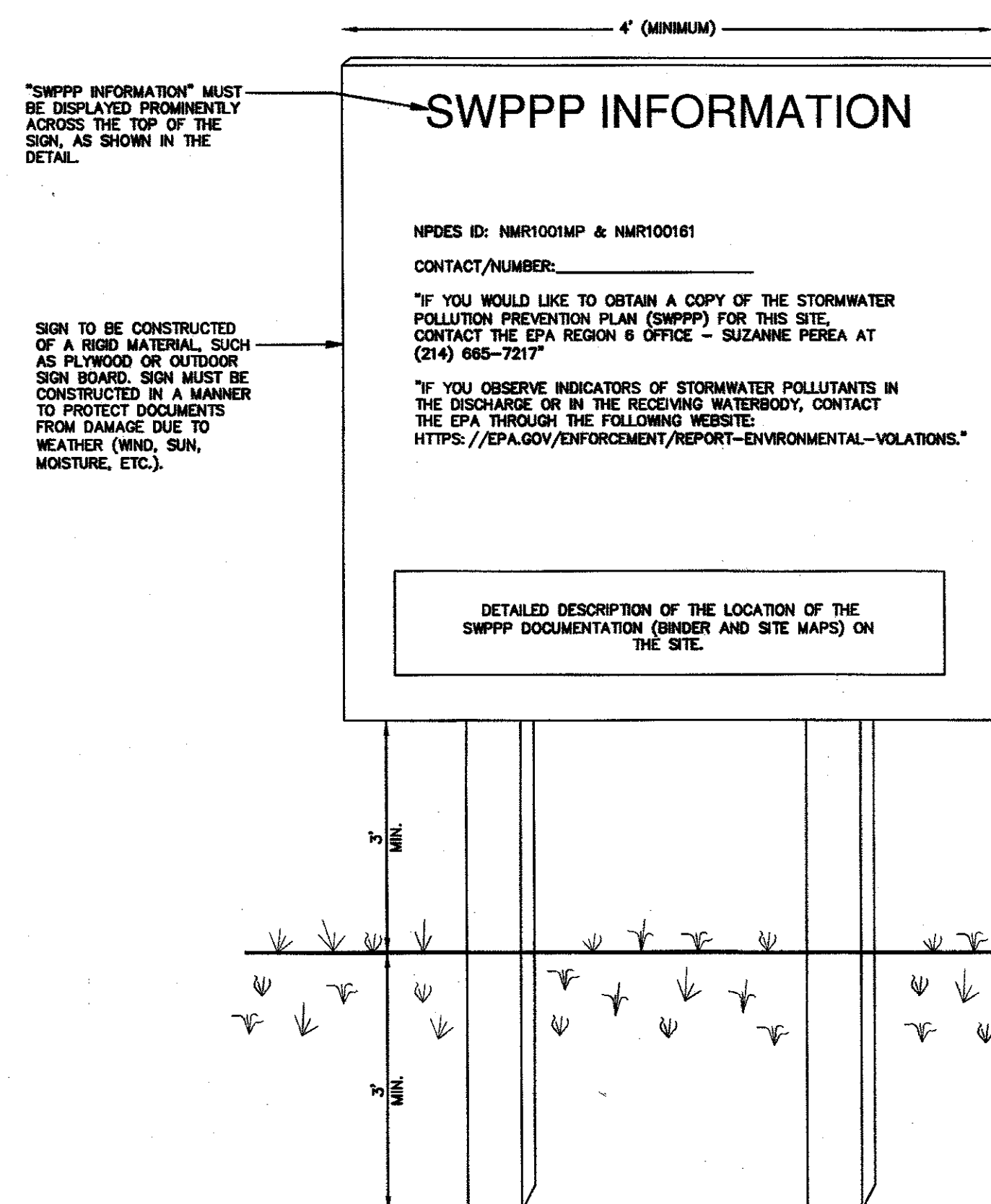
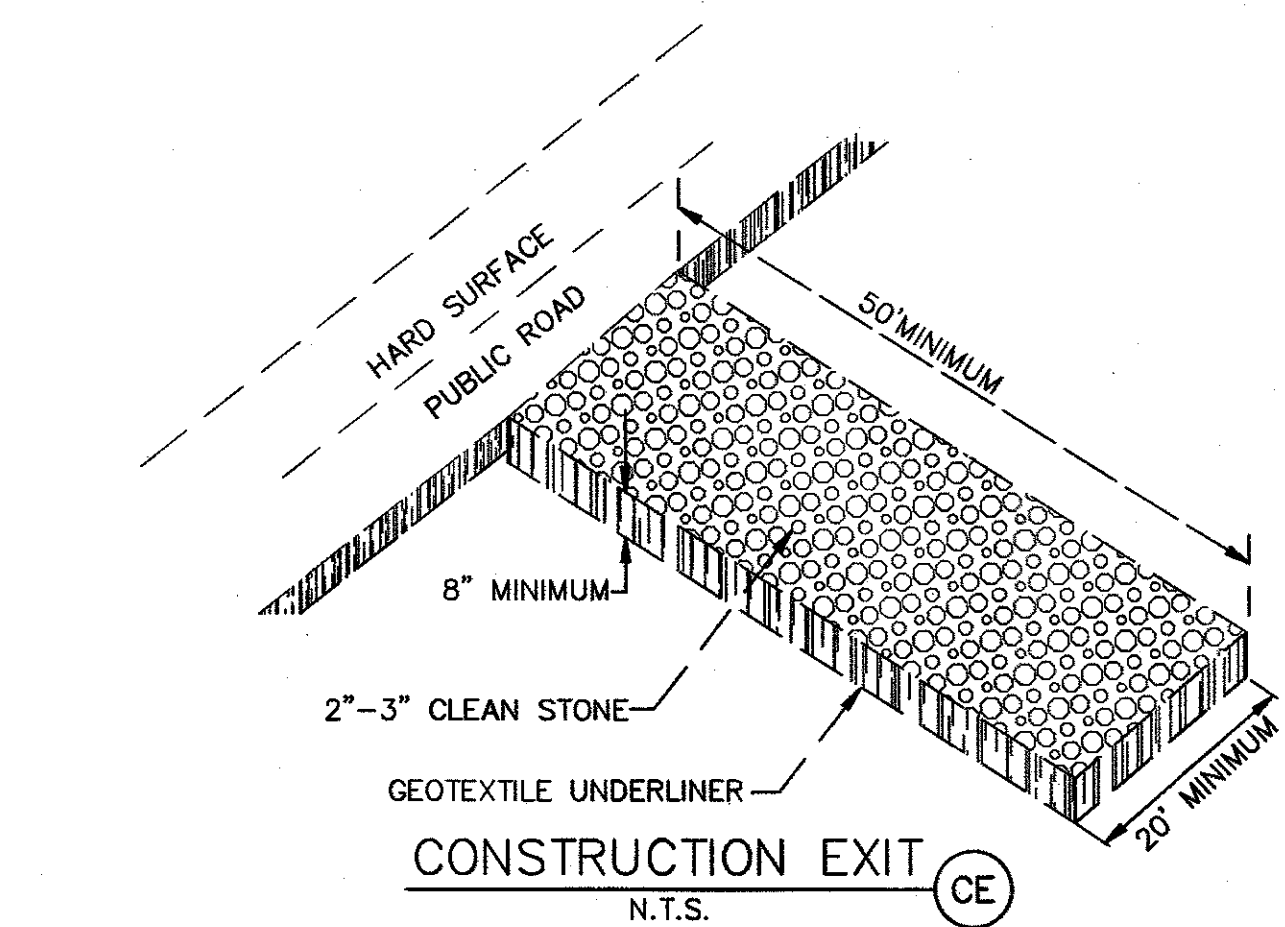
## EROSION DETAILS

- CE TEMPORARY STONE CONSTRUCTION EXIT
- SF TEMPORARY SILT-FENCE
- ST TEMPORARY SEDIMENT TRAP
- IP INLET PROTECTION
- SB TEMPORARY SEDIMENT BASIN

## EROSION NOTES

- TPS TEMPORARY PARKING AND STORAGE

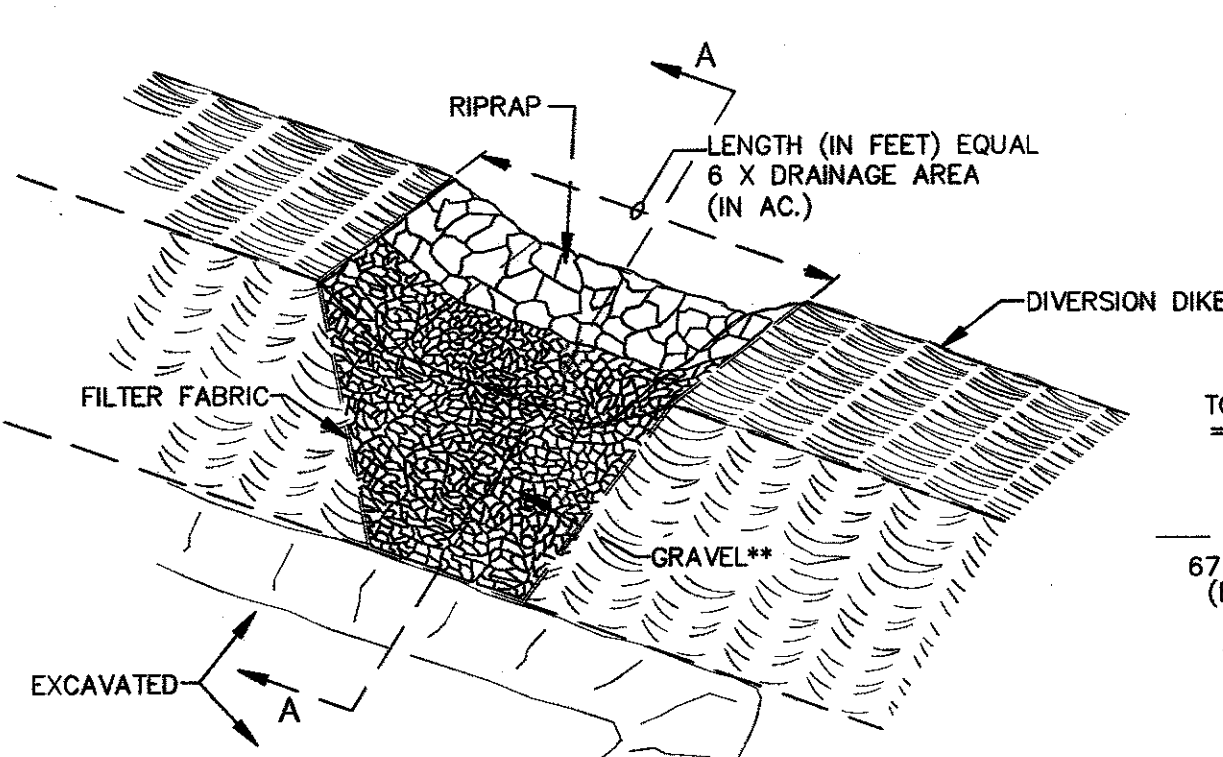




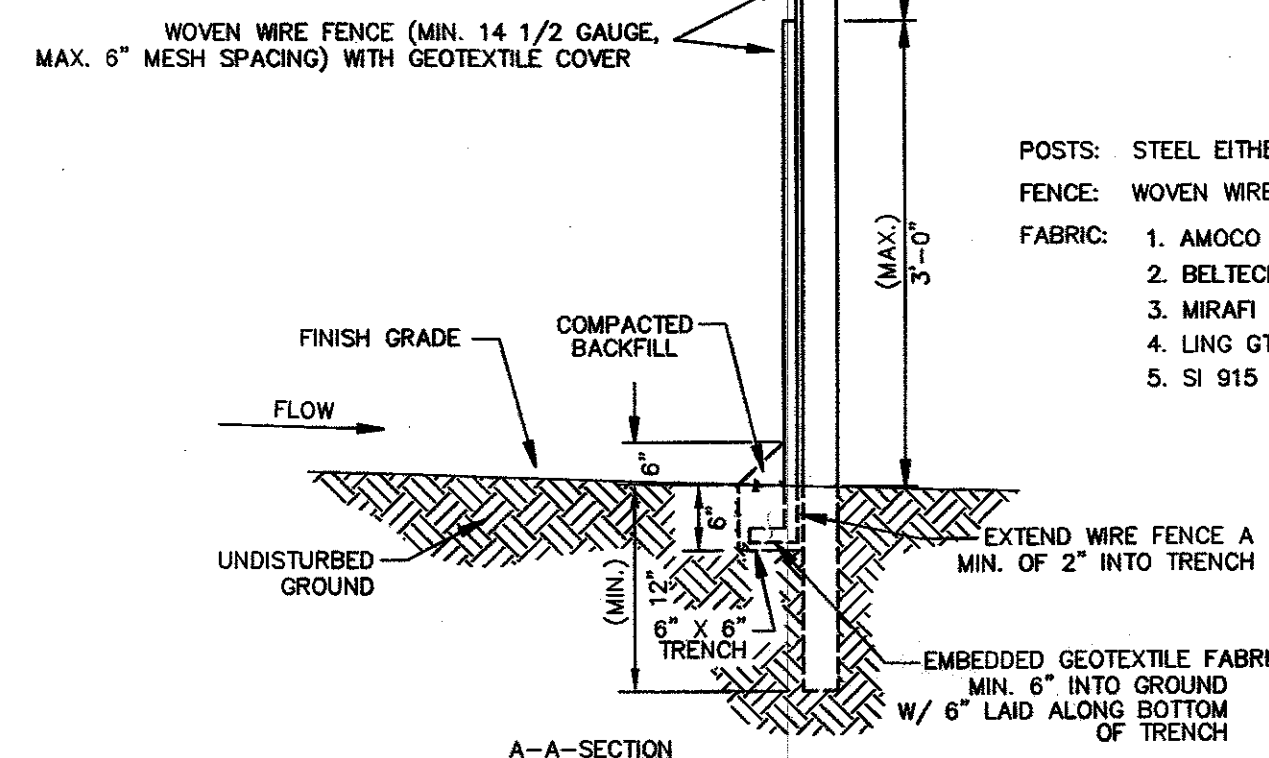
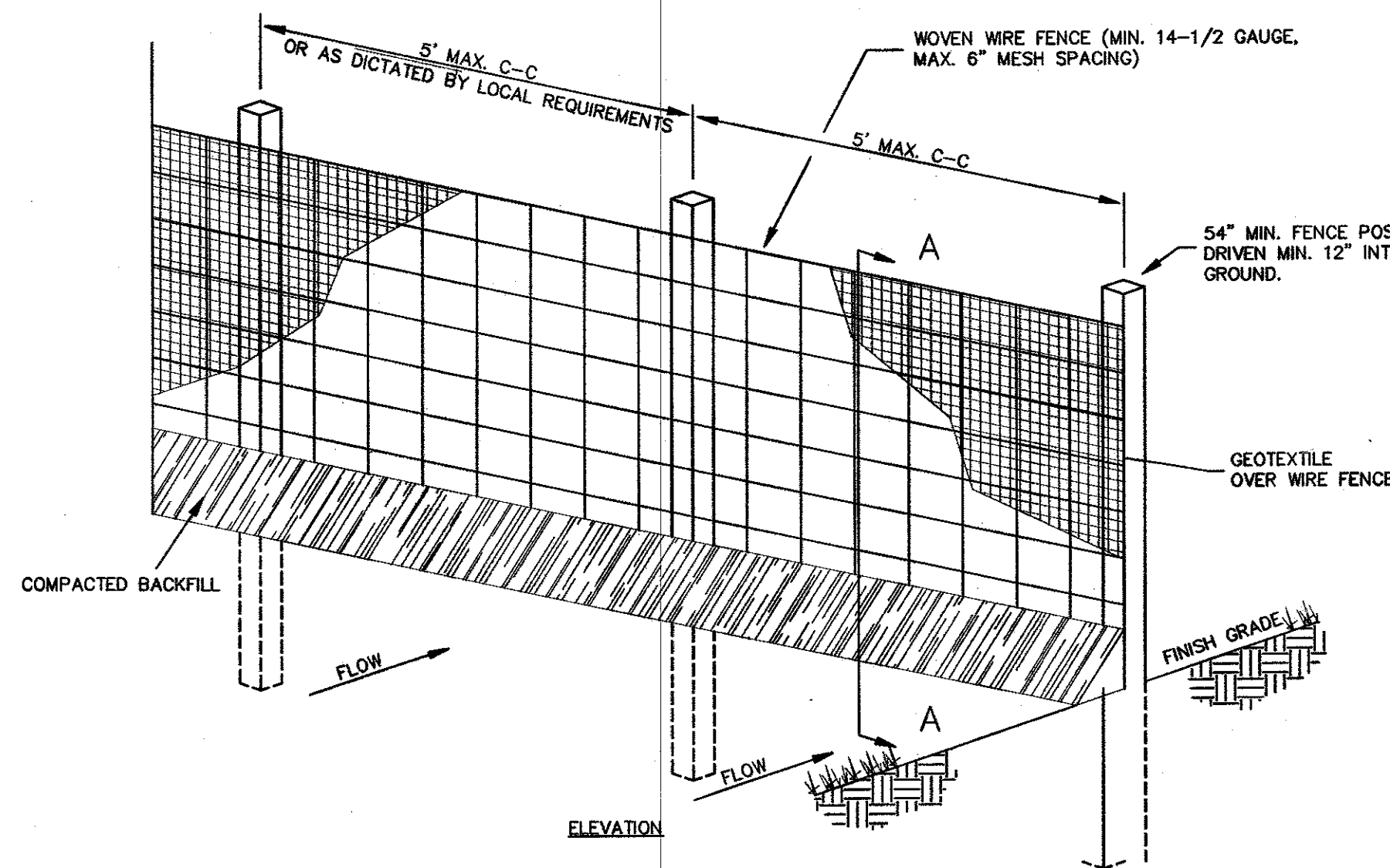
- NOTES:
1. THE SWPPP INFORMATION SIGN MUST BE LOCATED NEAR THE CONSTRUCTION EXIT OF THE SITE, SUCH THAT IT IS ACCESSIBLE AND VIEWABLE BY THE GENERAL PUBLIC, BUT NOT OBSTRUCTING VIEWS AS TO CAUSE A SAFETY HAZARD.
  2. ALL POSTED DOCUMENTS MUST BE MAINTAINED IN A CLEARLY READABLE CONDITION AT ALL TIMES THROUGHOUT CONSTRUCTION AND UNTIL THE NOTICE-OF-TERMINATION (NOT) IS FILED FOR THE PERMIT.
  3. CONTRACTOR SHALL POST OTHER STORM WATER AND/OR EROSION AND SEDIMENT CONTROL RELATED PERMITS ON THE SIGN AS REQUIRED BY THE GOVERNING AGENCY.
  4. SIGN SHALL BE LOCATED OUTSIDE OF PUBLIC RIGHT-OF-WAY AND EASEMENTS UNLESS APPROVED BY THE GOVERNING AGENCY.
  5. CONTRACTOR IS RESPONSIBLE FOR ENSURING STABILITY OF THE SWPPP INFORMATION SIGN.

SWPPP INFORMATION SIGN (SS)  
N.T.S.

\*\* GRAVEL SHALL BE 2"-3" CLEAN STONE

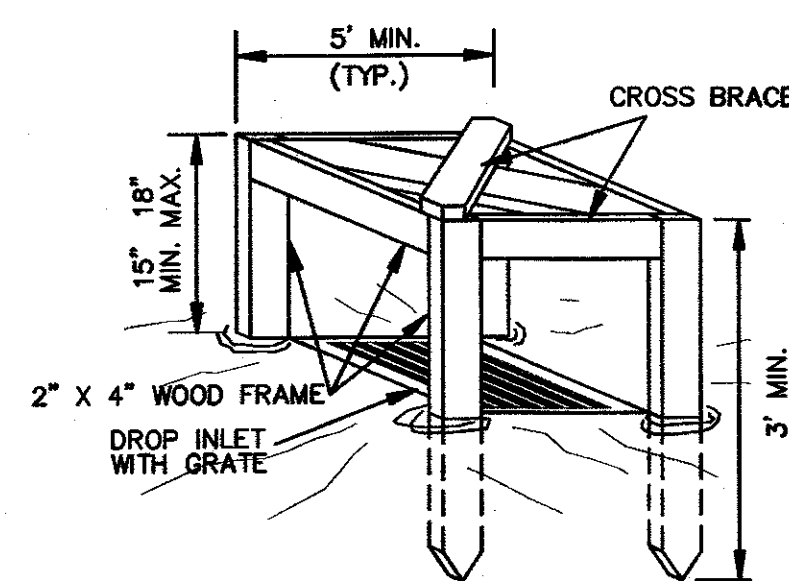


OUTLET (PERSPECTIVE)  
TEMPORARY SEDIMENT TRAP (ST)  
N.T.S.



1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES.
2. GEOTEXTILE TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
3. WHEN TWO SECTIONS OF GEOTEXTILE ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED.
4. MAINTENANCE SHALL BE PERFORMED AS NOTED IN THE EROSION CONTROL PLAN. COLLECTED MATERIAL SHALL BE REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.
5. ALL SILT FENCE SHALL INCLUDE WIRE SUPPORT UNLESS INDICATED OTHERWISE

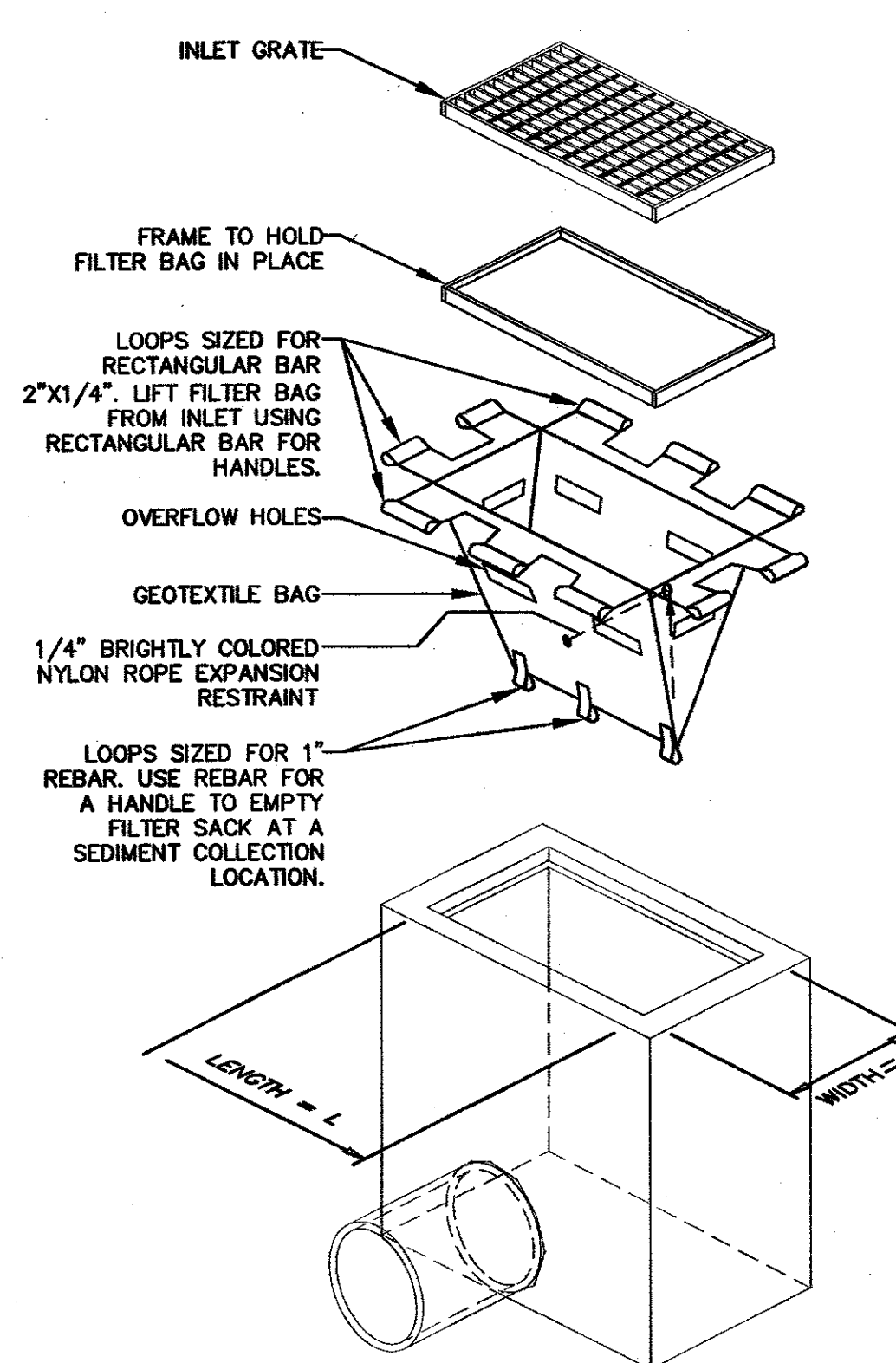
SEDIMENTATION/SILT FENCE WITH WIRE SUPPORT (SF)  
N.T.S.



POSTS: 2 X 4 WOODEN STAKE  
FENCE: WOVEN WIRE, 14-1/2 GA., 6" MAX. MESH OPENING  
FABRIC: IN ACCORDANCE WITH ASTM D 8461 LATEST EDITION.

1. ATTACH THE WOVEN WIRE FENCE TO EACH POST AND THE GEOTEXTILE TO THE WOVEN WIRE FENCE (SPACED EVERY 30") WITH THREE WIRE TIES OR OTHER FASTENERS, ALL SPACED WITHIN THE TOP 8" OF THE FABRIC. ATTACH EACH DIAGONALLY 45 DEGREES THROUGH THE FABRIC, WITH EACH PUNCTURE AT LEAST 1" VERTICALLY APART.
2. WHEN TWO SECTIONS OF SILT FENCE MATERIAL ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED ACROSS TWO POSTS.
3. MAINTENANCE SHALL BE PERFORMED AS NOTED IN THE SWPPP. DEPTH OF ACCUMULATED SEDIMENTS MAY NOT EXCEED ONE-HALF THE HEIGHT OF THE FABRIC. MAINTENANCE CLEANOUT MUST BE CONDUCTED REGULARLY TO PREVENT ACCUMULATED SEDIMENTS FROM REACHING ONE-HALF THE HEIGHT OF THE SILT FENCE MATERIAL ABOVE GRADE.
4. ALL SILT FENCE INLETS SHALL INCLUDE WIRE SUPPORT.

SILT FENCE INLET PROTECTION (IP6)  
N.T.S.

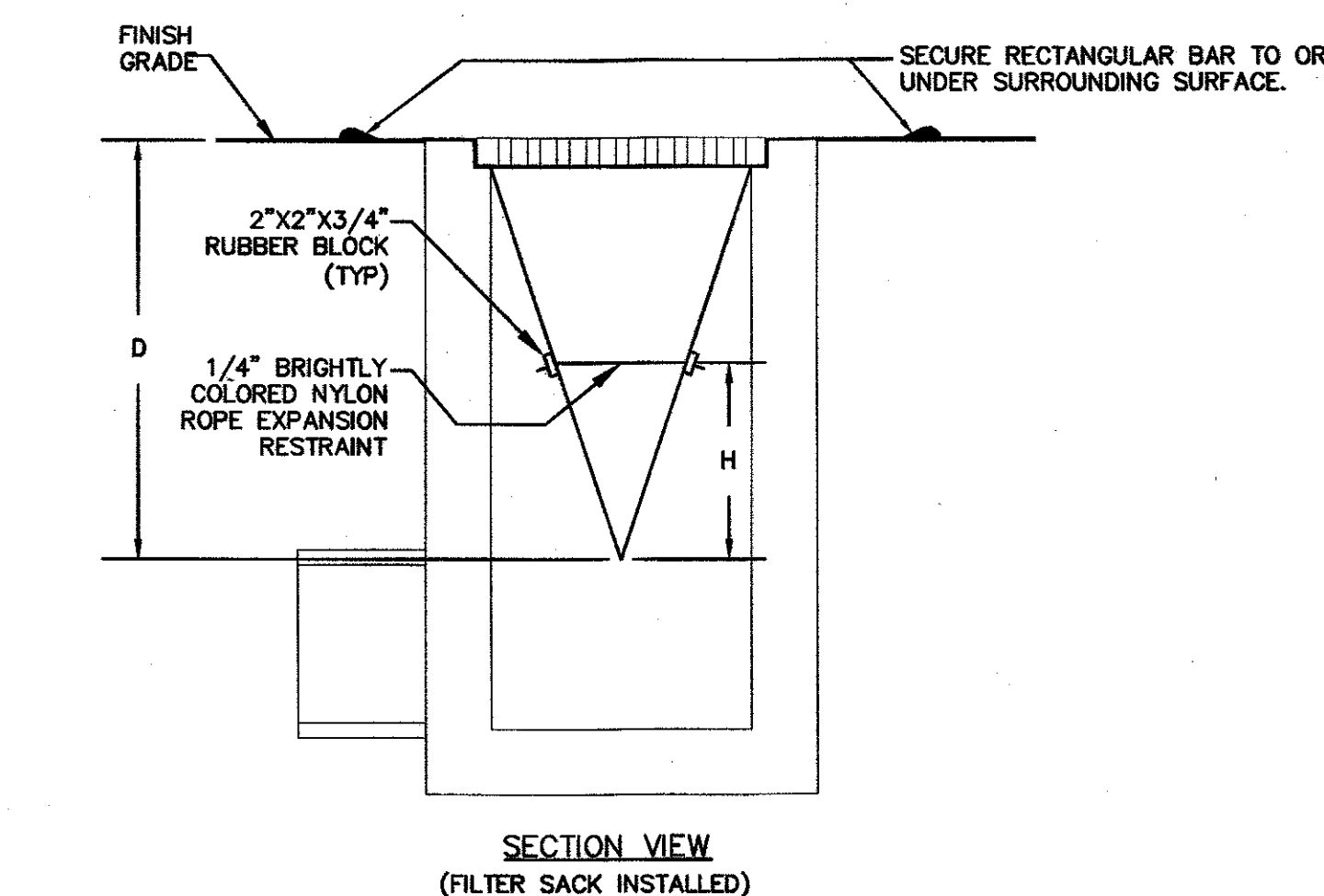


PROPERTIES	TEST METHOD	UNITS
GRAB TENSILE STRENGTH	ASTM D-4632	300 LBS
GRAB TENSILE ELONGATION	ASTM D-4632	20 %
PUNCTURE	ASTM D-4633	120 LBS
MULLEN BURST	ASTM D-3786	800 PSI
TRAPEZOID TEAR	ASTM D-4533	120 LBS
UV RESISTANCE	ASTM D-4355	80 %
APPARENT OPENING SIZE	ASTM D-4751	40 US SIEVE
FLOW RATE	ASTM D-4491	40 GAL/MIN/SQ FT
PERMITTIVITY	ASTM D-4491	0.55 SEC -1

PROPERTIES	TEST METHOD	UNITS
GRAB TENSILE STRENGTH	ASTM D-4632	265 LBS
GRAB TENSILE ELONGATION	ASTM D-4632	20 %
PUNCTURE	ASTM D-4633	135 LBS
MULLEN BURST	ASTM D-3786	420 PSI
TRAPEZOID TEAR	ASTM D-4533	45 LBS
UV RESISTANCE	ASTM D-4355	90 %
APPARENT OPENING SIZE	ASTM D-4751	20 US SIEVE
FLOW RATE	ASTM D-4491	200 GAL/MIN/SQ FT
PERMITTIVITY	ASTM D-4491	1.5 SEC -1

INLET PROTECTION FILTER SACK (IP5)  
N.T.S.

FOR USE ONLY IN PAVED AREAS WHERE SEDIMENT LOADS ARE EXPECTED TO BE VERY LOW. FILTER SACK MUST HAVE OVERFLOW HOLES TO PREVENT PONDING.



NOTES:

1. GEOTEXTILE SHALL BE A WOVEN POLYPROPYLENE FABRIC THAT MEETS OR EXCEEDS REQUIREMENTS IN THE SPECIFICATIONS TABLE.
2. PLACE AN OIL ABSORBENT PAD OR PILLOW OVER INLET GRATE WHEN OIL SPILLS ARE A CONCERN.
3. THE WIDTH, "W", OF THE FILTER SACK SHALL MATCH THE INSIDE WIDTH OF THE GRATED INLET BOX.
4. THE DEPTH, "D", OF THE FILTER SACK SHALL BE BETWEEN 18 INCHES AND 36 INCHES.
5. THE LENGTH, "L", OF THE FILTER SACK SHALL MATCH THE INSIDE LENGTH OF THE GRATED INLET BOX.

MAINTENANCE NOTES:

1. INLET PROTECTION DEVICES MUST BE INSPECTED FOR SEDIMENT ACCUMULATION WITHIN THE CATCH BASIN. REMOVE TRAPPED SEDIMENT WHEN BRIGHTLY COLORED EXPANSION RESTRAINT CAN NO LONGER BE SEEN.
2. REMOVAL OF SEDIMENT ACCUMULATED IN OR ADJACENT TO A STORM DRAIN INLET MUST BEGIN IMMEDIATELY UPON DISCOVERY, WITH COMPLETION OF THE ACTIVITY OCCURRING NO LATER THAN THE END OF THE FOLLOWING BUSINESS DAY.
3. INLET PROTECTION DEVICES SHALL BE INSPECTED FOR UNINTENDED BYPASS OR IMPROPER FLOW-RATES THAT MAY CAUSE DOWNSTREAM FLOODING.
4. CONTACT THE CEC FOR ALTERNATE INLET PROTECTION IF THE DESIGNED PROTECTION MAY IMPACT DOWNSTREAM BMPs, ADJACENT SLOPES, ETC., DUE TO PONDING ISSUES. ENSURE THAT NO UNDERMINING OF INLET PROTECTION DEVICES HAS OCCURRED.
5. INLET PROTECTION DEVICES AND BARRIERS SHALL BE REPAIRED OR REPLACED IF THEY SHOW SIGNS OF UNDERMINING OR DETERIORATION.

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Job No.

2018014

CAD/CHK'D By:

pm / vc

Date

4-28-19

Sheet Title

EROSION CONTROL  
DETAILS

Sheet No.

C302

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